

COLONIAL LEGACY TO ALGORITHMIC GOVERNANCE: LANGUAGE POLICY, POWER, AND AI IN PAKISTAN (1947–2025)

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ABSTRACT

This paper has analyzed the history of language policy in Pakistan since 1947 to 2025. The aim of the research was to examine the ways language policy produces and reinforces power, ideology, and linguistic inequality between English, Urdu, and regional languages and explore the impact of the emergence of artificial intelligence (AI) as a new player in language policy. A qualitative interpretive research design was used in the study. It was based on interdisciplinary theoretical framework that combines Language Policy and Planning (LPP), Critical Theory, and Algorithmic Governance. The research relied on the secondary sources of data, such as documents on language policy, provisions of the constitution, education policy, AI policy frameworks, and scholarly literature. The data were collected using purposive sampling. Historical analysis, critical policy analysis and interpretive evaluation were the methods of analyzing data. The results indicate that the language policy in Pakistan has changed in terms of its form, but not structure with the hierarchical system of language policy where English is dominant, Urdu is symbolic and regional languages are excluded. An analysis of history and the constitution indicates that there has always been a policy-practice gap in which Urdu is advanced and English remains in power to govern, teach and learn, and socio-economic mobility. Education policies and institutional practices give other pieces of evidence that prove that English is being used as linguistic capital where it strengthens the power of the elite and social inequalities. At the modern stage, AI has become a non-state language policy player, whereby the data availability and technological infrastructure determine the representation of language. Algorithms have a strong preference in English, with partial Urdu support and no support of regional languages like Punjabi, which is the result of limited datasets and technical limitations, and results in algorithmic inequality (Cristaldi, 2025; Sharif et al., 2024; Butt et al., 2025). The study proves that linguistic inequality is not only traditionally passed on but also digitally replicated, and the policies of inclusive language and AI should be introduced.

KEYWORDS: Language Policy, Linguistic Inequality, Colonial Legacy, Algorithmic Governance, Artificial Intelligence, Pakistan, Multilingualism

1. INTRODUCTION

Since the independence, language policy in Pakistan has been an area of political compromise, identity and social division. Pakistan being a multilingual state was left with a complicated linguistic terrain as a result of colonialism, regionalism, and the ideological rivalry that existed between them. Initial policy making, especially the elevation of Urdu as the national language and the use of English in the administration, created a two-language system that keeps affecting the governance, education, and social mobility. This duality is an indication of the continued influence of colonial language dominations with English as a means of power and Urdu as a marker of national identity (Shehryar et al., 2020; Hashmi et al., 2024).

The language policy in Pakistan has experienced different stages of development over time, but it has always reproduced an inequality between the English, Urdu and regional languages. Studies indicate that Urdu has been given more priority as a unifying language of the country, whereas regional languages like Punjabi have been pushed to the periphery in policy making, in education, and in the mainstream (Hussain et al., 2024; Khan et al., 2025). Although it is the most spoken language, Punjabi is left out of most areas and this is a sign of linguistic discrimination and unequal access to opportunities (Hussain et al., 2020). Such dynamics underscore the fact that language policy is not an administrative issue but rather an issue that is ingrained into power relations and ideological formations that favor one group of people using language over another.

The power and social hierarchy that language creates is further supported by education, the media and the practices within the institutions. English which is linked to modernity, globalization, and financial mobility serves as a type of linguistic capital, giving an opportunity to get a higher level of education and a job (Khan et al., 2023; Saeed et al., 2024). Conversely, Urdu, although symbolically central to national identity, is not associated with the equivalent socio-economic benefits, and regional languages tend to be relegated to informal, and cultural spheres. Critical discourse analysis studies have shown the ways in which these hierarchies are created and supported by policy texts, political discourse, and educational practices to recreate intergenerational inequality (Hashmi et al., 2025).

Along with historical and institutional factors, the language policy in Pakistan has been predetermined by political conflicts and struggles over national identity. Early years of imposing Urdu during the independence helped to create linguistic tension, especially in East Pakistan, where marginalizing the Bengali language was a contributing factor to the ultimate separation of Bangladesh in 1971 (Butt et al., 2024). The historical episode highlights the repercussions of the exclusionary language policies in the society of multilingualism and the necessity of the inclusionary approach that would acknowledge linguistic diversity.

The new dimension of language policy has been brought about more recently by the rise of artificial intelligence (AI) and digital technologies. Machine translators, speech recognition systems, and online platforms are among the AI systems that are growing in language use, sites of visibility, and access. Studies show that such technologies are not neutral and are based on the current linguistic hierarchies, favoring those languages that have more digital representations and disadvantaging those with less representation (Butt et al., 2025). English is dominant in AI systems in Pakistan as it has the largest datasets and global reach, Urdu has an uncertain status, and region languages like Punjabi are underrepresented both because of the lack of data and institutional marginalization. This has resulted in the development of algorithmic inequality in which language-based inequalities are entrenched in technology.

The increasing presence of AI implies that language policy will no longer be traditional and state-centered, but a more complex system of algorithmic governance, in which the language choices are determined by the policy as well as by data, algorithms, and digital infrastructures. According to recent research, AI is a non-state language policy agent that has a disruptive effect on linguistic inclusion and exclusion that is beyond the scope of formal policies (Hussain et al. 2020). Such a change poses some very important questions concerning the future of the language policy and whether technology can either support or fight against current inequalities.

