JOURNAL OF ADVANCED LINGUISTIC STUDIES
VOL. 13, NO. 2, JUL-DEC 2026 – PART 2 (ISSN 2231-4075)

Linguistic Foundations of Associative Dictionary Compilation: Evidence from Uzbek Associative Responses

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ABSTRACT

Associative dictionaries represent an important source for investigating linguistic consciousness, conceptual structures, and cultural values reflected in language. The present study examines the linguistic foundations of associative dictionary compilation based on associative responses collected from Uzbek speakers. The research aims to identify the role of associative relations in lexical organization and to determine their significance for the development of associative lexicography in Uzbek. Data were obtained through a free word association experiment conducted via an online survey involving 86 Uzbek-speaking respondents. The experiment included 20 stimulus words representing family relations, cultural values, educational concepts, emotional categories, and social domains. The collected responses were analyzed using frequency analysis and semantic grouping. The findings demonstrate that associative reactions are strongly influenced by cultural values, social experience, and collective linguistic consciousness. Family-related concepts generated predominantly positive emotional associations, while educational and national-cultural stimuli reflected value-oriented conceptual structures. The results confirm the importance of associative data for understanding linguistic consciousness and highlight the potential of associative lexicography for the development of modern lexicographic resources in Uzbek. The study contributes to psycholinguistics, cognitive linguistics, and associative lexicography by

providing empirical evidence from Uzbek associative responses.

Keywords: Associative dictionary, associative lexicography, psycholinguistics, linguistic consciousness, free word association experiment, Uzbek language; lexicography, cognitive linguistics, verbal associations

1. INTRODUCTION

The increasing interest in psycholinguistics, cognitive linguistics, and lexicography has stimulated extensive research into the structure of the mental lexicon and the mechanisms of verbal association. Among the significant achievements in this field is the development of associative dictionaries, which provide valuable information about linguistic consciousness, conceptual structures, and culturally grounded patterns of meaning. Associative data are especially useful because they reveal not only dictionary meanings but also spontaneous semantic, emotional, and cultural links that speakers activate when encountering a stimulus word (Osgood 1957; Deese 1965; Aitchison 2012).

Unlike traditional explanatory or bilingual dictionaries, associative dictionaries register verbal reactions produced by speakers in response to stimulus words. Such dictionaries reveal semantic, cognitive, emotional, and cultural relationships between lexical units and make it possible to investigate the organization of linguistic knowledge in the human mind. As a result, associative lexicography occupies an important interdisciplinary position connecting linguistics, psychology, cognitive science, and cultural studies.

The theoretical foundations of associative research were established within psycholinguistic studies of verbal behavior. Free association tasks have been used to investigate lexical retrieval, semantic organization, similarity judgments, and the structure of conceptual knowledge (Nelson 2004; De Deyne 2019; Abramski 2025). In recent years, interest in association

norms has expanded further due to the development of multilingual databases and the use of semantic networks in cognitive and computational linguistics (Jonauskaite 2025).

In contemporary linguistics, associative dictionaries are considered not only lexicographic resources but also instruments for studying linguistic consciousness and national-cultural specificity. Associative reactions reflect both universal cognitive mechanisms and culture-dependent patterns shaped by historical experience, social values, and linguistic traditions. Therefore, associative dictionaries can be used to identify similarities and differences between languages and cultures, and they are especially relevant for comparative and contrastive linguistic research.

Despite growing international interest in associative lexicography, research on associative dictionary compilation in the Uzbek language remains limited. Existing Uzbek linguistic studies have mainly addressed lexical semantics, cognitive linguistics, and linguistic worldview, whereas the theoretical and methodological principles of collecting and systematizing associative data require further development. This situation creates a need for empirical studies that can support the future creation of a national associative dictionary of Uzbek.

The present study aims to examine the linguistic foundations of associative dictionary compilation through empirical evidence from Uzbek associative responses. The research focuses on identifying key principles of associative lexicography and exploring the role of associative responses in representing linguistic consciousness. Particular attention is paid to the potential application of associative data in the development of an Uzbek associative dictionary and in future Uzbek-English comparative research.

