

Article

Kazakh–English Bilingualism in Kazakhstan: Public Attitudes and Language Practices

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Abstract: This study investigates the complex dynamics of Kazakh–English bilingualism, the influence of technology on language promotion, and regional variations in language attitudes across Kazakhstan. Using a structured online survey, data were collected from 1000 respondents representing all regions of the country, providing insights into language competence, daily communication preferences, attitudes toward bilingualism, and the role of technology in language development. Quantitative analysis, including descriptive statistics, cross-tabulation, and Chi-square tests, was conducted to identify significant trends and patterns. The findings highlight Kazakhstan’s evolving language environment, where bilingualism and multilingualism thrive alongside initiatives to strengthen Kazakh language use through technological advancements. This study underscores the need for balanced language policies that embrace linguistic diversity while fostering the development of the national language in an increasingly globalized world.

Keywords: language policy; bilingualism; multilingualism; language attitudes; language promotion; language prestige; technological advancements



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1. Introduction

In multilingual societies, language policy plays a particularly vital role in balancing linguistic diversity while promoting national unity (Ferrer & Lin, 2024). In Kazakhstan, a linguistically diverse nation, the interplay of Kazakh, Russian, and English exemplifies the challenges and opportunities of multilingualism (Koptleuova et al., 2023). Understanding how these languages function in the digital era, how public attitudes shape language use, and how technology influences language promotion is crucial for developing effective language policies and fostering linguistic harmony.

This study applies Spolsky’s (2004) model of language policy, which consists of three interconnected components: language practices, language ideology, and language management (Spolsky, 2004). Language practices refer to how people actually use languages in various settings, including digital environments. This study examines how Kazakh, Russian, and English function across different domains, particularly in online spaces. Language ideology encompasses societal beliefs and attitudes toward languages, including the perception of Kazakh–English bilingualism and the role of English in Kazakhstan’s global positioning. Language management involves deliberate efforts by the government and institutions to regulate and promote language use, particularly through digital initiatives aimed at integrating Kazakh into modern technologies.

At the national level, Spolsky (2009) further identifies four coexisting forces that shape language policy: national identity, the global role of English, the country's sociolinguistic landscape, and linguistic rights (Spolsky, 2009).

Language policy is often shaped by the desire to maintain and strengthen national identity. In Kazakhstan, the promotion of Kazakh as the state language aligns with broader nation-building efforts following independence, reinforcing its role in cultural and political discourse (Reagan, 2019).

English has gained prominence as the language of international communication, business, and technology. In Kazakhstan, state initiatives, such as the "Trinity of Languages" policy, emphasize the importance of Kazakh, Russian, and English, reflecting a strategic vision for global integration. The rising demand for English proficiency in education and employment further illustrates its expanding role (Ahn & Smagulova, 2022). At the same time, Russian continues to play a significant role as an additional language due to historical and sociopolitical factors. Inherited from the Soviet era, Russian has long served as the dominant language of interethnic communication, administration, and education. As a result, it retains wide functional use and remains one of the key mediums in public life, particularly in urban and multiethnic regions (Abasilov & Kapalbek, 2024).

Third, Kazakhstan's sociolinguistic reality is defined by its diverse linguistic landscape, where Kazakh, Russian, and English coexist alongside numerous minority languages that are primarily spoken within family and community contexts and are typically underrepresented in digital and institutional domains (Zharkynbekova et al., 2025). Finally, linguistic rights play a crucial role, as policies must balance the promotion of Kazakh with the need to ensure access to Russian and English for broader communication and economic mobility (Abasilov & Kapalbek, 2024).

Complementing this, research on language policy and digital environments (Chen et al., 2021; Wei, 2022; Zhang & Zou, 2022; Navarro & Tudge, 2023) examines how technological advancements shape language visibility and accessibility (Chen et al., 2021; Wei, 2022; Zhang & Zou, 2022; Navarro & Tudge, 2023). In Kazakhstan, the incorporation of Kazakh into AI-driven translation tools, speech recognition software, and digital media demonstrates ongoing language management efforts to strengthen its presence in online spaces. These technological innovations not only enhance language use but also shape linguistic practices, ultimately influencing public perceptions of Kazakh–English bilingualism.

To better understand the complex interplay between language use, technology, and public attitudes in Kazakhstan's multilingual landscape, this study addresses the following research questions and hypotheses:

- RQ1: How is language choice distributed across different domains of communication in Kazakhstan?

H1: *Language choice in Kazakhstan is domain-specific and shaped by regional and sociocultural factors, with urban areas exhibiting higher multilingualism and English usage.*

- RQ2: What are public perceptions of Kazakh–English bilingualism, and how do these attitudes influence language policy in Kazakhstan?

H2: *Public perceptions of Kazakh–English bilingualism vary by region, with more positive attitudes in urban centers encouraging supportive policies for bilingualism, while skepticism in other regions leads to calls for stronger measures to preserve the Kazakh language.*

- RQ3: What role do technological advancements and digital content play in the expansion of Kazakh language use?

H3: *The integration of the Kazakh language into modern technologies, including AI-driven platforms, voice assistants, and digital media, significantly contributes to enhancing its societal prestige and broadens its functional use in various domains.*

This article is structured as follows: the introduction provides an overview of the research, offering a brief background on the issue under investigation. Section 2 presents a concise overview of Kazakhstan's demographic and geographic context, highlighting the country's multiethnic makeup and key urban centers. The main principles of language policies in Kazakhstan are discussed in Sections 3 and 4. Section 5 outlines the research methodology, detailing the approach used to address the research questions. Section 6 is dedicated to presenting the research results, addressing all three research questions. Section 7 discusses the research findings. Finally, Section 8 offers conclusions drawn from the research.

2. Background Information

The Republic of Kazakhstan, a recognized democratic state, spans parts of Eastern Europe and predominantly Central Asia. It shares borders with Russia, China, Kyrgyzstan, Uzbekistan, Turkmenistan, and the Caspian Sea to the west ([Kazakhstan, n.d.-b](#)). Kazakhstan is a multiethnic nation with a population exceeding 20 million ([Kazakhstan, n.d.-c](#)). The indigenous Kazakhs form the majority, making up about 71% of the population as of 2024, while ethnic Russians constitute roughly 15% ([Agency of Strategic Planning and Reforms of the Republic of Kazakhstan National Bureau of Statistics, 2024](#)). Together, these groups represent the two largest ethnic communities in the country, which is also home to a diverse mix of other ethnicities, including Ukrainians, Uzbeks, Germans, Tatars, Chechens, Ingush, Uyghurs, Koreans, and Turks.

Administratively, Kazakhstan is divided into 17 regions, each contributing to the country's cultural and economic diversity. The largest city, Almaty, serves as a vibrant cultural and economic hub, renowned for its historical significance and dynamic urban life. Meanwhile, Astana, the capital, symbolizes the nation's modern development and serves as its political and administrative center. Shymkent, another major city, plays a significant role in the southern part of the country, contributing to both the region's agricultural and industrial sectors ([Kazakhstan, n.d.-a](#)).