Although the language policy, multilingualism and linguistic inequality in Pakistan have already been studied extensively, there is still a vast gap in the comprehension of the interplay of these problems with new technologies like AI. Majority of the research has been done on the historical, political and educational aspects, but little has been done on how the technological systems are restructuring the hierarchies of languages. This paper fills this gap by analyzing how language policy has evolved based on the colonial heritage to algorithmic governance and combines the perspectives of language policy and planning, critical theory, and AI studies.

Thus, the study will seek to investigate how language policy in Pakistan has changed between 1947 and 2025, how it produces and reinforces power and inequality, and how AI becomes a new player in language policy in the digital era. The study takes an interdisciplinary and critical approach, which adds to the better comprehension of maintaining and changing linguistic hierarchies in the areas of institutions and technology.

1.1. Problem statement

The issue that has been discussed in this study is the current and dynamic linguistic inequality in Pakistan, which has its roots in the colonial past and has been perpetuated by institutional, ideological, and technological factors. Although there have been recurrent policies of language policies that advance the idea of Urdu to be the national language, and the acknowledgment of multilingualism, still, English dominance is dominant in education, government, and economic spheres thus, leaving a wide policy-practice gap. This has produced a stratification of linguistic hierarchy with English, as a language of power and movement, Urdu, as a language of symbolic use, and regional languages like Punjabi taking a back seat. Historical and political aspects of language policy have been widely studied in the past, but little is known about how these inequalities are being reproduced and solidified in the digital age. As the use of artificial intelligence becomes a new player in determining speech and language use, visibility, and access, linguistic hierarchies are increasingly encoded into data and technological systems and generate algorithmic inequality. Thus, the main issue is how language policy in Pakistan is reproducing inequality both in the institutional and digital sphere and how this transformation of the colonial past to the algorithmic governance maintains and does not affect but reinforces the current power structures.

1.2. Significance of the study

This work is important because it offers an interdisciplinary and wholesome insight into the nature of language policy in Pakistan through its connection to historical, political, ideological and technological aspects. It adds to the existing body of knowledge by proving the idea that linguistic inequality in Pakistan is not merely a remnant of colonial institutions, but it also is actively reproduced by the means of modern institutional practice and new AI-driven systems. The study goes beyond the conventional sources of analysis that focus on the state as a policy actor by incorporating the views of language policy and planning, critical theory, and algorithmic governance to make the technology a central policy actor. It emphasizes the increasing influence of artificial intelligence to create the language visibility, access, and power, which leads to the emergence of the notion of the algorithmic inequality in the Pakistani context. Policymakers, educators and technology developers are also interested in this research because they highlight the importance of inclusive language and digital policies that can achieve balance between institutional and technological inequalities. Finally, it offers valuable lessons towards the creation of more just language policies that would have the ability to foster linguistic diversity, social inclusion and digital justice within a multilingual society.

1.3. Research Questions

- 1) How has language policy in Pakistan evolved from 1947 to 2025, and to what extent does it reflect the continuity of colonial linguistic hierarchies?
- 2) How do language policies in Pakistan construct and reproduce power, ideology, and linguistic inequality among English, Urdu, and regional languages?
- 3) In what ways does artificial intelligence act as a new language policy actor, and how does it reproduce or transform existing linguistic inequalities in Pakistan?

2. LITERATURE REVIEW

This literature review explores the history of language policy in Pakistan through the interwoven perspectives of colonialism, authority, ideology and new technological changes. The current literature points out that language policy in Pakistan is not an apolitical administrative act, but a highly political and ideological act that is influenced by historical structures and socio-economic forces. Since the colonial institutionalization of English to the post-independence establishment of Urdu and marginalization of the regional languages, linguistic hierarchies have remained over time. More recent works expand this discussion into the digital age and show how artificial intelligence is transforming the use of language and reproducing the pre-existing inequalities.

2.1. Theoretical Framework

This study utilized an interdisciplinary theoretical approach to analyze the influence of power, ideology, and technological change in the molding of language policy in Pakistan. It incorporates three major viewpoints: Language Policy and Planning (LPP), a critical theory that deals with language, power, and ideology, and the notion of algorithmic governance, in which artificial intelligence (AI) acts as a policy maker. These frameworks are chosen as they fit perfectly into the theme of the study, which is that language policy in Pakistan has changed to technologically mediated governance with the state-centered colonial systems, although the underlying inequalities remain.

The theoretical perspective of this analysis is given by the Language Policy and Planning (LPP), which elucidates how language is chosen, controlled and applied in the context of social, political and institutional settings (Ricento, 2000; Kaplan and Baldauf, 2005). The model by Spolsky (2004) is especially relevant because it defines the language policy in terms of three components in a complex relationship: language practices, i.e. the actual use of language; language beliefs or ideologies, i.e. attitudes towards the language; and language management, i.e. formal policies and planning. This model is essential in the realization of the Pakistani context where there is a huge disparity between policy and practice. Despite the official promotion of Urdu as the national language, English remains the dominant language in practice in the realms of education, administration and elite. Also, LPP separates status planning, corpus planning and acquisition planning, which, collectively, contribute to explaining the different positions of Urdu, English and regional languages in a hierarchical linguistic system. Nevertheless, conventional LPP has been noted to be state centered in terms of its policy and this paper expands the model by considering the role of non-state actors, especially technology and artificial intelligence in the analysis.

To elaborate on the continued existence of linguistic hierarchies, this paper uses a critical approach in which it considers language as a space of power and inequality. In his argument, Tollefson (1991) holds that language policies are not neutral but they are set up to fulfill both political and economic interests usually favoring elite groups. English is used as a kind of linguistic capital in Pakistan and it can give access to education, jobs and the world. Simultaneously, the critical discourse studies show the language ideologies create and reproduce such hierarchies. Urdu is considered to have national identity, English modernity and development, and regional languages a low status or informality. These ideological fabrications help in perpetuating inequality within and between generations. This view is also intensified by the postcolonial knowledge, which focuses on the perpetuation of colonial model because the prevalence of English is not only a historical imprint but also a current

global and neoliberal impact (Ali, 2026). In this perspective, language policy becomes a way of perpetuating social stratification, marginalization of local languages and overall power relations in the society.