2. Literature Review

Associative lexicography emerged at the intersection of psycholinguistics, cognitive science, and lexicography. Early work on semantic differential methods and verbal associations demonstrated that word meanings are not isolated units but are

connected through evaluative, affective, and conceptual relations (Osgood 1957). Deese (1965) further emphasized that associations can reveal the structure of thought and semantic organization. These theoretical foundations shaped later research on the mental lexicon and word association norms.

The mental lexicon is commonly understood as a dynamic network of lexical units and semantic relations. Words are linked through conceptual similarity, contextual co-occurrence, emotional evaluation, and cultural experience (Aitchison 2012; Jackendoff 2002). From this perspective, associative responses provide empirical access to the ways speakers organize lexical knowledge. Modern research on free association norms also shows that associative data can be modeled as semantic networks in which cue words and responses form links reflecting conceptual knowledge (De Deyne 2019; Abramsk 2025).

Associative dictionaries differ from traditional lexicographic resources in their object and method. Explanatory dictionaries describe conventional meanings of lexical units, whereas associative dictionaries document spontaneous reactions produced by speakers. Consequently, associative dictionaries provide access to implicit semantic knowledge, cultural values, stereotypes, emotional attitudes, and collective experience. Karaulov (2002) and Ufimtseva (2014, 2020) emphasized that associative dictionaries function as models of linguistic consciousness because they record verbal-associative networks of a speech community.

In Russian and post-Soviet psycholinguistics, associative studies have played an important role in the development of language consciousness theory. Large-scale associative dictionaries have been created for Russian and other languages, and these resources have been used to compare linguistic worldviews across ethnic and cultural groups. Recent research on Kazakh associative lexicography also demonstrates that associative dictionaries can represent ethnocultural values and identity-related meanings in language consciousness (Dmitryuk 2021; Akhmetova & Yespekova 2024; Akhmetova 2025).

Word association research has also developed actively in English and multilingual contexts. The ‘Small World of Words’

project provides extensive English association norms for thousands of cue words and has become a major resource for psycholinguistic and semantic network research (De Deyne et al. 2019). Recent multilingual databases, including free association datasets across several languages, show that association norms are valuable for cross-linguistic semantics, translation studies, and cross-cultural comparisons (Jonauskaite 2025).

Recent studies also demonstrate that word association tasks remain useful in educational and bilingual contexts. Puscama (2024) examined semantic network development in L2 Spanish, while Kan (2024) and Hayes & Kan (2025) used word association tasks to analyze semantic organization in bilingual children. Hippolyte et al. (2025) established semantic and phonological associative norms for French children, confirming the value of associative methods for normative and developmental research. These studies show that associative responses are informative not only for lexicography but also for language acquisition, bilingualism, education, and cognitive development.

Although associative lexicography has been extensively developed in several languages, the methodological foundations for compiling associative dictionaries in Uzbek remain insufficiently explored. There is a need to collect empirical associative data from Uzbek speakers, identify dominant associative fields, and determine how these data can be represented lexicographically. The present research addresses this gap by analyzing responses from Uzbek-speaking participants and discussing their implications for associative dictionary compilation.

3. Research Gap and Research Questions

Although associative lexicography has been developed in several languages, particularly English and Russian, the theoretical and methodological foundations of associative dictionary compilation in Uzbek remain underexplored. Existing studies mainly focus on lexical semantics, cognitive linguistics, and linguistic worldview,

while systematic empirical collection and lexicographic representation of associative data have received limited attention. Furthermore, comparative studies examining associative structures across Uzbek and English require a reliable Uzbek associative database. The lack of comprehensive associative resources for Uzbek restricts opportunities for cross-linguistic and cross-cultural investigations of linguistic consciousness. Therefore, a pilot empirical study based on Uzbek associative responses is a necessary step toward broader associative dictionary compilation and future Uzbek-English comparison.

The study is guided by the following research questions: 1) What associative patterns are produced by Uzbek-speaking respondents in response to culturally and socially significant stimulus words? 2) Which semantic domains are most salient in the associative responses? 3) What linguistic and methodological principles can be derived for compiling an Uzbek associative dictionary?

4. METHODOLOGY

The study employed a free word association experiment to investigate associative relations in the linguistic consciousness of Uzbek speakers. Data were collected through an online survey administered via Google Forms. Online collection was chosen because it allows rapid distribution among respondents and has been used in recent large-scale association datasets (Jonauskaite 2025).

