



Prosodic Markers of Prestige and Power in Academic vs. Non-Academic Speakers: A Mixed-Method Socio-phonetic Study

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Abstract:

Prosody functions as a powerful yet often under examined resource in the construction of institutional authority and social prestige. While sociolinguistic research has traditionally emphasized segmental variation, emerging work in sociophonetics highlights the socially indexical role of suprasegmental features such as pitch range, boundary tones, rhythm, and speech rate. This mixed-method sociophonetic study investigates how prosodic markers differentiate academic and non-academic speakers in multilingual Pakistani contexts. Drawing on Labovian variationist sociolinguistics, indexicality theory, and Bourdieu's notion of linguistic capital, the study analyzes speech samples from forty bilingual Urdu–English speakers across formal and semi-formal communicative settings. Acoustic measurements were conducted using Praat to examine fundamental frequency (F0), pitch range, boundary tone realization, speech rate, pause duration, and rhythmic variability. The findings reveal systematic prosodic differences between groups. Academic speakers consistently demonstrate wider pitch range, controlled falling boundary tones in declaratives, faster yet regulated speech rate, and shorter hesitation pauses. In contrast, non-academic speakers exhibit narrower pitch ranges, higher frequency of rising declaratives, longer pauses, and greater rhythmic fluctuation. These patterns remain consistent across both English and Urdu discourse, suggesting that institutional prestige prosody operates beyond language-specific phonological systems. The study argues that prosodic moderation and boundary control function as audible indices of epistemic authority and embodied linguistic capital. By foregrounding Pakistani multilingual speech within socioprosodic scholarship, this research contributes empirical evidence that prestige and power are not only lexically articulated but acoustically constructed.

Keyword: Sociophonetics; Prosodic markers; Institutional prestige; Indexicality; Pakistani multilingualism

1Introduction:

Prosody i.e. encompassing intonation, pitch range, rhythm, speech rate, and intensity; plays a crucial role in encoding not only linguistic meaning but also social meaning. While traditional sociolinguistic research has predominantly focused on segmental variation (e.g., vowels and consonants), increasing attention has been directed toward prosodic features as socially indexical resources (O'Rourke & Baltazani, 2023; Foulkes & Docherty, 2006). Intonation, in particular, has been shown to signal stance, authority, gender identity, regional affiliation, and interactional positioning (Henriksen, 2013; Warren & Daly, 2000).

Recent developments in sociophonetics advocate for the integration of intonation studies within variationist frameworks under the emerging field of socioprosodics (O'Rourke & Baltazani, 2023). Socioprosodics investigates how prosodic variables function as socially meaningful markers, addressing questions such as how intonation varies across social groups, how it contributes to identity construction, and whether such variation reflects stable stratification or change in progress. Despite these advancements, research remains heavily skewed toward European and North American speech communities, leaving Global South contexts—including Pakistan—underexplored.

In Pakistan, English occupies a complex sociolinguistic position. As a legacy of colonial administration and a continued language of governance, academia, and elite mobility, English is closely tied to institutional authority and social prestige. Pakistani English exhibits distinct phonological features shaped by multilingual contact and localized sociocultural practices. While segmental variation in Pakistani English has received scholarly attention—including studies on diphthongs and fricatives from a sociophonetic perspective—prosodic variation remains comparatively understudied (e.g., gender-based diphthong research in Pakistani English 2023-Sociophoneticsandfricative). Given the institutional prestige associated with academic discourse in Pakistan, it is plausible that academic speakers employ particular prosodic strategies—such as wider pitch range, controlled speech rate, specific boundary tones, or declarative contour patterns—that index authority, expertise, and legitimacy. Non-academic speakers, by contrast, may exhibit different prosodic norms reflecting alternative identity positions and communicative goals. Drawing on auto-segmental metrical approaches to intonation (Ladd, 2008; Pierrehumbert, 1980) and variationist sociolinguistics (Labov, 1966; Eckert, 2012), the present study investigates how prosodic features function as markers of prestige and power in Pakistani English.

Pakistan presents a linguistically layered environment in which Urdu operates as a national lingua franca, Punjabi and Saraiki function as major regional languages, and English carries high institutional prestige. While much research has addressed segmental variation in Pakistani English and regional languages, the suprasegmental dimension—particularly its role in constructing prestige and power—has received limited systematic attention. In institutional domains such as academia, speech is expected to reflect epistemic authority. Lecturers, researchers, and academic professionals are trained not only in disciplinary knowledge but also in modes of presentation that project credibility. These expectations are often internalized and reproduced acoustically through controlled prosodic patterns. Conversely, non-academic speech, while equally meaningful and socially rich, may prioritize relational engagement over epistemic finality.