The main contribution of this work is that it introduces the concept of algorithmic governance to the language policy examination. Recent studies have shown that AI technologies, such as machine translation, speech recognition, and digital platforms are not tools of neutrality but agents that influence the use of language (Hussain et al., 2025). These systems affect the visibility of languages in the digital space, the languages that are supported or not, and the standardization and access to language. This brings about the idea of AI being a non-state language policy actor. The term algorithmic governance describes the situation when algorithms influence the decisions and social practices and do not just rely on the formal policy (Soltan et al., 2024). Here, governments no longer have the monopoly on the language policy but technological systems and data infrastructures do. An algorithmic inequality is a crucial problem in this framework since AI systems are based on unevenly distributed linguistic information. As a result, English is given the maximum support, Urdu is moderately represented and regional languages like Punjabi and Sindhi are underrepresented. By doing so, AI recreates the already existing linguistic inequalities and brings colonial and institutional inequalities into the digital realm.

Such a combined methodology allows the research to trace the shift in the system of colonial rule to the state policy of language and eventually to the algorithmic governance, where the continuity and change in the exercise of linguistic power can be seen.

2.2. Theoretical Developments in Language Policy and Planning (LPP)

The study of Language Policy and Planning (LPP) offers a convenient approach to studying these dynamics. The initial LPP studies were dedicated to technical and administrative features of language planning, however, recent changes put forward critical views on such topics and highlight power, ideology and inequality (Ricento, 2000; Hornberger, 2006). The language policy model introduced by Spolsky (2004) which consists of practices, beliefs, and management has been one model that has been particularly instrumental in pointing out the disparity between official policy and real language use. This model is very applicable in the Pakistani context where there is a tendency of deviation between the policy aims and language practices.

In recent scholarship, the importance of agency and complexity in language policy has been stressed too. Civico (2021) advocates an interdisciplinary stance which incorporates social, political, and technological aspects, whereas Liddicoat and Taylor-Leech (2021) emphasize the significance of various actors in the policy outcomes. These changes are the groundwork to the introduction of new dimensions to the analysis of language policy, including the digital technologies.

2.3. Language Policy, Colonial Legacy, and Power

The language policy in Pakistan cannot be explained without mentioning its colonial past. The British colonial rule institutionalized the use of English as a means of governance and education as well as elite political authority and established long-lasting linguistic hierarchies that are continued to exist in the postcolonial world (Rahman, 2009). After gaining independence in 1947, Urdu was declared as the national language to promote unity but English continued to dominate the administration and the university systems, creating a bilingual system that manifests unequal power relations (Mansoor, 2005).

Language policy, scholars argue, is both political and ideological in nature and not neutral. Tollefson (1991) argues that language planning has been used to serve the interests of the elite who suppress access to resource and opportunities. English language has remained a type of culture and linguistic capital in Pakistan, identified with modernity, mobility, and socioeconomic development. This strengthens colonial inequalities in new socio-political realities, and it is an illustration of what postcolonial theorists refer to as the persistence of imperial formations in post-independent states.

The analysis of critical discourse is another technique that further demonstrates the integration of language ideologies in the policy texts and the language of the masses. Indicatively, as illustrated by Hashmi et al. (2025), Urdu is represented as a moral and national language, whereas English is developed as progressive and elite, and Punjabi is mostly relegated to the status of a formal language. These discursive practices maintain the linguistic inequalities and justify inequality.

2.4. Language Policy and Education

A prime location of reproduction of linguistic hierarchies is in language-in-education policy. Kaplan and Baldauf (2005) conceptualize the language-in-education planning as an important part of a larger language policy, but in reality it works sporadically and unpredictably on its own. Education policies in Pakistan have been swapping between the encouragement of Urdu, English, and to a smaller degree, regional languages, which has led to the fragmentation and a lack of successful implementation of policies.

The policy-practice gap is a pattern observed in research, in which the official policies of Urdu or mother language education are not translated into real language practices. English-medium instruction (EMI) continues to prevail, especially in the elite institutions, which offers unequal opportunity to access quality education and employment opportunities (Mansoor, 2005). This is in line with the general sociolinguistic studies that indicate that language policy may reproduce social stratification instead of alleviating it (Tollefson, 1991). As Abbasi et al. (2025)

demonstrate, Sindhi families value the importance of Urdu and English in their upward mobility, although they have not yet lost symbolic attachment to the native language.

These results indicate a major drawback of conventional language policy models: all of them tend to ignore the importance of everyday practices and agency. Although top-down decisions influence language policy, bottom-up practices, as Liddicoat and Taylor-Leech (2021) posit, impact language policy in families, in schools, and in communities.

2.5. Marginalization of Regional Languages and Linguistic Inequality

The reality of the multilingualism in Pakistan is opposite to the language policy of the country, in which the Urdu and English languages are dominant whereas the regional languages are marginalized. Research always indicates that, Punjabi, though a popular language, does not have a supportive structure in terms of education, media, and policy (Khan et al., 2025). Such marginalization is not just linguistic but very much related to the matters of identity, power, and cultural representation.