3. Language Policy and Planning in Kazakhstan

According to the Constitution (Article 7), Kazakh is the sole state language of Kazakhstan, while Russian holds official status both legally and practically ([Constitution of the Republic of Kazakhstan, 1995](#)). The 1995 Constitution elevated Russian from a language of interethnic communication, as outlined in the 1989 Language Law of the Kazakh SSR and the 1993 Constitution, to an official language ([Smagulova, 1996](#)). Consequently, all legal documents, official notifications, and forms are issued in both Kazakh and Russian, reflecting the country's multilingual framework. Recognizing Kazakhstan's multiethnic composition, the 1997 Language Law also ensures the preservation and development of the languages of all ethnic groups residing in the country ([Law On Languages in the Republic of Kazakhstan, 1997](#)).

In practice, both Kazakh and Russian maintain broad societal usage. According to the 2021 census, 80.1% of the population reported proficiency in Kazakh, while 83.7% indicated proficiency in Russian ([Bureau of National Statistics. Agency for Strategic Planning and Reforms of the Republic of Kazakhstan, n.d.](#)). These figures demonstrate the widespread bilingualism that characterizes Kazakhstan's linguistic environment and underscores the practical coexistence of the two languages.

In recent decades, there has been a growing public demand for foreign language proficiency, particularly English, which has gained prestige and transitioned from a personal preference to a necessity for those involved in scientific, technological, and professional development (Zharkynbekova & Aimoldina, 2023). Modern language policy, guided by the State Program for the Development and Functioning of Languages for 2020–2025, prioritizes the modernization of the Kazakh language through the adoption of the Latin alphabet (Government of the Republic of Kazakhstan, 2019). This reform aims to enhance Kazakhstan’s global competitiveness and accelerate integration into international scientific, educational, technological, and communication networks (Batyrbekkyzy et al., 2018).

Modernizing Kazakh is key to strengthening its role in communication, culture, and national identity. English plays a complementary role in Kazakhstan’s language policy, exemplified by the “Trinity of Languages” initiative launched in 2007. This initiative positions English as a critical tool for global integration and economic collaboration while fostering connections with the international community (Nazarbayev, 2007).

The successful implementation of this policy envisions Kazakh as a unifying force for national cohesion, preserving the cultural heritage of all ethnic groups (Karabassova, 2020). Within this triad, Russian facilitates intercultural communication and maintains ties with post-Soviet states, while English strengthens Kazakhstan’s global presence (Tsay & Pagnueva, 2011). Together, these languages form the foundation of a harmonious, progressive, and inclusive linguistic landscape.

4. Kazakh–English Bilingualism: Policies and Practices

Kazakhstan, as part of its 2020–2025 State Program for Language Policy Implementation, has prioritized enhancing its linguistic capital. A significant aspect of this initiative involves fostering Kazakh–English bilingualism within the country’s communicative and linguistic space. Efforts in this direction include improving the methodology and resources for teaching English, enhancing teacher qualifications, developing bilingual phrasebooks, introducing comparative grammar of Kazakh and English into curricula, training specialists in simultaneous translation, and translating literary works. These measures aim to facilitate the practical use of bilingualism in daily life and strengthen international and business communication (Government of the Republic of Kazakhstan, 2019).

English plays a vital role in education, science, technology, IT, and international relations in Kazakhstan. Proficiency in English enables access to education aligned with international standards, fosters collaboration with the global scientific community, and supports the integration of advanced technologies and innovations. It also serves as a key tool for enhancing diplomatic, economic, and cultural ties.

Kazakhstan has demonstrated its commitment to promoting English through various educational initiatives. For instance, the Haileybury Almaty and Haileybury Astana schools, established in partnership with British educational institutions, offer rigorous curricula such as A Levels and the International Baccalaureate (IB), preparing students for admission to prestigious universities worldwide. Similarly, the Miras International School, accredited by globally recognized organizations, integrates bilingual education by incorporating Kazakh and English language programs (British International Haileybury Schools, n.d.; International Miras School, n.d.).

Higher education institutions in Kazakhstan also reflect this trend. In 2023, a branch of the UK’s Heriot-Watt University opened in the country, focusing on training specialists in engineering and IT to meet regional economic demands. In 2024, Coventry University also launched its branch in Kazakhstan, further enhancing access to high-quality, internationally recognized education and contributing to the development of professional and

entrepreneurial skills ([Heriot-Watt University's Aktobe Branch, n.d.](#); [Coventry University's Kazakhstan Branch, n.d.](#)).

In parallel, the development of Kazakh–English bilingualism has significantly advanced in the academic and digital spheres. A notable example is the Oxford Qazaq Dictionary, which integrates the Kazakh language into the Oxford Global Languages platform, enhancing its visibility in the global linguistic community. This dictionary includes over 60,000 words and covers fields such as culture, IT, medicine, and finance, thereby supporting the codification and standardization of Kazakh in the digital age ([Presentation of the Oxford Qazaq Dictionary, 2023](#)).

Additionally, the “100 New Textbooks in the Kazakh Language” project, launched under the Rukhani Zhangyru program in 2017, has translated essential academic texts across various disciplines into Kazakh, further supporting the development of bilingualism and integrating Kazakh into the global academic context ([Ministry of Culture and Sports of the Republic of Kazakhstan, 2017](#)).

Thus, fostering Kazakh–English bilingualism is a strategic priority for Kazakhstan. These efforts contribute to strengthening the country's global scientific and academic ties, promoting the Kazakh language internationally, and ensuring its sustainability in a rapidly evolving linguistic and technological landscape.

5. Methodology

5.1. Data Collection

A structured online survey was employed as the main data collection tool to guarantee reliability and adaptability in gathering data from a diverse population. The survey was conducted from January 2024 to April 2024 using SurveyMonkey, an online platform selected for its user-friendly interface, efficient data handling, and secure storage features. The platform ensured respondent anonymity and adherence to ethical research standards by refraining from collecting personal information, thereby safeguarding data confidentiality and fostering trust among respondents.

This study employed targeted outreach through social media to recruit participants from all regions of Kazakhstan. The target population included individuals aged 18 and older, with participants ranging in age from 18 to 63. Survey links were disseminated via WhatsApp, Telegram, and social media groups such as *Qazaqbubble* and *Qazaqgrammar*, supplemented by targeted advertising. The targeting settings were adjusted to ensure representation from all regions, capturing a diverse range of linguistic, educational, and cultural backgrounds. This approach enabled a comparative analysis of linguistic attitudes and preferences across different regions. In total, the survey collected responses from 1000 participants, providing a robust dataset for analysis.

5.2. Participants

To provide a comprehensive understanding of this study's sample composition, [Table 1](#) presents key demographic characteristics, including the geographical distribution, age groups, gender, ethnic composition, social status, and educational background. This breakdown ensures a detailed analysis of linguistic preferences and attitudes across diverse population segments.

Table 1. Demographic characteristics of survey participants.