The current study adopts a mixed-method sociophonetic approach, combining acoustic analysis of fundamental frequency, pitch range, speech rate, and boundary tones with qualitative discourse analysis to examine how speakers index authority across institutional contexts. By situating prosodic variation within the sociocultural hierarchy of Pakistani English, this research contributes to the expanding field of socioprosodics and addresses a significant gap in South Asian sociophonetic scholarship.

1.2 Research Questions

1. What acoustic prosodic differences exist between academic and non-academic speakers?
2. Do these differences vary across Urdu, Punjabi, and Saraiki?

3. How do listeners evaluate prestige and authority based solely on prosody?
4. Is perceived power correlated with pitch range, speech rate, or intonation contour?

2. Literature Review

2.1. Sociophonetics and the Social Meaning of Prosody

Sociophonetics emerged from the intersection of phonetics and variationist sociolinguistics, seeking to understand how fine-grained phonetic detail correlates with social categories and identity construction (Foulkes & Docherty, 2006; Thomas, 2011). Early sociolinguistic work focused largely on segmental variables—vowel shifts, consonantal variation, and phonological processes—demonstrating that speech reflects systematic social stratification (Labov, 1966). However, scholars increasingly recognize that social meaning is not encoded only in segments; suprasegmental features such as intonation, pitch range, rhythm, and speech rate are equally powerful in indexing identity and stance. The emerging field of socioprosodics explicitly addresses this gap. O'Rourke and Baltazani (2023) argue that intonation should be treated as a sociolinguistic variable capable of systematic variation across communities and social groups. They highlight how prosodic features function as resources for signaling belonging, authority, and interpersonal alignment. This perspective aligns with third-wave sociolinguistics, which views linguistic variation not merely as a reflection of demographic categories but as a socially meaningful practice through which speakers construct identities (Eckert, 2012). Prosody is particularly salient because it operates simultaneously at multiple levels: phonological structure, discourse organization, and social interaction. Unlike segmental variables, which may be perceived as markers of accent or region, prosodic features often carry subtler but equally potent social meanings. Through pitch modulation, boundary tones, and rhythmic control, speakers project confidence, uncertainty, dominance, deference, engagement, or detachment.

2.2 Prosodic Markers

Prosodic markers refer to suprasegmental features of speech—such as pitch, stress, rhythm, tempo, and pausing—that structure spoken discourse and convey pragmatic, affective, and social meaning beyond lexical content. Unlike segmental phonemes (consonants and vowels), prosodic features operate over larger phonological domains, including syllables, words, phrases, and utterances. They are central to discourse organization, stance marking, and the indexing of social identity (Ladd, 2008; Selkirk, 2011). Within phonology, prosodic markers are understood as manifestations of hierarchical prosodic structure (Nespor & Vogel, 1986). Within sociophonetics and interactional linguistics, they are viewed as socially meaningful cues that index authority, alignment, politeness, and prestige (Eckert, 2008; Foulkes & Docherty, 2006). In studies of institutional discourse, prosody has been shown to signal epistemic stance, control of floor, and interactional dominance (Levon, 2014). Broadly, prosodic markers can be categorized into the following types:

2.2.1. Intonation (Pitch Contours)

Intonation refers to patterned variations in fundamental frequency (F0) across an utterance. It is typically realized through rising, falling, fall-rise, and rise-fall contours, which contribute to sentence type, information structure, and pragmatic meaning (Ladd, 2008).

English Examples:

Falling intonation (↘) – Declarative certainty

"This is the final result." ↘

Signals completeness and authority.

Rising intonation (↗) – Yes/no question

"Are you ready?" ↗

Signals interrogation or uncertainty.

Fall-rise contour – Reservation or politeness

"I suppose it's possible." ↘↗

In academic discourse, falling contours are often associated with epistemic certainty and institutional authority.

Urdu Examples:

Urdu similarly employs intonational contrasts, though its pitch patterns interact with its SOV structure.

Declarative falling contour

“یہ درست ہے۔” (Yeh durust hai.) ↘
“This is correct.”

Signals assertive stance.

Rising contour for polar questions

“آپ آ رہے ہیں؟” (Aap aa rahe hain?) ↗
“Are you coming?”

Polite fall-rise contour

“شاید ایسا ہو۔” (Shayad aisa ho.) ↘↗

Urdu intonation plays a key role in politeness and deference, especially in formal settings.

2.2.2 Stress and Prominence

Stress refers to relative emphasis placed on syllables or words, typically realized through increased pitch, duration, and intensity. In English, stress is contrastive and can alter meaning (Ladd, 2008).