The studies based on the Cultural Capital Theory (Bourdieu, 1991) show how the dominant languages gain symbolic and economic capital, and the minority languages are devalued (Butt et al., 2025). Institutional exclusion of the speakers of Punjabi and Saraiki, e.g., though these groups are significant in terms of demographics. The hierarchies are further propagated by the media, which links the regional languages to rural and backwardness (Khan et al., 2025). Nonetheless, there are still tensions, because by advancing one of the languages of the region (e.g., Punjabi), the rest might be marginalized, and this is why the inclusive language policy in a very diverse society is a complex matter.

2.6. Language Policy in the Age of Artificial Intelligence

The advent of artificial intelligence (AI) is a radical change in the language policy, with its new actors and governance mechanisms. The use of AI technologies, like machine translation, speech recognition, and online learning systems, affect how people use language and make it visible in a manner that is not constrained by conventional policy frameworks (Hussain et al., 2025). It has been shown that AI systems tend to reproduce the existing linguistic disparities. Languages that have more digital resources and datasets (English and, to a smaller degree, Urdu) get prioritized, whereas the representative languages in the regions (such as Punjabi) are underrepresented (Butt et al., 2025). It is a wider trend in the world as only a few languages control digital content and AI creation (Cristaldi, 2025).

The problems of low-resource languages are also brought to the fore by technical studies. As an illustration, Sharif et al. (2024) and Safder et al. (2024) show that Urdu language technologies are still limited by the lack of data, whereas Punjabi has even more issues with the variation of scripts and the absence of standardized datasets (Srivastava et al., 2024). Such structural limitations restrict the ability to incorporate regional languages into AI. Meanwhile, AI promises to provide the possibilities of preservation and revival of the languages. Ahmed et al. (2025) claim that AI may assist in the documentation of languages underrepresented, and Bhatti et al. (2025) state that AI models should be context-sensitive and culturally aware. Nevertheless, they are subject to these advantages based on inclusive policy frames and fair distributions of resources.

2.7. State Policy to Algorithmic Governance

Language policy, AI systems are non-state policy actors, which affect the language visibility, usability, and desirability in digital spaces (Hussain et al., 2025). This is a change of the classical and state-based thinking of language policy to a more elaborate system that entails both institutional and technological agents. Linguistic rights, equity and justice are critical concerns that AI-based language technologies are bringing up, as Soltan et al. (2024) claim. Algorithms themselves are not neutral, they are biased in terms of ideology and mirror the current hierarchical systems. This continuity makes it clear that the language policy has to be reconsidered with regards to the technological changes (Khan, et.al, 2024).

Although the language policy, education, and multilingualism in Pakistan have been heavily researched, there is still a significant gap in applying the traditional LPP framework to the AI and digital technologies. Majority of the research concentrates on historical policy or on particular sectors like education, without taking into account the general trend towards algorithmic governance. The research fills this gap by connecting the colonial legacy, the language policy, and AI and offers a detailed analysis of the reproduction of power and inequality on the institutional and technological levels.

3. METHODOLOGY

3.1. Research Design

The research design of current study was a qualitative, interpretive one where the authors examined the development of language policy in Pakistan between 1947 and 2025. The policy developments throughout the various periods in history were followed through a historical-institutional approach and the critical perspective was used to discuss the role of language policy as a manifestation of power, ideology, and inequality. This design allowed the research to pursue continuity and change, specifically, the continuation of colonial linguistic hierarchies and their adaptation to the digital and AI world.

3.2. Data Sources

The research was based on the authentic secondary data, which are systematized into analysis tables with historical policy data, constitutional clauses, educational policies, AI policy documents, and academic data. The key policy trends were followed with the help of historical data (1947-2025) and the constitutional sources (1956, 1962, 1973) gave a perspective on formal language structures and gaps in their implementation. Education policy focused on changes towards teaching in English, and data on AI were utilized to study the issue of presentation of language in digital systems. These sources combined facilitated the analysis of the language policy on an institutional and technological level.

3.3. Sampling Strategy

The research used purposive sampling to identify data that was pertinent to the research objectives. The selection of policy documents and historical data was based on four important periods 1947-1970, the early post-independence nation-building; 1970-1990, identity formation and political changes; 1990-2010, globalization and the rise of AI technologies; and 2010-2025, policy reforms. The periodization made it possible to analyze changes and continuities in language policy systematically over time.

3.4. Analytical Framework and Method of Analysis

The study combined historical analysis, critical analysis of policy, and interpretive analysis. It entailed charting policy development and change over the years, analyzing the disconnect between policy intention and policy practice, and language use in education, governance, and digital systems. The data about AI were analyzed to define the differences in the language representation and technological support. This approach in multiple steps enabled the study to show how language policy is functioning on institutional and technological levels and reproduces the existing hierarchies.

3.5. Validity and Limitations

Triangulation of various data sources was used to determine validity; policy documents, constitutional texts, and technological data. Tables were highly structured and contributed to consistency and comparability. One of the weaknesses of the study, however, was its use of secondary data and the scarcity of specific quantitative AI performance data used on regional languages. Also, the provincial differences in language policy were not examined to the end.

The methodology offered a structured and cohesive way of analyzing the situation of language policy in Pakistan through connecting historical processes, constitutional structures, as well as AI-based changes. It allowed the study to demonstrate how the hierarchies of language have remained between the colonial rule and the algorithms and this represents continuity in the power, even though the policy is of a different nature.