Category	Number	%
Geographical Distribution		
Northern Kazakhstan	138	13.8
Southern Kazakhstan	254	25.4
Western Kazakhstan	164	16.4
Eastern Kazakhstan	55	5.5
Central Kazakhstan	79	7.9
Almaty	104	10.4
Astana	128	12.8
Shymkent	78	7.8
Age group		
18–25	350	35
26–35	358	35.8
36–45	192	19.2
46–60	91	9.1
60–63	9	0.9
Gender		
Male	312	31.2
Female	688	68.8
Ethnic composition		
Kazakh	914	91.4
Russian	61	6.1
Other minorities	25	2.5
Social status		
Students	219	21.9
Private Sector Employees	326	32.6
Public Sector Employees	133	13.3
Retirees	11	1.1
Unemployed	123	13.2
Homemakers	118	11.8
Entrepreneurs	61	6.1
Field of Education		
Education	249	24.9
Humanities	116	11.6
Service Sector	107	10.7
Medicine and Healthcare	107	10.7
Manufacturing and Industry	99	9.9
Finance and Business	88	8.8
Information Technology	68	6.8
Science and Research	49	4.9
Arts	42	4.2
Law	22	2.2
Tourism	1	0.1
Sport	1	0.1
No formal education	51	5.1

5.3. Data Analysis

Quantitative analysis was selected for this study due to its capacity to ensure objectivity and precision, thereby enhancing the validity and reliability of the conclusions. The research employed three key statistical techniques: descriptive statistics, cross-tabulation, and the Chi-square test.

Descriptive statistics were used to summarize and organize the survey data, providing an overall picture of the respondents' demographic characteristics, linguistic preferences, and attitude.

The cross-tabulation method was utilized to explore and elucidate relationships between categorical variables. Specifically, it provided a detailed visualization of survey responses across different regions, highlighting regional variations in linguistic preferences and attitudes.

The Chi-square test assessed the independence or association between categorical variables. It was chosen because it is particularly well suited for categorical data analysis, allowing for the examination of frequency distributions without requiring assumptions about the normality or homogeneity of variance. By comparing observed and expected frequencies, it identified statistically significant relationships between language use patterns and regional factors. The test results were evaluated using the Chi-square statistic, degrees of freedom, and corresponding p -values, with a p -value less than 0.05 indicating a statistically significant association. In addition, standardized residuals were calculated to determine the strength and direction of deviations from expected values in the cross-tabulation. Residuals greater than ± 2 were interpreted as statistically significant deviations, offering further insight into which regions contributed most to the overall Chi-square statistic.

6. Results

This section presents the findings of this study, addressing three core areas: language preferences across various settings, public attitudes towards Kazakh–English bilingualism, and the integration of the Kazakh language into modern technologies.

6.1. Language Preferences Across Various Settings

In exploring patterns of language use across different domains of communication in Kazakhstan, this section engages with the first research question (RQ1) concerning the distribution of language choices in everyday settings. It examines the hypothesis (H1) that such choices are domain-specific and influenced by regional and sociocultural contexts, with a notable tendency toward greater multilingualism and English usage in urban environments.

According to the survey results illustrated in Figure 1, the largest group of respondents (41.1%) reported proficiency in both Kazakh and Russian. This highlights the widespread prevalence of bilingualism in Kazakhstan, where these two languages play significant roles in daily life and professional settings. The second largest group (29.7%) indicated proficiency in Kazakh only, underscoring its importance as the state language and primary means of communication in certain regions and communities.

A notable portion of respondents (18%) reported proficiency in three languages, including English, reflecting the growing significance of English in the education system and labor market. Russian-only speakers comprised 5.5% of the respondents, which may point to the presence of Russian-speaking communities and the influence of Russian-language media.

A small group of respondents (3.4%) reported fluency in more than three languages, a figure that warrants particular attention as it demonstrates a high level of polylingualism among certain segments of the population. Additionally, 1.2% of respondents reported speaking Kazakh, Russian, and other additional languages. This group may represent individuals with diverse linguistic skills acquired through migration, international exposure, educational opportunities, or cultural diversity (see Figure 1).

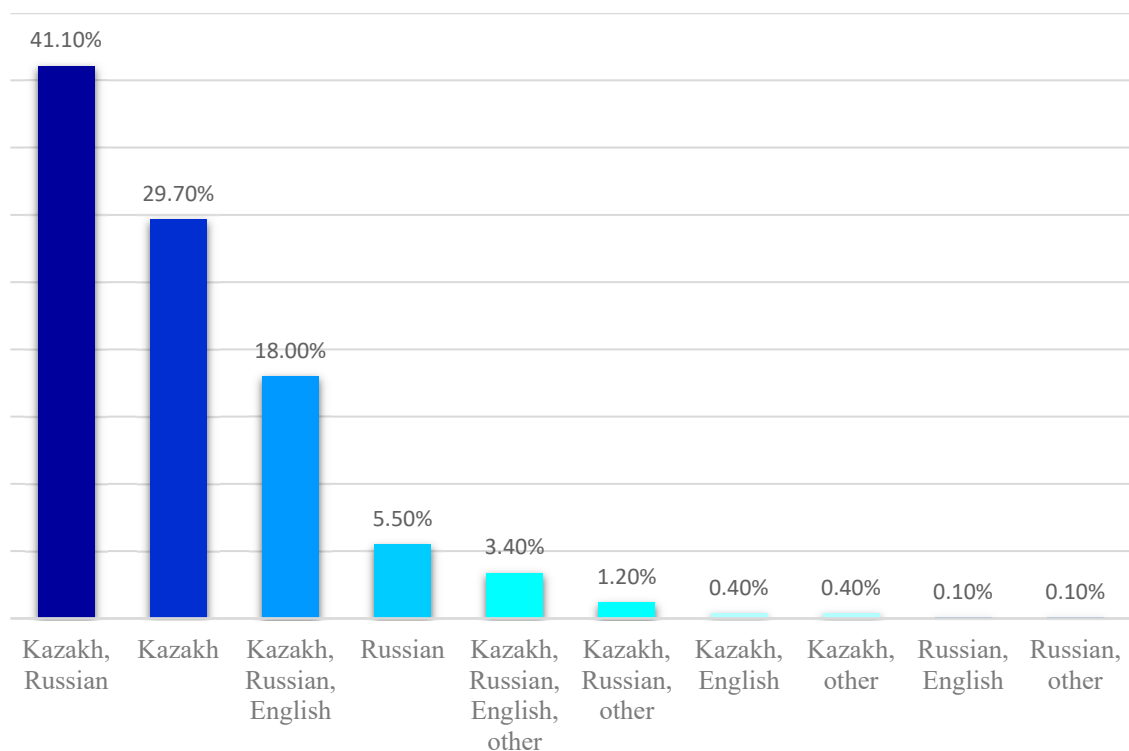


Figure 1. Language competence of respondents.