English Examples:

“*I didn’t say he stole the money.*”
Stressing different words changes implied meaning.
“*This is VERY important.*”
Prominence marks emphasis.

Urdu Examples:

Urdu stress is less lexically contrastive but plays a role in focus marking.

“یہ میں نے کیا ہے۔”
(Yeh *main* ne kiya hai.)
“I did this.”

Stress on “main” signals contrastive focus.

“وہ آج آئے گا۔”
(Woh *aaj* aayega.)

Emphasis on “aaj” highlights temporal focus.

In both languages, prominence functions as a discourse marker indicating new information, contrast, or correction.

2.2.3 Rhythm and Speech Rate

Rhythm concerns timing patterns across syllables and feet. English is often described as stress-timed, while Urdu shows syllable-timed tendencies, though such dichotomies are gradient rather than absolute (Dauer, 1983). Speech rate influences perception of authority and competence. Faster, controlled tempo in academic contexts may index confidence, while slower tempo may index caution or emphasis.

English Example:

Slow tempo for emphasis:
“This... is not... acceptable.”
Rapid tempo in persuasive speech to project dynamism.

Urdu Example:

Deliberate slowing for seriousness:
“یہ... ایک... اہم... فیصلہ... ہے۔”
(Yeh... aik... aham... faisla... hai.)

Used in formal announcements. Speech rate is thus a prosodic marker of stance and institutional authority.

2.2.4 Pausing and Boundary Marking

Pauses and boundary tones signal discourse segmentation and turn management (Selkirk, 2011).

English:

“If we examine the data || we notice a clear trend.”

The pause marks a prosodic boundary.

Longer pauses can indicate hesitation; strategically placed pauses can signal control.

Urdu:

“اگر ہم اعداد و شمار دیکھیں || تو ایک واضح رجحان نظر آتا ہے۔”

(Agar hum adaad-o-shumaar dekhein || to aik wazeh rujhan nazar aata hai.)

In formal Urdu speeches, boundary clarity enhances perceived authority.

Table 1 Types of Prosodic Markers

Type	Acoustic Correlates	Function	English Example	Urdu Example
Intonation	F0 contour	Sentence type, stance	“This is correct.” ↘	“یہ درست ہے۔” ↘
Stress	Pitch, duration, intensity	Focus, contrast	“I <i>didn't</i> say that.”	“یہ میں نے کیا ہے۔”
Rhythm	Timing intervals	Speech style, fluency	Stress-timed pattern	Syllable-timed tendency
Speech Rate	Syllables per second	Authority, urgency	Fast academic delivery	Slow formal emphasis
Pausing	Silence duration	Discourse segmentation	“...data	
Voice Quality	Phonation type	Persona, stance	Creaky seriousness	Modal formal tone

2.2.5 Voice Quality (Phonation)

Voice quality includes breathiness, creakiness, and modal voice. These features carry indexical meaning (Podesva, 2007).

English

Creaky voice in declaratives may index seriousness.

Breathiness may index softness or intimacy.

Urdu

Formal speech often uses controlled modal phonation.

Breathiness in informal speech may index warmth or solidarity.

Voice quality is increasingly studied as a sociophonetic marker of prestige and persona.

Table 2 Prosodic Markers and Social Meaning

Prosodic Feature	Potential Indexical Meaning	Relevance to Prestige/Power
Wide pitch range	Engagement, dynamism	Charismatic authority
Narrow pitch range	Control, seriousness	Institutional authority
Falling declaratives	Certainty	Expertise
Controlled tempo	Confidence	Professional prestige

Strategic pauses	Discourse control	Interactional dominance
Clear boundary marking	Coherence	Academic legitimacy

Prosodic markers function simultaneously at structural, pragmatic, and social levels. Structurally, they are governed by hierarchical phonological organization (Nespor & Vogel, 1986). Pragmatically, they signal information structure and stance (Ladd, 2008). Socially, they index identity and authority (Eckert, 2008; Foulkes & Docherty, 2006). In institutional contexts, particularly academic discourse, prosodic markers become salient indicators of prestige and epistemic authority. Cross-linguistically, English and Urdu demonstrate comparable prosodic systems, though realized through language-specific rhythmic and syntactic constraints.