4. DATA ANALYSIS AND FINDINGS

The section includes the analysis and results of the study on the basis of the organized data in terms of historical language policies, constitutional and education policies and AI-associated systems in Pakistan between 1947 and 2025. The data are analyzed with the help of thematic tables based on the integrated analytical approach based on the theoretical framework of the study to find the patterns of continuity and change in language policy. The discussion is based on the way in which language policy is an expression of power, ideology and inequality at institutional and technological levels which emphasizes on the enduring dominance of English, the symbolic status of Urdu, and the marginalization of regional languages. It also discusses how new AI systems are transforming the governance of language and how they are extending old hierarchies into the digital realm, as well as cementing the process of replacement of the colonial past with the algorithmic governance.

Table 1 *Historical Language Policies in Pakistan (1947–2025)*

Period / Year	Policy / Event	Political Context	Key Language Decisions	Impact / Outcome
1947 (Independence)	Early State Language Policy	Nation building after partition	Urdu promoted as national language; English retained for administration and governance	Established dual system (Urdu symbolic, English functional)
1948–1949	Jinnah’s Language Policy and Early Resolutions	Centralized nation building	Urdu emphasized as national language; English continued in official use	Triggered Bengali resistance and linguistic tensions
1956 Constitution	First Constitutional Language Policy	Post-independence constitutional framework	Urdu declared national language; English to continue for 15 years	Not implemented; English remained dominant

1959 (Sharif Commission)	National Education Commission	Military rule (Ayub Khan)	Recommended Urdu for education; maintained bilingual approach (Urdu and English)	Reinforced symbolic Urdu, functional English
1962 Constitution	Revised Constitutional Framework	Centralized governance under Ayub Khan	Continued support for Urdu; English retained for administration	No structural change; English dominance persisted
1969 (Noor Khan Commission)	Education Policy Recommendations	Transition period (Ayub–Yahya)	Recommended Urdu replacement of English	Again not implemented
1971	Separation of East Pakistan	Bengali language movement	Failure to recognize Bengali as equal national language	Contributed to creation of Bangladesh
1973 Constitution (Article 251)	Major Constitutional Language Policy	Democratic government (Bhutto)	Urdu declared national language; English allowed for 15 years until replacement	Policy–practice gap; English remains dominant
1979 (National Language Authority)	Institutional Language Planning	Zia-ul-Haq era (Islamization)	Promotion of Urdu in official domains	Limited implementation; largely symbolic
1999–2008 (Musharraf Era)	Language and IT Policy Shift	Military rule and globalization	Strong promotion of English for IT, economy, and globalization	Reinforced English as economic/global language
2009 (National Education Policy)	Education Reform	Democratic government	English expanded as medium of instruction	Increased English dominance in education
2017 (National Education Policy)	Multilingual Policy Shift	Post-18th Amendment (provincial autonomy)	Urdu + regional languages at primary level	First formal recognition of regional languages (limited implementation)
2025 (AI Era)	Digital / Algorithmic Language Policy	Technological governance	AI systems primarily support English and Urdu; regional languages underrepresented	Emergence of algorithmic inequality

Table 1 analysis shows that the language policy in Pakistan has undergone changing periods throughout history but is characterized by continuity instead of change, especially in terms of the preservation of power and inequality. This saw the creation of a dual linguistic system since 1947, where Urdu was symbolically used as a sign of national identity, but English remained practically dominant in the administration and education systems and in other elite areas. This colonial heritage even in the light of constitutional attempts in 1956 and 1973 to substitute English is reflective of a policy-practice gap that is deeply rooted in elite interest and the worth of English as a lingual capital. Policies on education also institutionalized this difference by popularizing the ideology of Urdu and preserving the functional use of English, in higher education and in the process of globalization where English became associated with economic mobility. Despite the policy of 2017 recognizing the importance of multilingualism, its small scale resulted in the preservation of the old hierarchies. The emergence of AI during the modern stage is the beginning of the transition to more algorithmic forms of governance, whereby hierarchies in language are entrenched in the technological infrastructure. Nonetheless, instead of questioning inequality, AI restates and enhances it privileging English over regional languages. On the whole, the results demonstrate that the policy of language in Pakistan has always been functioning in the context of hierarchical power with its roots in the colonial past supported by institutional and technological resources.

Table 2 Constitutional Provisions and Language Policy in Pakistan

Constitution / Period	Key Article / Policy	Language Policy Decision	Intended Goal	Actual Outcome / Issues
1956 Constitution	Language provisions (early constitutional framework)	Urdu declared national language; plan to replace English gradually	Promote national unity	Not implemented; English continued as official language

			through Urdu	
1962 Constitution	Revised constitutional framework under Ayub Khan	Continued emphasis on Urdu as national language	Strengthen centralized national identity	No major change; English still dominant in administration
1973 Constitution (Article 251)	Article 251(1)	Urdu declared national language; English allowed for 15 years until replacement	Transition from colonial English to Urdu	Deadline not met; English remained dominant in government & education
Post-1973 Constitutional Implementation	Follow-up policies and institutions (e.g., National Language Authority 1979)	Repeated recommendations to implement Urdu as official language	Full Urdu for state functions	Weak implementation; policy–practice gap persists
Constitutional Language Structure (General)	Multi-level recognition (implicit structure)	Urdu as national language; English as official/administrative; regional languages as provincial	Balance unity with diversity	Created linguistic hierarchy (English, Urdu, regional languages)

The analysis of the constitutional stipulations in Pakistan has shown that language policy has always given a focus on the Urdu language as the national language; but this focus has been symbolic owing to a continued failure in implementation. Repeatedly, since the 1956 Constitution up to the 1973 Constitution (Article 251), it was sought to substitute English with Urdu to achieve national unity but this was never achieved in practice. Rather, the English language remained predominant in administration, education and the elite communication and this was a symptom of a long-standing policy-practice split conditioned by institutional reliance and socio-economic facts. Later efforts like the National Language Authority only served to solidify this trend as it was mostly ineffective and symbolic. Generally, the constitutional system displays a stratified language system whereby Urdu is symbolic, English has functional authority, and regional language is still marginalized, thus, re-creating a hierarchical system that is based on a colonial past. This shows that, constitutional language policy in Pakistan has not actually changed the issue of linguistic inequality but has in fact institutionalized and perpetuated it over time.