The results of the question, “Which language do you most frequently use in daily communication?” are presented in Table 2. The collected data reveal notable trends in language use across various aspects of daily life. Notably, the Kazakh language stands out as the dominant choice in family and educational settings, emphasizing its significance in preserving cultural and traditional values.

Table 2. Language use in daily communication.

Languages	Kaz	Rus	Eng	Kaz, Rus	Kaz, Eng	Rus, Eng	Kaz, Rus, Eng
Education, %	51.3	15.1	1.8	18.4	2.1	1.4	9.9
At work, %	42.3	19.2	1.4	27.9	2.1	2.8	4.3
At home, %	66.5	12.9	0.5	19.2	0.3	0.1	0.5
With friends, %	54.4	12.5	0.4	29.5	0.8	0.3	2.1
In government institutions, %	49.3	21.4	0.2	27.4	0.3	0.3	1.1
In public places, %	44.4	21.2	0.7	31.7	0.3	0.3	1.4
When using the internet and social media, %	32.9	25.4	1.2	29.3	2.5	0.9	7.8
When watching television, %	44.7	15.7	1.7	34.3	0.9	0.5	2.2
When reading fiction, %	49.5	25.9	1.8	17.1	1.2	0.4	4.1
When reading scientific literature, %	34.9	38.8	3.3	14.2	2.0	2.2	4.6
When conducting banking operations, %	31.2	41.5	1.1	23.3	0.3	0.4	2.2

In family contexts, 66.5% of respondents reported preferring to communicate in Kazakh, highlighting its role as a key element of cultural identity. However, the data also show that Russian (12.9%) and the bilingual usage of both Kazakh and Russian (29.5%) are present within family interactions, reflecting a high level of bilingualism in Kazakhstan.

At the workplace, Kazakh remains predominant (42.3%), though a significant portion of respondents use Russian (19.2%) and both languages (27.9%). This reflects the importance of flexibility and adaptability in communication depending on specific situations and interactions with colleagues.

A similar pattern is observed in government institutions, where 49.3% of respondents prefer Kazakh, 21.4% use Russian, and 27.4% report using both languages. This highlights the critical role of bilingualism in official interactions.

In the digital realm, including internet usage and social media, Kazakh holds a notable share (32.9%), though Russian is also widely used (25.4%). Additionally, 29.3% of respondents use both languages, while 7.8% prefer a combination of Kazakh, Russian, and English. This demonstrates the diversity of linguistic preferences in the digital space and the significance of multilingualism for engaging in online discussions.

When watching television, 44.7% of respondents choose Kazakh, indicating its popularity among viewers. Meanwhile, 15.7% prefer Russian, and 34.3% use both languages.

In reading fiction, Kazakh dominates (49.5%), followed by Russian (25.9%), and dual-language usage (17.1%). For academic literature, the use of Russian (38.8%) surpasses Kazakh (34.9%), with 14.2% utilizing both languages. This suggests the historical dominance of Russian in academia while also highlighting the growing importance of Kazakh. Additionally, 4.6% of respondents reported using Kazakh, Russian, and English together, illustrating the advantages of multilingualism in accessing diverse scientific knowledge. Multilingual proficiency facilitates a broader comprehension and integration of information from various sources, thereby contributing to the advancement of science and education.

In the financial sector, including banking operations, Russian is most prevalent (41.5%), with Kazakh used by 31.2% and both languages by 23.3%. This may be attributed to the historical use of Russian in financial institutions (see Table 1).

Overall, the analysis demonstrates that Kazakh plays a significant role in family, education, and government contexts, while Russian is more prominent in workplace and financial settings. Despite Russian's dominance in academic literature, Kazakh is increasingly gaining significance. The high level of bilingualism, where both languages are used depending on context and necessity, underscores the cultural and social richness of Kazakhstani society, as well as its capacity for effective communication across diverse domains.

Figure 2 provides data on the languages installed on respondents' mobile phones. According to the survey results, 27.9% of respondents selected Kazakh as their preferred language for mobile device settings. This figure highlights the use of Kazakh in the digital space, particularly on mobile platforms. The growing interest in and popularity of Kazakh among users underscores the importance of the state language and reflects the increasing availability of content and interfaces in Kazakh.

Additionally, the majority of respondents (62.8%) selected Russian as their preferred language for mobile device settings. This highlights the continued significance of Russian in Kazakhstan, where it remains a widely used language. Factors such as the abundance of content in Russian, user familiarity with the language, and extensive technical support likely contribute to its predominance on mobile devices.

English was chosen by 9.3% of respondents for their mobile phone language settings. This reflects the international importance of English and its leading role in technology and the internet. Users who select English often do so to access global content and enhance their ability to use new technologies.

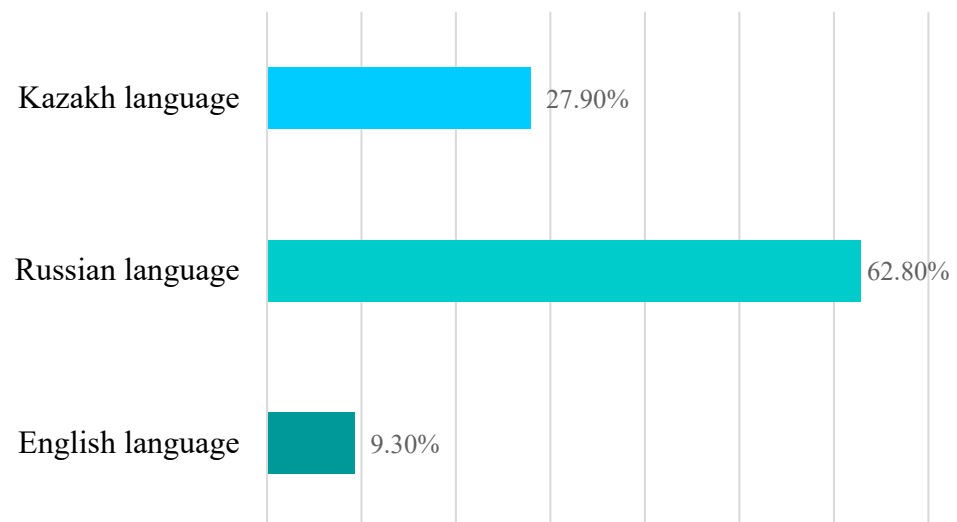


Figure 2. Languages set on respondents' mobile phones.

Overall, these findings suggest that language settings are influenced by user needs and the availability of linguistic options. While Russian remains widely utilized, Kazakh also commands a notable share, signaling positive developments in the integration of the state language into the digital sphere. English, on the other hand, is selected primarily for international communication and access to global information. This analysis indicates that language preferences are shaped not only by cultural and national factors but also by practical needs and accessibility.

When analyzing the regional diversity of language settings, several notable patterns emerge. English is used more frequently in Astana (standardized residual = 2.1), reflecting the city's international profile and strong global connectivity. In contrast, the Kazakh language demonstrates a clear predominance in south Kazakhstan (2.2) and Shymkent (1.6), suggesting a stronger emphasis on the state language in these regions. Meanwhile, Russian is more frequently selected by participants from north Kazakhstan (1.4), indicating the enduring influence of Russian in the northern part of the country.