2.3 Prosody as Identity Practice: Third-Wave Perspectives

Intonation has long been recognized as central to pragmatic meaning, distinguishing statements from questions, signaling focus, and organizing information structure (Cruttenden, 2007; Ladd, 2008). Yet beyond grammatical distinctions, intonation contributes to perceptions of credibility and authority. Research in discourse phonetics demonstrates that lower pitch ranges and controlled pitch movements are often associated with authority and institutional power, whereas wider pitch excursions may index involvement, emotionality, or conversational engagement (Gussenhoven, 2004; Warren & Daly, 2000). Studies of style and speaking condition further reveal that prosody is sensitive to context. Henriksen (2013) found that speakers systematically adjust intonational patterns depending on task type and formality, suggesting that prosodic variation is not random but socially conditioned. In institutional contexts such as academic lectures, courtroom discourse, and news broadcasting, speakers tend to adopt more regulated pitch contours and deliberate pacing. These features contribute to the perception of expertise and legitimacy. Bourdieu's (1991) concept of linguistic capital provides a useful theoretical lens here. Language varieties—and by extension, prosodic styles—can function as symbolic resources linked to power structures. In settings where institutional authority matters, certain prosodic norms may become associated with prestige. Academic speech, for example, may privilege measured tempo, stable intonation patterns, and strategic pitch lowering as markers of epistemic authority. However, despite theoretical acknowledgment of prosody's role in signaling power, empirical sociophonetic comparisons between institutional and non-institutional speakers remain limited. Much of the literature has explored gender, regional identity, or ethnic affiliation rather than professional hierarchy. Third-wave sociolinguistics emphasizes that linguistic features acquire meaning through social practice (Eckert, 2012). Rather than treating variables as passive reflections of class or occupation, this approach considers how speakers actively deploy linguistic resources to position themselves within social fields. From this perspective, prosodic features are not merely byproducts of education or training; they may be stylistic choices shaped by institutional norms and interactional goals. Prosodic control can therefore be understood as an index of epistemic stance. Academic speakers, whose roles require projecting knowledge and authority, may cultivate prosodic patterns that signal confidence and control. Non-academic speakers, operating in different social domains, may prioritize interactional warmth, narrative engagement, or relational alignment, leading to distinct prosodic realizations. Importantly, prosodic meaning is culturally situated. What counts as authoritative intonation in one context may not function identically in another. This makes it essential to investigate prosodic variation within specific sociocultural settings rather than generalizing from Western-centric models. Sociophonetics emerged from the recognition that social meaning resides in fine phonetic detail. Foulkes and Docherty (2006) argue that phonetic variables are integral to identity construction and cannot be reduced to abstract phonological categories. Thomas (2011) further emphasizes that acoustic analysis provides empirical grounding for examining how variation correlates with social positioning.

While early variationist research focused heavily on segmental variables, more recent scholarship acknowledges that suprasegmental features—intonation, pitch range, rhythm—are equally socially meaningful. O'Rourke and Baltazani (2023) propose the concept of socioprosodics, asserting that intonation patterns function as sociolinguistic variables subject to stylistic and contextual modulation. Prosody differs from segmental variation in that it operates simultaneously at phonological, pragmatic, and interactional levels. It signals not only grammatical distinctions but also stance, alignment, and authority.

Bourdieu (1991) conceptualizes language as symbolic capital operating within structured social fields. Institutional authority depends on the recognition of legitimate linguistic forms. In academic contexts, particular modes of speech are valorized as credible, rational, and authoritative. Prosodic control may function as embodied linguistic capital. Speakers who internalize institutional norms often exhibit moderated pitch range, deliberate pacing, and controlled boundary marking. These features signal alignment with the expectations of formal discourse and contribute to perceptions of expertise. In Pakistan, prosodic convergence toward global academic norms may reinforce social stratification where English-medium education and academic affiliation often index elite status (Rahman, 1996)

2.4 Theoretical Foundations

2.4.1. Labovian Variationist Sociolinguistics

Labovian variationist sociolinguistics provides the empirical and theoretical foundation for examining how linguistic forms correlate systematically with social structure. Labov's seminal work demonstrated that variation is not random but socially stratified and patterned, what he termed "orderly heterogeneity" (Labov, 1966, 1972). Through quantitative analysis of phonological variables—such as postvocalic /r/ in New York City—Labov established that linguistic features vary according to socioeconomic class, style, and context, and that speakers actively shift styles to index social positioning. Central to this framework is the concept of the **linguistic variable**, defined as a set of alternative forms with the same referential meaning but different social distributions (Labov, 1972). Variationist methodology relies on quantitative correlation between linguistic features and social categories (class, gender, education, network density). Importantly, Labov distinguished between **indicators, markers, and stereotypes**, demonstrating how some variables carry overt prestige while others signal covert solidarity. In contemporary sociolinguistics, the variationist paradigm has expanded beyond segmental phonology to include prosodic and discourse-level phenomena (Tagliamonte, 2012).

For research on prosodic markers of prestige and power, Labovian theory legitimizes the systematic investigation of pitch range, intonational contours, speech rate, and prominence as socially stratified variables rather than stylistic accidents. Academic speakers, for instance, may exhibit expanded pitch range or controlled intonational phrasing that correlates with institutional authority, while non-academic speakers may display alternative rhythmic or intonational norms associated with local identity.