Table 3 AI Policy 25 and Language Related Provisions in Pakistan

Policy Area	Relevant Provision	Language Implication	Evidence from Document
Accessibility & Inclusion	Content dissemination in national and regional languages	Recognizes multilingual communication needs	“Content will be disseminated in national and regional languages to ensure broad accessibility”
Cultural Identity	AI should preserve Pakistan’s cultural identity and local narratives	Supports role of local languages in identity	Policy aims to “preserve Pakistan’s cultural identity... promote local narratives”
AI Education	Integration of AI into education system	Language of instruction not clearly defined risk of English dominance	AI curriculum integration emphasized, but no explicit multilingual strategy
Data Infrastructure	Creation of centralized datasets for AI training	Languages with more data (English) gain advantage	“Centralized high-quality datasets for training AI models”
AI Development	Promotion of indigenous AI solutions	Opportunity for local language inclusion	Focus on “indigenous AI solutions”
Ethical AI	Emphasis on fairness, inclusivity, and rights	Potential to address linguistic inequality (if implemented)	“Fairness, transparency, and accountability” in AI systems
Digital Governance	AI integrated into governance, education, services	Language access becomes tied to digital inclusion	AI to improve public service delivery
Global Alignment	Adoption of international AI standards	Risk of reinforcing English dominance globally	Alignment with global AI systems and standards

The policy analysis of AI in Pakistan demonstrates that although the framework recognizes the importance of multilingualism, cultural identity, and inclusiveness, it does it symbolically, as opposed to structurally. Accessibility and the encouragement of national and regional languages are indicative of linguistic diversity but since explicit implementation policies are not in place, especially in AI education and system design, it is highly likely that English will prevail. The focus on centralized data sets also contributes to inequality, with languages with more digital material (particularly English) having a technological edge, whereas local languages are underrepresented because of the lack of data. Despite the emphasis of indigenous AI development and ethical principles in the policy, it does not have clear mechanisms to promote linguistic equity. With the advent of AI in the world of governance, education and public services, the language is becoming a defining factor of digital inclusion and thus the hierarchies of the past are finding a new home in the technological systems. The results, as a whole, demonstrate a change to algorithmic governance, in which the language inequalities are encoded in the data and technology which reproduces and reinforces the dominance of English, and marginalizes the regional language.

Table 4 Policy–Practice Gap

Policy Claim	Actual Practice	Evidence	Implication
Urdu as official language (1973 Constitution)	English used in courts, bureaucracy	Urdu replacement never implemented (Mansoor, 2005)	Symbolic policy
Mother tongue education encouraged	English-medium preferred	Punjabi language Marginalization (Hussain et al.2020)	Social pressure overrides policy
Multilingualism recognized	Regional languages excluded in schools	Punjabi not included in curriculum (Khan et al., 2025)	Institutional marginalization

The examination shows that one of the key characteristics of language policy in Pakistan is that the disparity between policy assertions and practice has been a constant, indicating underlying structural imbalances, as opposed to failure to perform. Although Urdu is always advocated as the national language, English remains predominant in courts, administration and education, which means it is deeply rooted as the language of power and access to elite. This paradox is also further enhanced in education, where policies favor mother tongue education, but where socio-economic forces encourage families to use English as a medium of education as the route to mobility and opportunity. Multilingualism is recognized at policy but the fact that none of the regional languages like Punjabi are taught the official education underscores their institutional marginalization. In general, this policy-practice gap shows the dual system, where Urdu is symbolic, and English is functional, and thus, reproduces linguistic inequality and strengthens hierarchical power systems to the present digital and AI-driven age.

Table 5 AI-Mediated Language Inequality

Language	Dataset Availability	NLP/ASR Performance	AI Tool Support	Key Challenges	Evidence
English	Very high	Advanced	Full support	None	Dominates global AI systems (Cristaldi, 2025)
Urdu	Moderate	Developing	Partial	Limited datasets	Urdu ASR still resource-constrained (Sharif et al., 2024)
Punjabi	Low	Weak	Minimal	Script variation, lack of data	Lack of annotated datasets (Butt et al., 2025; Srivastava et al., 2024)

The analysis shows that unequal distribution of data and technologies inherently influences artificial intelligence systems, which creates a high level of linguistic inequalities. English prevails because it has vast datasets, is developed in NLP and can be used as a unifying tool in all AI tools, and it serves as the international language of power in both organizational and digital spheres. Urdu is in an intermediate position, half-inclusive and half-supportive, yet limited data and technological potential restrict the visibility to equality. Contrarily, Punjabi and other regional languages are subjected to extreme marginalization since there is low data availability, poor performance, and low institutional support, which causes the language to be virtually shut out of the AI systems. The patterns are mirrors of the existing linguistic hierarchies in Pakistan only that in the context of AI, they are entrenched in algorithms and data infrastructures, therefore, making the inequality much more systemic and less pronounced. Altogether, results reflect the change to algorithmic governance where language inequality is not minimized but is reorganized and enhanced as AI strengthens the position of the high-resource languages but excludes low-resource languages.