These findings, summarized in Table 3, were derived from standardized residuals calculated as part of the Chi-square analysis. Standardized residuals measure the extent to which observed values deviate from expected frequencies. Positive residuals that are higher, particularly those greater than two, are considered statistically significant, highlighting the regions where the language preference diverges most substantially from the expected distribution.

Table 3. Regional differences in language settings on mobile phones.

Regions of Kazakhstan	Kazakh Language	Russian Language	English Language
East Kazakhstan	−0.9	0.9	−0.8
West Kazakhstan	0.7	−0.2	−1.3
Central Kazakhstan	−0.9	0.6	0.6
North Kazakhstan	−1.6	1.4	−0.1
South Kazakhstan	2.2	−1	−2.8
Astana	−2.4	0.5	2.1
Almaty	0.2	−0.5	1
Shymkent	1.6	−1.2	−0.6

A statistical analysis using the Chi-square (χ^2) test reveals an χ^2 value of 61.739 with 14 degrees of freedom and a significance level of 0.001. Since the significance level is below the threshold of 0.05, it can be concluded that the differences in the language settings installed on mobile phones among respondents from various regions of Kazakhstan are statistically significant.

6.2. Public Attitudes Towards Kazakh–English Bilingualism

In examining societal perceptions of bilingualism, this section addresses the second research question (RQ2) regarding public attitudes toward Kazakh–English bilingualism and their impact on language policy. It explores the hypothesis (H2) that regional differences shape these attitudes, with urban areas displaying more favorable views that support bilingual policy initiatives, while other regions express concerns that strengthen efforts to uphold the dominant role of the Kazakh language.

Respondents were asked to evaluate the significance of developing Kazakh–English bilingualism in Kazakhstan. As shown in Figure 3, the results were as follows: 34.1% of respondents consider bilingualism critically important for enhancing international communication and integrating Kazakhstan into the global community. This perspective underscores the necessity of improving the country's global competitiveness and visibility. A total of 17.4% believe that the establishment of Kazakh–English bilingualism poses no threat to the further development of the Kazakh language. They view bilingualism as an opportunity to expand and enrich the use of Kazakh. Additionally, 15.9% suggest that bilingualism will facilitate the integration of the Kazakh language into academic and scientific domains. Initiatives such as the Oxford Qazaq Dictionary and the translation of globally recognized works into Kazakh as part of the Rukhani Zhangyru program play a crucial role here. A total of 10.9% emphasize bilingualism as a vital step for preserving national identity while supporting youth education and professional development; 4.2% consider bilingualism unimportant for national development and education, reflecting skepticism about its broader impact. Furthermore, 7.9% were unsure, indicating a lack of a clear opinion or awareness about the importance of bilingualism.

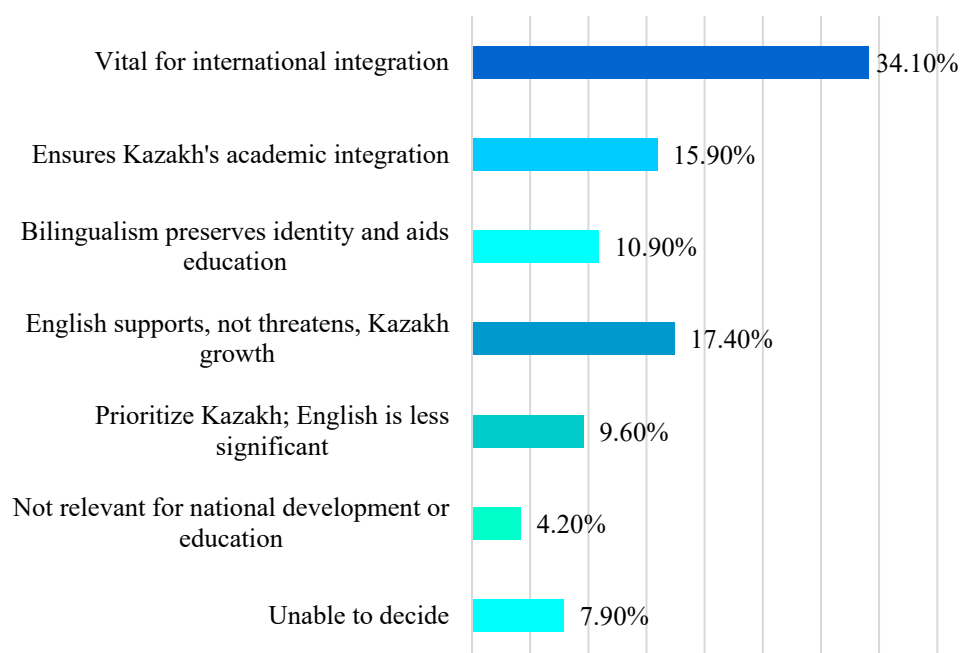


Figure 3. Respondents' evaluation of the significance of Kazakh–English bilingualism in Kazakhstan.

Further questions addressed attitudes toward English language promotion policies. A significant majority (89.2%) support the promotion of English through education, emphasizing its role in improving teaching quality and fostering competitiveness on an international scale. Over half of respondents (55.1%) agree that supporting English strengthens the position of Kazakh, suggesting a complementary relationship between the languages. A majority (56.3%) believe that advancing English does not threaten the future of Kazakh language and culture, reflecting confidence in their coexistence and mutual development. Over half (51.8%) also disagree with the statement that the popularity of English reduces interest in Kazakh, indicating a strong attachment to the intrinsic value of Kazakh culture and language. However, 29.6% express concern about the diminishing interest in Kazakh, highlighting the need for strengthened language promotion efforts.

Regional differences in attitudes were analyzed, as shown in Figure 4. The analysis of respondents' agreement with various statements about the English language across different regions of Kazakhstan reveals several statistically meaningful trends, as identified through standardized residuals.