2.4.2. Indexicality Theory: Prosody as Social Meaning

While variationism explains correlation, **indexicality theory** explains meaning. Rooted in linguistic anthropology, indexicality posits that linguistic forms point to (index) social identities, stances, and ideologies (Silverstein, 2003). Rather than merely reflecting social categories, linguistic features participate in constructing them. Silverstein (2003) introduced the concept of **orders of indexicality**, arguing that linguistic features acquire layered social meanings over time. Eckert (2008) further developed this through the concept of the **indexical field**, suggesting that variables evoke a constellation of potential social meanings rather than a single fixed identity. In this framework, prosodic features such as lowered pitch, controlled tempo, or declarative intonation may index authority, expertise, and epistemic certainty—traits culturally associated with prestige and institutional power. Recent work in sociophonetics demonstrates that prosody is particularly potent in stance-taking and persona construction (Podesva, 2007; Levon, 2014). For example, pitch modulation can index assertiveness, hesitancy, or deference. Thus, prosody functions not merely as acoustic

structure but as social semiotics embedded in interaction. In the context of academic versus non-academic speakers, prosodic choices become part of a broader indexical system through which speakers align themselves with institutional norms or community-based identities.

2.4.3. Prosodic Hierarchy Theory

Prosodic Hierarchy Theory provides the structural framework for understanding how prosody is organized in speech. Developed in generative phonology, the theory proposes that prosody is arranged into hierarchically ordered constituents such as the **utterance (U)**, **intonational phrase (IP)**, **phonological phrase (φ)**, **prosodic word (ω)**, foot, and syllable (Nespor & Vogel, 1986; Selkirk, 1984, 2011). The hierarchical organization constrains where prominence, boundary tones, and pitch movements may occur. For example, intonational phrase boundaries often align with discourse units and pragmatic emphasis. Selkirk (2011) argues that prosodic phrasing interfaces with syntax and information structure, meaning that prominence placement can signal focus, contrast, or epistemic stance. In studies of prestige and power, prosodic hierarchy theory clarifies how macro-level structures (intonational phrasing) and micro-level prominence patterns jointly contribute to the perception of authority. Academic speech may exhibit longer intonational phrases, fewer hesitations, and more systematic boundary marking, projecting coherence and control. Without this structural framework, sociophonetic analysis would lack theoretical grounding for interpreting prosodic variation beyond raw acoustic measurement.

Table 3 Core Assumptions of Theoretical Frameworks

Theory	Key Scholars	Core Assumption	Relevance to Prestige & Power
Labovian Variationism	Labov (1966, 1972)	Linguistic variation is socially structured and quantitatively measurable	Prosodic variables can correlate with social class, education, institutional authority
Indexicality Theory	Silverstein (2003); Eckert (2008)	Linguistic forms index social meanings and identities	Prosody indexes authority, expertise, stance
Prosodic Hierarchy Theory	Nespor & Vogel (1986); Selkirk (2011)	Prosody is hierarchically structured and interfaces with syntax/discourse	Intonational phrasing and prominence signal discourse control and authority
Sociophonetics	Foulkes & Docherty (2006); Hay & Drager (2007)	Acoustic detail encodes social meaning and is empirically measurable	Pitch range, tempo, and boundary strength can be quantitatively analyzed as prestige markers

2.4.4. Sociophonetics: Bridging Social Theory and Acoustic Analysis

Sociophonetics integrates sociolinguistic theory with phonetic methodology to examine how social meaning is encoded in fine phonetic detail (Foulkes & Docherty, 2006; Hay & Drager, 2007). It emphasizes both production and perception, recognizing that social categories are constructed through listeners' interpretation of acoustic cues. Sociophonetic research employs instrumental analysis (e.g., fundamental frequency, intensity, duration, spectral measures) combined with statistical modeling to examine socially conditioned variation. Crucially, sociophonetics treats social meaning as gradient and probabilistic rather than categorical. Recent developments incorporate experimental perception studies to examine how listeners

associate pitch range, speech rate, and intonation contours with authority or prestige (Levon, 2014). In examining academic versus non-academic speakers, sociophonetics provides the methodological toolkit for measuring pitch span, speech tempo, boundary strength, and voice quality, and for testing whether these features systematically correlate with perceived power.