Table 6 Language, Power, and Ideology

Language	Ideological Position	Power Function	Social Outcome
English	Modernity, progress, globalization	Access to education, jobs, elite status	Dominance and privilege

Urdu	National identity, unity	Symbolic integration	Limited functional power
Regional Languages	Informality, backwardness	Cultural identity only	Marginalization

This analysis reveals that language in Pakistan is a system of organized power that is influenced by ideology and social hierarchy as opposed to being just a way of communication. The dominant position is held by English, which is linked to modernity, globalization, and opportunity and is a linguistic capital that opens the door to education, job, and elite status. Urdu is placed in the middle position as the symbol of national identity and unity that does not have the same functional power in the socio-economic areas, indicating a disconnect between the ideological propagation and the practical use. Regional languages are left at the bottom end, mostly stigmatized as informal and not subject to institutional, educational and technological spheres and marginalized. In general, this hierarchy shows that language, reproducing inequality, regulates access to resources and opportunities and this trend is further expanded into digital and AI-based systems, supporting the persistence of language power since colonial times to algorithmic control.

5. DISCUSSION

This study investigated the development of the language policy in Pakistan since 1947 to 2025, in terms of how power, ideology and technological systems contribute to the linguistic hierarchies. Based on the analysis of historical, constitutional, ideological, and AI-related tables, the findings indicate that although the language policy has evolved in the form at various times, the structure of the language policy has been incredibly similar. Since the early post-independence era, a two language system was introduced whereby Urdu was to be used as a national language and English was to continue to dominate the administrative and political sphere. This inherent contradiction evident in Table 1 has been evident throughout the political regimes and this means that language policy in Pakistan has undergone continuity and not change.

This historical review reveals that language policy has been very entrenched in political activities and power politics. Initial attempts to make Urdu a common national language, especially in the years 1948-1949 produced opposition and hostility, especially in East Pakistan. The inability to embrace linguistic diversity, as noted in the 1971 separation, can be used to show that language policy was more of an exclusionary, as opposed to an inclusionary, instrument. Later constitutional clauses as indicated in Table 2, made several efforts to institutionalize Urdu via official pronouncements especially in the 1956 and 1973 constitutions. Nevertheless, these stipulations were never enforced to the fullest and this solidifies a long-standing policy-practice gap. This disconnect is not an administrative malfunction but structural reliance on English as a language of power, government, and social mobility of elites.

The constitutional system also demonstrates a stratified linguistic system whereby Urdu is given a symbolic role, English is given a functional role and regional languages are marginalized. This is not a mere hierarchy but a hierarchy that is reproduced systematically using institutional practices and policies. Table 4 brings into the fore the way policy assertions like promotion of Urdu or mother tongue education is always contradicted by the realities on the ground which are in favor of English. The fact that English remains in use in courts, in bureaucracy and in education is evidence that policy is an ideological instrument and practice an expression of socio-economic realities and relations of power. This validates the argument that policy-practice gap is a problem not of implementation but of a structural aspect of language governance in Pakistan.

This hierarchy can also be explained by the ideological aspect of language policy, as shown in the language-power-ideology table. English is built as a language of modernity, globalization and progress, which makes it symbolically and materially highly valued. Although Urdu is linked with a sense of national identity, it does not have the same functional value, and local languages are usually viewed as informal or backward. Such ideological creations justify the unequal access to resources and opportunities and support the Bourdieu conceptualization of linguistic capital. Consequently, language has become one of the most important processes by which social stratification is recreated as mastery of English becomes a portal to education, jobs and advancement.

The major contribution of this work is that it carries on this analysis to the field of artificial intelligence. Table 5 results show that AI systems recreate the linguistic hierarchies that exist in real-world data in a data-driven manner. English reigns because it has a wide array of digital information and support in terms of technology whereas Urdu is in a semi-inclusive state and regional languages like Punjabi are mostly excluded. This trend is a reflection of the historical order in relation to policy and education, so the technological systems do not break the inequality, they only support it. The shortages in the availability of datasets, NLP, and AI support of regional languages, underscore the embedding of structural bias in digital infrastructures.

The AI policy analysis also indicates an essential paradox between the symbolic inclusion and the real-life exclusion. Policy frameworks focus on multilingual accessibility, cultural identity, and ethical AI, but do not provide specific ways of how to incorporate regional languages into the technological systems. This creates a type of algorithmic inequality, in which the representation of languages is not based on policy goals but on the data that is available. Language access is another determinant of digital inclusion, as AI gains more and more influence in governance, education, and the overall delivery of services on the population level. Thus, speakers of marginalized languages not only fail to be incorporated into institutional realms but also in the digital world.

Collectively, these results of all the tables indicate a definite change in the approach to language policy that was centered in states to a hybrid regime, in which power is exercised by both institutions and technological systems. Nevertheless, this change reflects a change in the way of government as opposed to the logic behind it. The English hegemony is maintained at all stages, including the colonial, post-independent, globalization and digital ones, whereas Urdu is symbolically important and the regional languages are still marginalized. This continuity underscores that the policy of language in Pakistan is being inherently influenced by the power relations throughout history, which are now being projected and enhanced with AI systems.

The results of the present study are mostly similar to those of the previous ones, still, they contribute to the current knowledge base by adding the element of artificial intelligence. Like previous works, the present study proves that language policy in Pakistan is highly influenced by colonialism, and English and Urdu continue to be dominant and symbolic languages, respectively (Shehryar et al., 2020; Mansoor, 2005). Marginalization of regional languages like Punjab and the role of language in perpetuating social inequality has also been noted in previous research (Hussain et al., 2020; Khan et al., 2025), which also agrees with the current study on the linguistic hierarchy and policy–practice discrepancies. Moreover, the critical discourse studies highlighted the impact of language ideologies to form the power relations between the English, Urdu, and regional languages (Hashmi et al., 2025), which is highly supported in this research.