The experiment involved 86 Uzbek-speaking respondents. Participants were instructed to write the first word or short expression that came to mind after reading each stimulus word. The task was designed as a single-response free association test. No correct or incorrect answers were indicated, and respondents were asked to provide spontaneous reactions. The study involved 86 Uzbek-speaking respondents, including 53 females (61.6%) and 33 males (38.4%). The age distribution was as follows: 18–25 years (n=26), 26-35 years (n=41), 36-45 years (n=14), and 46 years and above (n=5).

The survey consisted of 20 stimulus words representing family relations, national-cultural values, educational concepts, emotional categories, and social domains. The selected stimuli were: *Ona* (mother), *Ota* (father), *Oila* (family), *Uy* (home), *Vatan* (homeland), *Sevgi* (love), *Bilim* (knowledge), *Ta'lim* (education), *Mehr* (kindness/affection), *Tabiat* (nature), *Til* (language), *Kitob* (book), *Ish* (work), *Pul* (money), *Kelajak* (future), *Omad* (luck), *Baxt* (happiness), *Yoshlik* (youth), *Farzand* (child), and *Hayot* (life).

The collected responses were processed using frequency analysis and semantic grouping. Before analysis, responses were normalized in order to reduce orthographic variation. For example, variants with different apostrophes or spelling forms were grouped when they clearly referred to the same lexical item. Frequency was calculated for each reaction, and the most frequent responses were interpreted as the core of the associative field. Less frequent responses were considered peripheral elements of the field.

The methodological approach is consistent with the general practice of word association research, where the frequency of a reaction indicates associative strength between the stimulus and the response (Nelson et al. 2004; De Deyne et al. 2019). The present study is a pilot empirical investigation; therefore, the findings should be understood as preliminary evidence for developing a larger Uzbek associative dictionary project.

5. RESULTS

The analysis revealed several dominant associative patterns reflecting the linguistic consciousness of Uzbek speakers. Table 1 presents the most frequent responses for each of the 20 stimulus words. Frequencies indicate the number of respondents who produced the corresponding association.

Table 1. *Stimulus words and semantic domains*

Semantic domain	**Stimulus words**
Family and kinship	Ona, Ota, Oila, Farzand
National-cultural values	Vatan, Til, Mehr

Semantic domain	Stimulus words
Education and knowledge	*Bilim*, *Ta'lim*, *Kitob*
Emotional and existential categories	*Sevgi*, *Baxt*, *Omad*, *Yoshlik*, *Hayot*
Social, material and natural domains	Uy, Ish, Pul, Kelajak, Tabiat

Table 2. *Most frequent associative responses to the stimulus words*

Stimulus word	Dominant response	Frequency	Percentage (%)
Ona	*Mehr*	15	17.4
Ota	*Davlat*	12	14.0
Oila	*Baxt*	9	10.5
Uy	*Makon*	9	10.5
Vatan	*O'zbekiston*	10	11.6
Sevgi	*Muhabbat*	9	10.5
Bilim	*Boylik*	8	9.3
Ta'lim	*Tarbiya*	10	11.6
Mehr	*Muhabbat*	10	11.6
Tabiat	*Go'zallik*	9	10.5
Til	*O'zbek*	9	10.5
Kitob	*Bilim*	11	12.8
Ish	*Pul*	11	12.8
Pul	*Vosita*	8	9.3
Kelajak	*Umid*	7	8.1
Omad	*Baxt*	9	10.5
Baxt	*Oila*	9	10.5
Yoshlik	*Beboshlik*	4	4.7
Farzand	*Ne'mat*	17	19.8
Hayot	*Sinov*	10	11.6

5.1. *Family-related concepts*

Family-related stimuli generated the highest concentration of emotionally positive and culturally significant associations. The stimulus *Ona* produced *mehr* (15) as the dominant response, followed by *mehribon* (4), *ayol* (3), *jannatim* (3), and *onam* (2). These responses indicate that the mother image is conceptualized primarily through affection, care, sacredness, and personal emotional closeness.