Table 4 Analytical Dimensions for Prosodic Prestige Research

Dimension	Variationism	Indexicality	Prosodic Hierarchy	Sociophonetics
Unit of Analysis	Linguistic variable	Social meaning/stance	Prosodic constituent (IP, φ , ω)	Acoustic measure (F0, duration, intensity)
Methodology	Quantitative correlation	Ethnographic & interactional	Phonological modeling	Instrumental phonetic analysis
View of Prestige	Social stratification	Ideologically mediated meaning	Structured prominence	Perceptual & acoustic salience
Application to Academic Speech	Style shifting	Indexing authority	Controlled phrasing	Measurable pitch span & rhythm

2.5 Sociophonetic Research in Pakistan

Within Pakistan, sociophonetic scholarship has primarily concentrated on segmental features of Pakistani English. Research on vowel systems, diphthong production, and fricative realization has demonstrated that phonetic variation correlates with gender, educational background, and regional affiliation. These studies confirm that Pakistani English is socially stratified and phonetically dynamic. However, prosodic variation remains relatively underexplored. Given the sociopolitical history of English in Pakistan—as a colonial legacy and a continuing language of governance, higher education, and elite mobility—prosodic features may carry significant symbolic weight (Rahman, 1996). English proficiency often indexes access to institutional power, and prosodic control may form part of this indexical repertoire. In multilingual contexts such as Pakistan, prosodic systems are shaped by contact among Urdu, Punjabi, Saraiki, Pashto, and other regional languages. Transfer effects may influence intonation patterns in Pakistani English, while institutional training (e.g., academic presentation norms) may promote convergence toward globally recognized academic prosodic styles. This interplay between local linguistic ecology and global academic norms makes Pakistan an especially compelling site for socioprosodic investigation. A review of the literature reveals several gaps. First, socioprosodic research has disproportionately focused on European and North American varieties of English. Second, while studies have examined gender and regional variation, fewer have explored occupational or institutional distinctions, particularly in postcolonial contexts. Third, Pakistani English research has yet to systematically examine prosodic markers of prestige and power through acoustic measurement combined with sociolinguistic interpretation. These gaps underscore the need for research that integrates acoustic phonetic analysis with sociological insight. A mixed-method approach combining quantitative measures such as fundamental frequency (f0), pitch range, and speech rate with qualitative discourse analysis, can illuminate how authority is not only spoken but sounded. Urdu has been described as exhibiting phrase-final rising contours in certain interrogative and narrative contexts, alongside falling contours for declarative closure. Punjabi, characterized by its tonal distinctions at the lexical level, demonstrates interaction between lexical tone and intonational contour, often resulting in dynamic pitch movements in discourse. Saraiki, while closely related to Punjabi, exhibits distinct intonational phrasing patterns influenced by regional speech rhythm. In informal

conversation across these languages, speakers frequently employ rising boundary tones to maintain interactional continuity. However, formal speech contexts may encourage reduced variability and more consistent low boundary tones, particularly in expository discourse. These patterns provide a foundation for examining how academic speakers may regulate regionally characteristic prosodic tendencies in favor of institutional norms.

3. Methodology

3.1 Research Design

The present study adopts a mixed-method sociophonetic design integrating quantitative acoustic analysis with qualitative discourse interpretation. Drawing on Labovian variationist sociolinguistics (Labov, 1966, 1972), prosodic features are treated as socially stratified linguistic variables whose distribution correlates with institutional affiliation and perceived prestige. Simultaneously, third-wave sociolinguistic theory (Eckert, 2012) and indexicality theory (Silverstein, 2003) inform the interpretation of prosodic features as socially meaningful practices rather than purely structural phenomena. The study employs a comparative cross-sectional design contrasting academic and non-academic speakers across multilingual Pakistani contexts. The primary objective is to determine whether measurable prosodic differences exist between institutional and non-institutional speech and how such differences function as indexical markers of prestige and power.

3.2 Participants

Forty adult participants were recruited through stratified purposive sampling. The sample consisted of twenty academic professionals (university lecturers, assistant professors, and doctoral scholars) and twenty non-academic professionals (small business owners, administrative staff, and service-sector workers). Gender distribution was balanced across groups. All participants were bilingual in Urdu and English. Academic participants reported daily professional use of English in instructional and research contexts, whereas non-academic participants primarily used Urdu in professional interactions with limited English usage. Participants represented Urdu-dominant linguistic backgrounds, with exposure to Punjabi and Saraiki in regional contexts. None reported speech or hearing impairments.

3.3 Data Collection Procedures

Speech samples were collected in three communicative conditions to capture stylistic variation:

1. Formal monologic speech (five-minute topic presentation)
2. Guided semi-structured interview
3. Spontaneous narrative recounting

Academic speakers provided excerpts from lecture-style discourse and formal explanatory speech. Non-academic speakers participated in guided interviews about occupational experiences and narrated personal accounts. Recordings were conducted using a Zoom H4n Pro digital recorder at a sampling rate of 44.1 kHz in acoustically controlled indoor settings. Speech was orthographically transcribed and segmented into intonational phrases following an autosegmental-metrical framework (Ladd, 2008).