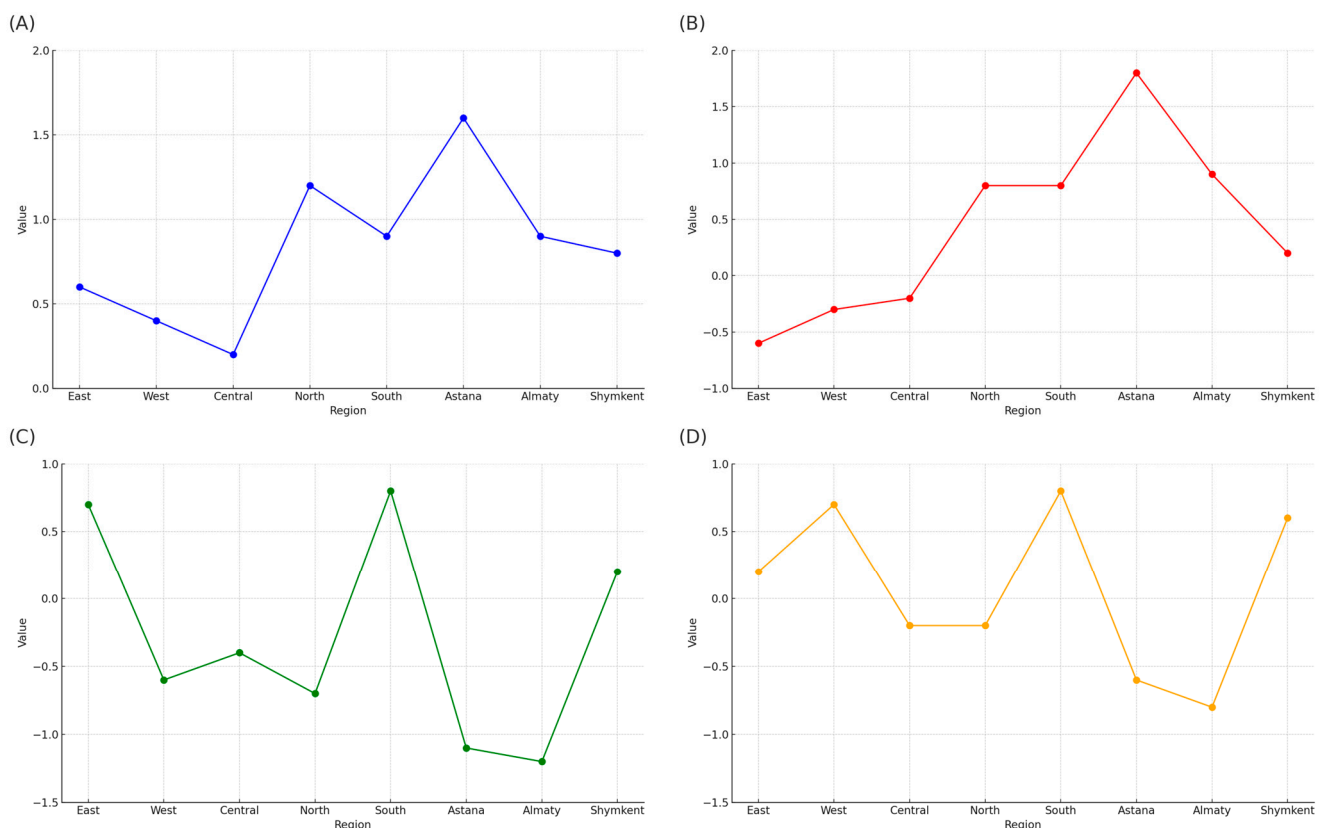


Figure 4. Regional analysis of agreement with statements on the role of English. (A) I support the promotion of the English language through education. (B) Supporting the English language contributes to strengthening the positions of the Kazakh language. (C) Promoting the English language poses a threat to the future of the Kazakh language and culture. (D) The popularity of the English language reduces interest in the Kazakh language.

The strongest positive attitude toward promoting English through education policies is observed in Astana (standardized residual = 1.6), as illustrated in Figure 4A, highlighting this region's particularly high level of support for English language integration in education.

Moreover, Figure 4B shows that Astana also demonstrates strong support for the idea that promoting English strengthens the position of Kazakh (standardized residual = 1.8). This suggests a perception of synergy rather than competition between the two languages.

and reinforces the notion of the complementary development of English and Kazakh in the capital.

As indicated in Figure 4C, a clear disagreement with the statement that promoting English threatens the Kazakh language and culture is recorded in Almaty and Astana (standardized residuals = -1.2 and -1.1 , respectively). This trend indicates that respondents in these regions largely reject the idea that English poses a cultural or linguistic threat.

Finally, Figure 4D presents regional opinions on whether the growing popularity of English diminishes interest in the Kazakh language. In the western and southern regions, there is more concern that English may be drawing attention away from Kazakh, reflecting apprehensions about a possible language shift. In contrast, respondents from Astana and Almaty are more likely to disagree with this view, indicating a stronger belief that English can gain popularity without negatively affecting interest in the Kazakh language.

Table 4 presents the results of a Chi-square analysis on attitudes toward English language promotion in Kazakhstan. All statements show statistically significant results ($p < 0.05$), indicating strong support for promoting English in education and its perceived positive effect on Kazakh.

Table 4. Chi-square analysis of statements on English and Kazakh language dynamics.

Statement	Chi-Square (χ^2)	Degrees of Freedom (df)	Significance Level (p)
I support the policy of promoting English through education	54,181	28	$0.002 < 0.05$
Supporting English contributes to strengthening the position of Kazakh	62,947	28	$0.001 < 0.05$
Promoting English poses a threat to the future of Kazakh language and culture	62,294	28	$0.002 < 0.05$
The popularity of English reduces interest in the Kazakh language	90,009	28	$0.001 < 0.05$

Overall, the findings reveal clear regional distinctions in public attitudes toward Kazakh–English bilingualism. Urban centers, such as Astana and Almaty, demonstrate the strongest support for bilingualism, viewing English not as a threat but as a resource that complements and enhances the status of the Kazakh language. In these cities, English is largely associated with international competitiveness, access to global knowledge, and academic advancement, with minimal concern expressed about its potential cultural or linguistic impact. By contrast, respondents from the western and southern regions express greater apprehension, often perceiving the promotion of English as a possible threat to the Kazakh language and national identity. This underscores the need for regionally sensitive language policies that reinforce the centrality of Kazakh while supporting English acquisition.

6.3. Kazakh Language and Its Integration in Modern Technologies

Focusing on the role of digital advancement, this section engages with the third research question (RQ3) concerning the influence of technological developments on the use of the Kazakh language. It examines the hypothesis (H3) that the integration of Kazakh into contemporary technologies—including AI tools, voice assistants, and digital media—elevates its social prestige and broadens its functional presence across various communicative and informational spheres.

The English language plays a pivotal role in the field of new technologies. This prominence is largely due to the fact that many programming languages and technical doc-

umentation are written in English. However, the Kazakh language is also making notable strides in the digital age, driven by advancements in technology and the proliferation of digital tools. Through the development of digital content, educational platforms, mobile applications, and software, the use of Kazakh is expanding, strengthening its societal relevance and role.

An analysis of the survey results on the role of the Kazakh language in various technological fields highlights several key points: the majority of respondents (36.4%) identified media and entertainment platforms as a domain where the Kazakh language plays a significant role. This demonstrates a commitment to preserving and promoting Kazakh culture through modern media formats.

Approximately 21.3% of respondents emphasized the importance of Kazakh in educational technologies and learning platforms. This reflects the aspiration to access educational resources in the native language.

A notable proportion of respondents (13.9%) recognized the significance of integrating the Kazakh language into artificial intelligence and voice assistant contexts. This indicates a growing interest in developing voice interfaces, assistants, and other AI solutions that can operate in Kazakh, enabling a more convenient and effective interaction with technology. Integrating Kazakh into AI can positively impact various fields, including education, healthcare, business, and public administration, by broadening access to information and services for Kazakh-speaking audiences.