The stimulus *Ota* was most frequently associated with *davlat* (12), "father" (3), *davlatim* (3), *otam* (2), *erkak* (2), and *suyanch* (2). The dominant response *davlat* suggests that the father is conceptualized as a source of stability, authority, protection, and

social support. This differs from the mother field, which is more affective and emotional.

The stimulus *Oila* was associated with *baxt* (9), *muqaddas* (6), vatan (4), "family" (3), and *qo'rg'on* (2). These responses show that the family is understood as a sacred and protective social institution. The strong link between *oila* and *baxt* demonstrates that happiness is conceptualized through family life in Uzbek linguistic consciousness.

The stimulus Farzand produced *ne'mat* (17) as the most frequent response, which was the strongest single association in the dataset. This result reflects the high cultural value assigned to children in Uzbek society. The responses *bola* (3), "child" (3), *kelajak* (2), and *quvonch* (2) further show that children are associated with blessing, joy, and continuity.

5.2. *National-cultural and identity-related concepts*

The stimulus *Vatan* produced *O'zbekiston* (9) as the most frequent response, followed by *kindik qoni to'kilgan joy* (2), "country" (2), *muqaddas* (2), and *vatan* (2). These responses indicate that homeland is not perceived only as a geographical category; it is also connected with origin, sacredness, and national identity.

The stimulus *Til* generated responses such as *o'zbek* (4), "language" (3), *zabon* (2), *o'zlik* (2), *millat* (2), and *muloqot* (2). The field shows that language is associated with communication as well as identity and nationhood. This supports the idea that associative data can reveal cultural and ideological dimensions of lexical meaning.

The stimulus *Mehr* was linked with *ona* (4), *oqibat* (4), *muhabbat* (4), *sevgi* (4), *shavqat* (3), and "kind" (3). These responses demonstrate that *mehr* functions as a culturally dense concept connecting family affection, compassion, love, and moral responsibility.

5.3. *Educational concepts*

Educational stimuli produced highly structured associative fields. The stimulus *Bilim* was most frequently associated with *boylik* (7), *kuch* (6), *ilm* (3), *kelajak* (3), "knowledge" (3), and *cheksiz*

ummon (2). These responses suggest that knowledge is conceptualized as value, power, and an unlimited resource.

The stimulus *Ta'lim* was most frequently associated with *tarbiya* (9), *kelajak* (7), *maktab* (3), *bilim* (2), *imkoniyat* (2), and "education" (2). The strong connection between *ta'lim* and *tarbiya* reflects the traditional understanding of education as a combination of learning, moral upbringing, and future-oriented development.

The stimulus *Kitob* produced *do'st* (6), "book" (5), *bilim* (5), *xazina* (3), and *o'qish* (2). The associative field shows that a book is conceptualized not only as an object but as a companion, a source of knowledge, and a treasure.

5.4. *Social, material and existential concepts*

The stimulus Uy generated *boshpana* (4), *makon* (4), *vatan* (4), "home" (4), *uy* (3), and *tinchlik* (3). These reactions demonstrate that home is associated with shelter, place, peace, and belonging. The overlap between *uy* and *vatan* indicates that home and homeland are conceptually close in the respondents' worldview.

The stimulus *Ish* was most frequently associated with *pul* (9) and *mehnat* (7), followed by "work" (4), *daromad* (2), *imkoniyat* (2), and *kasb* (2). These responses reveal a practical conceptualization of work through income, effort, and professional opportunity. Similarly, *Pul* was associated with *vosita* (6), *ish* (6), "money" (5), *ehtiyoj* (3), and *kalit* (2), showing that money is understood primarily as a means, need, and instrument of access.

The stimulus Kelajak generated *umid* (6), "future" (5), *orzu* (3), *taqdir* (2), *ertangi kun* (2), and *yorug'lik* (2). These responses show that the future is conceptualized through hope, dreams, uncertainty, and positive expectation. The stimulus *Omad* was linked with *baxt* (6), *harakat* (4), *omad* (3), *taqdir* (2), *yutuq* (2), and *muvaffaqiyat* (2), suggesting that luck is understood as a combination of fortune and personal effort.