Nonetheless, the present study is unique in that it goes beyond the institutional and historical frames to discuss the role of AI as a non-state language policy actor. Although past research has recognized digital issues and technological constraints (Butt et al., 2025), this work takes a step further to prove that AI is not only a mirror of linguistic inequalities but also a producer and even an amplifier of them due to the nature of algorithmic systems. This means that on the one hand, the results are in line with the existing literature on the topic of language, power, and inequality, on the other hand, the study is a new opportunity to view the period of transition between the colonial and institutional language policy and the algorithmic governance.

The results of this research have a strong correspondence with the combined theoretical construct of the Language Policy and Planning (LPP), Critical Theory, and Algorithmic Governance. In the view of LPP, especially the model by Spolsky (2004), the research affirms a definite gap between the management of language (official policies that propagate the Urdu language), language beliefs (association of Urdu as the national identity), and the language practices (dominance of English in education, administration, and information technology). This policy–practice gulf is a continuing factor that justifies the focus that LPP puts on the multi-faceted nature of language policy beyond official statements.

In critical theory approach, the results indicate that the ideological constructs and power relations have strong roots in language policy in Pakistan. English is being used as linguistic capital giving access to socio-economic mobility and strengthening of the elite dominance, and Urdu serves as symbolic and the regional languages are marginalized. This helps to substantiate the fact that language policies are not neutral and they represent political and economic interests reproducing the social inequality both on the institutional and discursive level as contended by Tollefson (1991).

Notably, the study expands these frameworks in that it aligns with the notion of algorithmic governance demonstrating that the language policy is no longer limited to the state institutions but tends to be influenced more by technological systems. The results show that AI is a non-state policy actor, with inclusion in language being based on the availability of data and technological infrastructure. It leads to the inequality of algorithms with the English language dominating, the partial representation of Urdu, and the exclusion of regional languages. The study therefore shows that although the mode of governance has changed to be more technological than institutional, the linguistic hierarchy that has been there has not changed.

To sum up, the combined discussion indicates that the language policy in Pakistan has failed to address the historical inequalities but has recapitulated them in various fields over the years. Algorithms governance is not a break with the past but reconfigures existing hierarchies in new technological forms. Language is still one of the key tools of power, dictating resource access, opportunities, and institutional and digital involvement. This highlights the importance of reconsidering the language policy critically at both institutional and new technological systems where language realities are increasingly being defined.

6. CONCLUSION

This study has discussed the history of language policy in Pakistan since 1947 to 2025 in terms of power, ideology and technological revolution. Based on historical, constitutional, ideological, and AI-based studies, the results indicate that the language policy in Pakistan has been subjected to major changes in its forms, but not in its structures. Since the early days of post-independence up to the modern times of AI, a continuum of linguistic hierarchy has been upheld, where English has been in a dominant role with Urdu as a symbolic identity indicator and regional languages at the structural periphery. The paper shows that the country of Pakistan was endowed with a colonial system of language, which was never essentially dismantled but rather replicated under the rule of various political regimes. Historical and constitutional overview indicates that whereas Urdu was constantly being advanced as the national language especially with constitutional provisions like Article 251, it was not put into practice. Rather, English maintained functional supremacy in the areas of administration, education and the economy. This policy–practice gap has not only been a failure of implementation, but also a structural reality of

its own, with interests of the elite, and socio-economic pressures as well as ideological constructions that equate modernity, progress and international mobility with English.

The results also indicate that language policy is a power mechanism that as a systematically constructed and reproduced inequality. The ideological positioning of the English language as a language of success, Urdu as a language of unity and regional languages as informal or marginal languages supports the hierarchical system of linguistic capital. This stratification is not only reflected in the policy of the institute, but also in the social life, i.e. the preference of English-medium education and exclusion of the regional languages of the realms of the formal language.

Consequently, language has been a major determinant of access to education, employment and social mobility. The main contribution of the work is that it expands the scope of the study of the policy of the language into the sphere of artificial intelligence. The results show that AI has become a new, non-state actor of language policy that conditions the visibility, access, and representation of language via the technological systems. Nevertheless, instead of changing the already existing inequalities AI recreates and intensifies the same. Languages that have a high number of digital resources, especially English, take over AI systems, and Urdu is partially involved and regional languages are mostly excluded because of less datasets and technology. This creates some type of algorithmic inequality, as linguistic hierarchies are engraved in data and digital infrastructures.

Collectively, the paper postulates that the policy of language in Pakistan has shifted to the colonial rule to institutional policy and, most recently, to the algorithmic rule. Nonetheless, this transformation is a change in the processes of regulation and not the alteration of the structural form of inequality. The fact that power still works via language, but now extends to technological systems, indicates that it has moved outside the state institutions. This results in the existence of linguistic inequality both in the physical and digital space, which reinforces larger trends of social exclusion.

This research shows that language policy in Pakistan does not exist as a singular issue of language, but is an interplay of history, power, ideology, and technology. Although the change in the operations of language policy as colonial legacy is changed to algorithmic governance is a major alteration in the functioning of language policy, it does not essentially change the framework of inequality. Rather, it prolongs and inserts this disparity into new technologies. To achieve a language policy that serves as a means of inclusion and not exclusion, language policy needs to transcend merely symbolic commitments and also tackle institutional as well as technological aspects of power. It is only within a critically informed, inclusive, and progressive perspective that Pakistan can guarantee the equitable linguistic representation and access in both, the physical and virtual worlds.

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