While fewer respondents highlighted machine translation technologies (9.3%) and digital government platforms (6.7%), these areas were still deemed important.

Additionally, 12.4% of respondents emphasized the importance of the Kazakh language across all the mentioned fields. This underlines the necessity for comprehensive efforts to integrate the Kazakh language into the modern technological landscape (see Figure 5 for a detailed visual representation of these findings).

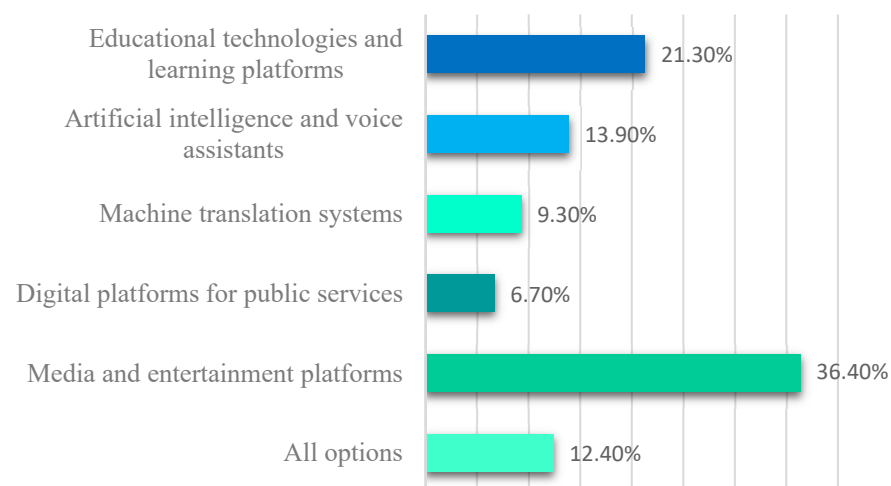


Figure 5. The role of the national language in the domains of emerging technologies.

To the question “Do you think the use of artificial intelligence equipped to work in Kazakh can contribute to enhancing the prestige of this language in modern society?”, survey responses revealed several key insights:

A significant majority of respondents (68.2%) believe that the use of AI capable of operating in Kazakh would enhance the language’s prestige in modern society. This reflects a high level of confidence in the potential of new technologies to elevate the status of

Kazakh. Respondents expressed the view that AI integration would broaden the use of the Kazakh language, thereby strengthening its societal role and visibility.

A smaller proportion of respondents (13.9%) expressed doubt, stating that such advancements might not have a substantial impact on the language's status. This skepticism indicates lingering uncertainties about the tangible benefits of AI on the promotion of Kazakh. These opinions suggest the need for further public engagement and educational efforts to highlight the transformative potential of AI in promoting the language.

Approximately 17.9% of respondents were uncertain or unable to express a definitive opinion. This ambivalence may stem from a lack of information about the possibilities of AI in supporting Kazakh or from the issue's perceived irrelevance to their personal or professional lives. This finding underscores the importance of raising awareness about the opportunities for integrating Kazakh into advanced technological frameworks.

By leveraging AI and other advanced technologies, there is a significant opportunity to strengthen the status of Kazakh in modern society and to expand its functional domains (see Figure 6).

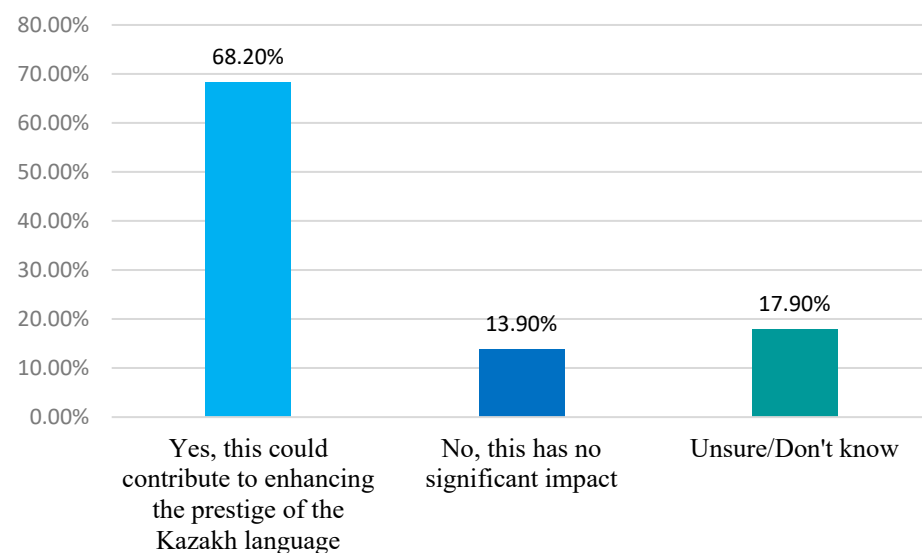


Figure 6. The potential impact of artificial intelligence operating in the national language on enhancing linguistic prestige in society.

With the rapid advancement of modern technologies, the role of voice assistants is becoming increasingly significant. Integrating Kazakh into voice assistants, such as systems like Alisa, has the potential to contribute to the prestige of the Kazakh language. To explore this, respondents were asked “Do you think the use of voice assistants capable of operating in Kazakh can enhance the prestige of the language in modern society?”

The majority of respondents (73.3%) believe that integrating Kazakh into voice assistants like Alisa would significantly strengthen the prestige of the language in society. This result reflects a high level of confidence in the role of advanced technologies in elevating the status of Kazakh. Voice assistants operating in Kazakh are seen as tools to simplify its use in daily life, thus enhancing its societal role and relevance.

However, 13.8% of respondents expressed doubt about the impact of voice assistants on the language's prestige. This skepticism suggests that some individuals remain unconvinced of the tangible benefits such technologies could bring to the development of Kazakh. Such perspectives may stem from a limited understanding or awareness of the role of technology in linguistic promotion, highlighting the need for targeted awareness campaigns.

A smaller proportion (12.9%) of respondents were uncertain or unable to express a clear opinion. This ambivalence could indicate a lack of information about the potential of voice assistants to support the Kazakh language or a perception that the issue is not particularly relevant to their lives. This finding underlines the importance of providing comprehensive information on the integration of Kazakh into advanced technological platforms.

Integrating Kazakh into voice assistant technologies like Alisa not only offers opportunities to broaden its functional domains but also holds the potential to increase its prestige by making it more accessible and applicable in everyday life (see Figure 7).