3.4 Acoustic and Analytical Measures

Acoustic analysis was conducted using Praat (Boersma & Weenink, 2023). The following prosodic variables were extracted:

- Mean fundamental frequency (F0)
- Pitch range (maximum–minimum F0 per intonational phrase)
- Boundary tone type (L-L%, H-H%, L-H%)
- Speech rate (syllables per second)
- Pause duration (milliseconds)
- Intensity (dB)
- Rhythm (Pairwise Variability Index)

Pitch contours were annotated using simplified ToBI conventions. Quantitative measures were averaged across speech tokens per participant. Statistical comparison was conducted using independent-samples t-tests to assess group differences.

Qualitative discourse analysis examined alignment between prosodic realization and epistemic stance, turn-taking structure, and discourse organization.

4. Data Analysis

4.1 Acoustic Findings

Quantitative analysis revealed systematic prosodic differences between academic and non-academic speakers. Academic speakers demonstrated significantly wider pitch ranges and faster speech rates compared to non-academic speakers. Non-academic speakers exhibited longer pauses and a higher frequency of rising boundary tones in declarative contexts.

Table 5 Mean Prosodic Measurements across groups

Variable	Academic Speakers	Non-Academic Speakers	Significance (p)
Mean F0	198 Hz	184 Hz	.041
Pitch Range	210 Hz	165 Hz	.008
Speech Rate	5.2 syll/sec	4.1 syll/sec	.012
Mean Pause Duration	320 ms	580 ms	.005
Rising Declaratives (%)	12%	37%	.003

4.2 Intonational Contours and Boundary Marking

Academic speech frequently concluded declarative propositions with falling boundary tones (L-L%), signaling epistemic closure. For example: *“The data clearly demonstrate a statistically significant trend.”* This utterance exhibited a high pitch onset followed by a controlled fall to low boundary, indexing certainty and discursive authority. In contrast, non-academic speakers frequently employed rising terminal contours (H-H%) even in declarative contexts: *“So this means the policy will change?”* Although grammatically declarative, the rising boundary tone conveyed mitigated stance and interactional alignment.

4.3 Urdu Prosodic Patterns

Parallel patterns were observed in Urdu discourse.

Academic Example:

“Yeh nateeja wazeh tor par sabit karta hai.”
(‘This result clearly proves.’)

Contour analysis indicated a low boundary tone and compressed pitch variation across the intonational phrase.

Non-Academic Example:

“Acha... yeh sahi hai?”
(‘Oh... is that correct?’)

This utterance displayed extended vowel lengthening, a higher pitch peak near utterance-final position, and a rising boundary tone.

4.4 Cross-Linguistic Prosodic Comparison

Table 6 Prosodic Realization of Prestige Across English and Urdu

Feature	Academic English	Academic Urdu	Non-Academic English	Non-Academic Urdu
Declarative Contour	Falling	Falling	Rising frequent	Rising frequent

Pitch Range	Wide	Moderate-wide	Narrow	Narrow
Speech Rate	Fast-controlled	Moderate-controlled	Slower	Slower
Pause Frequency	Low	Low	High	High
Rhythm Regularity	High	Moderate-high	Irregular	Irregular

The convergence of falling declaratives and regulated tempo across languages suggests that institutional prestige prosody transcends linguistic boundaries.

5. Discussion

The findings support the central hypothesis that prosodic features function as socially stratified variables indexing prestige and institutional power. In line with Labovian variationist principles, prosodic variation correlates systematically with occupational affiliation rather than emerging randomly. Academic speakers exhibit prosodic compression and boundary control, aligning with globalized academic discourse norms. Falling boundary tones signal epistemic authority, while moderated pitch range reflects controlled rhetorical stance. These features operate as first-order indexicals of institutional alignment (Silverstein, 2003). Through repeated social recognition, they become second-order indexicals associated with prestige and symbolic capital (Bourdieu, 1991). The findings also reveal that non-academic speakers' greater use of rising terminals and extended pauses reflects interactional negotiation rather than epistemic closure. Rising declaratives function as mitigators, preserving relational harmony rather than asserting dominance. Importantly, these patterns persist across English and Urdu contexts, suggesting that prestige prosody operates at a supra-linguistic social level. Institutional identity appears to override regional prosodic tendencies. The findings also confirm that prosodic hierarchy plays a crucial role. Differences primarily manifest at the intonational phrase level, particularly in boundary tone realization and phrase-final lowering. This structural level is where epistemic stance becomes acoustically salient