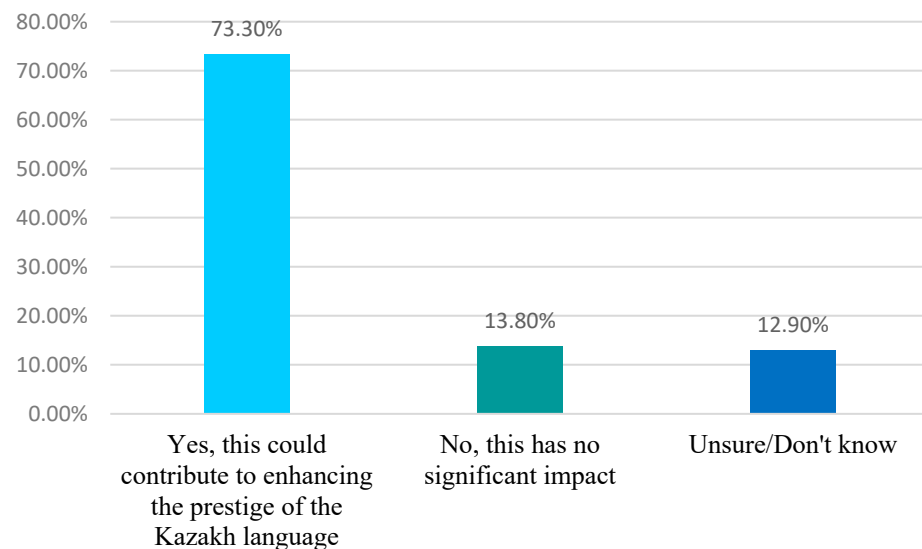


Figure 7. The potential impact of voice assistants operating in the national language on enhancing linguistic prestige in society.

7. Discussion

This study examines how language preferences, bilingual attitudes, and technological advancements shape Kazakhstan's evolving linguistic landscape. Drawing on Spolsky's (2004) model of language policy, which highlights the interplay between language practices, language ideologies, and language management, the findings provide insights into the sociolinguistic dynamics of Kazakh, Russian, and English in different domains.

The language practices observed in the data demonstrate that Kazakh dominates in familial, educational, and governmental settings, reinforcing its role as a national language. Meanwhile, Russian remains prevalent in professional and financial contexts, reflecting its historical legacy. Although English is less commonly used in daily interactions, it is gaining recognition in academic and technological domains, aligning with its global role. These patterns highlight the interplay between national, historical, and global forces in shaping Kazakhstan's linguistic landscape, consistent with Spolsky's notion that language policy is influenced by national ideology, global linguistic trends, and sociolinguistic realities. In relation to H1—which posits that language choice in Kazakhstan is domain-specific and shaped by regional and sociocultural factors, with urban areas exhibiting higher multilingualism and English usage—the findings offer partial support. The data clearly demonstrate domain-specific language practices, with different languages occupying distinct functional niches in various settings. Regional variations also emerge: English is more frequently used in Astana (standardized residual = 2.1), which reflects the city's international profile and global connectivity. This finding supports the notion that urban centers exhibit higher multilingualism and English usage. However, the extent of English usage in daily life in these areas may not be as widespread as initially expected, indicating

that while English is prominent in professional and academic contexts, its use in everyday communication remains limited.

In relation to H2—which suggests that regional differences shape public attitudes toward Kazakh–English bilingualism, with urban areas showing more favorable views—the findings largely support this assumption.

The survey results reveal a predominantly positive attitude toward bilingual education, with 89.2% of respondents supporting English promotion in education. This reflects a widespread recognition of English as a global lingua franca, essential for international mobility, access to modern education, and technological advancement. Importantly, the increasing role of English does not appear to diminish the perceived significance of Kazakh. Instead, respondents view bilingualism as an opportunity to elevate Kazakh's status alongside English, fostering a linguistic balance that enhances Kazakhstan's cultural identity and global integration. This finding aligns with Spolsky's (2009) assertion that language policy decisions often reflect a balance between national identity preservation and engagement with global linguistic trends.

Importantly, the regional analysis confirms that attitudes toward bilingualism vary across Kazakhstan. As shown in Figure 4A–D, Astana consistently expresses the strongest support for promoting English through education and perceives English as a language that strengthens rather than threatens Kazakh. Similarly, respondents in Almaty reject the idea that English undermines Kazakh language and culture, reflecting a prevailing perception of linguistic complementarity rather than conflict. These patterns may be influenced by factors such as urbanization, exposure to global networks, and access to educational opportunities. As major urban centers, Astana and Almaty offer greater access to English-medium education and international institutions, fostering more positive and integrative views of English. These findings underscore the need for regionally responsive language policies. As Spolsky (2009) emphasizes, language management is most effective when rooted in the lived realities of communities, highlighting the importance of context-sensitive planning in Kazakhstan's multilingual landscape.

Language management, particularly in the context of technological developments, emerges as a prominent focus of this research. The integration of Kazakh into digital platforms, such as artificial intelligence, voice assistants, and AI-driven translation tools, underscores the transformative potential of digital language policy (Chen et al., 2021; Wei, 2022; Zhang & Zou, 2022; Navarro & Tudge, 2023). This aligns with Hypothesis 3 (H3), which posits that the integration of the Kazakh language into modern technologies significantly contributes to enhancing its societal prestige and broadens its functional use in various domains. Respondents emphasized the importance of technology in promoting Kazakh, with 68.2% agreeing that AI applications can enhance its status in modern society. These developments align with language management efforts aimed at expanding Kazakh's digital presence, making it more accessible and functional in contemporary technological environments.

8. Conclusions

This study highlights the dynamic and evolving nature of bilingualism in Kazakhstan. English continues to gain prominence in professional and educational settings, while Kazakh is increasingly integrated into public life, education, and digital platforms. However, the long-term sustainability of bilingualism depends on strategic policies and consistent efforts to support both languages across various domains.

As bilingualism expands, the emergence of new speakers—individuals who acquire Kazakh and English outside traditional family transmission—raises important questions about language use, identity, and policy. Language ideologies, which shape language

policies, are reflected in everyday language practices, including those within families. Parents often transmit their ideologies through language choices in interactions, socializing their children into specific linguistic norms. In this context, new speakers may either align with or challenge these inherited ideologies, shaping their own linguistic identities and contributing to broader shifts in language use. Future research should engage with new speaker theory to explore how they navigate linguistic choices and influence sociolinguistic dynamics.

Additionally, technological advancements, particularly AI-driven tools, are transforming bilingualism in Kazakhstan. AI-powered language learning applications and NLP-based assistants enhance accessibility, language acquisition, and digital integration. Platforms like Duolingo and LingQ use AI to personalize lessons, increasing engagement and retention. For both Kazakh and English, integrating AI-powered speech recognition and adaptive feedback mechanisms could enhance learning for all age groups by providing real-time corrections and customized exercises. To accelerate this process, the government could support the development of AI-based bilingual learning tools by providing funding and technical assistance to startups and educational institutions. In addition, investing in natural language processing (NLP) research would advance AI assistants that facilitate seamless communication and access to information in public services, education, and other key domains, strengthening bilingual competencies across society.

Future research should also critically assess the impact of emerging technologies on Kazakh language development, particularly the role of large language models (LLMs). Since many AI systems rely on translated rather than authentic Kazakh-language materials, it is essential to examine how this might influence linguistic structures, discourse patterns, and long-term language use. Understanding these implications will be key to developing strategies that safeguard the linguistic integrity of Kazakh while leveraging technological advancements for its continued growth.

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