6. Conclusion

This study demonstrates that prestige and power in multilingual Pakistani contexts are acoustically constructed through systematic prosodic patterning. Academic speakers consistently employ wider pitch range, falling boundary tones, faster yet regulated speech rate, and reduced hesitation. Non-academic speakers display interactionally dynamic contours characterized by rising terminals and extended pauses. Prosody thus emerges as an embodied form of linguistic capital. Through participation in institutional discourse communities, speakers internalize and reproduce prestige-coded prosodic norms. These norms are not restricted to English but are transferable to Urdu, indicating that prosodic authority is socially rather than linguistically bounded. By integrating sociophonetic measurement with variationist theory and indexical interpretation, this study contributes to the growing field of socioprosodics and foregrounds Pakistani multilingual speech within global discussions of language and power. Future research may incorporate perception experiments, longitudinal tracking of prosodic acquisition, and comparative studies across additional regional languages such as Punjabi and Saraiki.

References

- [1] Bourdieu, P. (1991). *Language and symbolic power*. Harvard University Press.
- [2] Cruttenden, A. (2007). *Intonation* (2nd ed.). Cambridge University Press.
- [3] Eckert, P. (2008). Variation and the indexical field. *Journal of Sociolinguistics*, 12(4), 453–476. <https://doi.org/10.1111/j.1467-9841.2008.00374.x>
- [4] Eckert, P. (2012). Three waves of variation study: The emergence of meaning in the study of sociolinguistic variation. *Annual Review of Anthropology*, 41, 87–100. <https://doi.org/10.1146/annurev-anthro-092611-145828>
- [5] Foulkes, P., & Docherty, G. (2006). The social life of phonetics and phonology. *Journal of Phonetics*, 34(4), 409–438. <https://doi.org/10.1016/j.wocn.2005.08.002>
- [6] Gussenhoven, C. (2004). *The phonology of tone and intonation*. Cambridge University Press.
- [7] Hay, J., & Drager, K. (2007). Sociophonetics. *Annual Review of Anthropology*, 36, 89–103. <https://doi.org/10.1146/annurev.anthro.34.081804.120633>
- [8] Henriksen, N. (2013). Style, prosodic variation, and the social meaning of intonation. *Journal of the International Phonetic Association*, 43(2), 153–193. <https://doi.org/10.1017/S0025100313000073>
- [9] Labov, W. (1966). *The social stratification of English in New York City*. Center for Applied Linguistics.
- [10] Labov, W. (1972). *Sociolinguistic patterns*. University of Pennsylvania Press.
- [11] Ladd, D. R. (2008). *Intonational phonology* (2nd ed.). Cambridge University Press.
- [12] Levon, E. (2014). Categories, stereotypes, and the linguistic perception of sexuality. *Language in Society*, 43(5), 539–566. <https://doi.org/10.1017/S0047404514000554>
- [13] Nespor, M., & Vogel, I. (1986). *Prosodic phonology*. Foris.
- [14] O'Rourke, E., & Baltazani, M. (2023). Sociophonetics and intonation: A proposal for socioprosodics. In C. Strelluf (Ed.), *The Routledge handbook of sociophonetics* (pp. 23–54). Routledge.
- [15] Podesva, R. J. (2007). Phonation type as a stylistic variable: The use of falsetto in constructing a persona. *Journal of Sociolinguistics*, 11(4), 478–504. <https://doi.org/10.1111/j.1467-9841.2007.00334.x>
- [16] Rahman, T. (1996). *Language and politics in Pakistan*. Oxford University Press.
- [17] Selkirk, E. O. (1984). *Phonology and syntax: The relation between sound and structure*. MIT Press.
- [18] Selkirk, E. O. (2011). The syntax–phonology interface. In J. Goldsmith, J. Riggle, & A. Yu (Eds.), *The handbook of phonological theory* (2nd ed., pp. 435–484). Wiley-Blackwell.
- [19] Silverstein, M. (2003). Indexical order and the dialectics of sociolinguistic life. *Language & Communication*, 23(3–4), 193–229. [https://doi.org/10.1016/S0271-5309\(03\)00013-2](https://doi.org/10.1016/S0271-5309(03)00013-2)
- [20] Tagliamonte, S. A. (2012). *Variationist sociolinguistics: Change, observation, interpretation*. Wiley-Blackwell.
- [21] Thomas, E. R. (2011). *Sociophonetics: An introduction*. Palgrave Macmillan.
- [22] Warren, P., & Daly, N. (2000). Pitching it differently: Gender and intonation in New Zealand English. *Journal of Sociolinguistics*, 4(1), 85–96. <https://doi.org/10.1111/1467-9481.00105>