The stimulus *Baxt* produced *oila* (6), *omad* (3), *xotirjamlik* (3), *iymon* (2), *sog'lik* (2), and *tinchlik* (2). This field indicates that happiness is strongly connected with family, peace, faith, health, and psychological calmness. *Yoshlik* was associated with

beboshlik (3), *bolalik* (3), *g'animat* (2), *muhabbat* (2), *energiya* (2), and *shijoat* (2), reflecting both positive vitality and culturally recognized impulsiveness.

The stimulus *Hayot* produced *sinov* (10), *yashash* (3), "life" (3), *umr* (2), and *borliq* (2). The dominant association *sinov* indicates that life is frequently conceptualized as a trial or challenge. This result reveals an existential and moral interpretation of human experience in the associative field of Uzbek speakers.

6. DISCUSSION

The findings of this study demonstrate that associative responses are closely connected with cultural values, social experience, and linguistic consciousness. The obtained associative patterns indicate that Uzbek speakers tend to conceptualize social and cultural phenomena through emotionally and culturally significant categories. This observation supports the view that associative dictionaries function as models of linguistic consciousness and provide valuable insights into the structure of the mental lexicon (Karaulov 2002; Ufimtseva 2020; Dmitryuk 2021).

The results reveal that family-related concepts constitute the strongest conceptual domain in Uzbek associative consciousness. The associations *Ona–Mehr* (17.4%), *Ota–Davlat* (14.0%), *Oila–Baxt* (10.5%), and *Farzand–Ne'mat* (19.8%) formed the most stable associative links in the dataset. Among all stimulus-response pairs, *Farzand–Ne'mat* represented the strongest association, indicating that children are perceived not merely as family members but as blessings and the continuation of family life. These findings reflect the central role of family values in Uzbek culture and are consistent with ethnopsycholinguistic studies suggesting that associative fields reveal culturally significant concepts and value systems (Dmitryuk 2021; Kuzembayeva et al. 2024).

An important finding of the study is the reciprocal associative relationship between *Oila* ("family") and *Baxt*

("happiness"). While the stimulus word *Oila* most frequently elicited the response *Baxt*, the stimulus Baxt also generated Oila as its dominant association. This bidirectional relationship demonstrates a strong conceptual interconnectedness between family and happiness in Uzbek linguistic consciousness. The result suggests that personal well-being and life satisfaction are strongly linked to family relationships and social harmony.

Educational concepts also produced highly value-oriented associative patterns. The associations *Bilim–Boylik* (9.3%), *Ta'lim–Tarbiya* (11.6%), and *Kitob–Bilim* (12.8%) indicate that education and knowledge are conceptualized not only as cognitive resources but also as moral and social values. The response *Tarbiya* to the stimulus *Ta'lim* demonstrates that education is viewed as a process of character formation and social development rather than solely academic instruction. Similarly, the association between *Kitob* and *Bilim* highlights the perception of books as sources of knowledge, intellectual growth, and self-development. These findings correspond to previous studies that emphasize the role of associative experiments in revealing conceptualizations of educational values (Dziubenko et al. 2023; Puscama 2024).

National and cultural identity emerged as another prominent conceptual domain. The associations *Vatan–O'zbekiston* (11.6%) and *Til–O'zbek* (10.5%) demonstrate that homeland and language are closely connected with national belonging and collective identity. Respondents frequently associated homeland with birthplace, sacred land, and national pride, while language was associated with communication, ethnicity, and cultural heritage. These findings support the argument that associative data can reveal identity-related meanings that may not be fully represented in traditional explanatory dictionaries.

The study also identified an economic and professional value domain. The associations *Ish–Pul* (12.8%) and *Pul–Vosita* (9.3%) indicate that work is primarily conceptualized as a source of income, while money is viewed as a means of achieving practical goals and opportunities. Such responses reflect the importance of economic well-being in contemporary social

consciousness and demonstrate how associative data can reveal attitudes toward work and material values.

Life-related concepts produced associations that reflect both optimism and existential experience. The association *Kelajak–Umid* (8.1%) suggests that the future is predominantly perceived through the concept of hope, whereas *Hayot–Sinov* (11.6%) indicates that life is understood as a sequence of challenges, experiences, and personal growth. Likewise, *Yoshlik* was most frequently associated with *Beboshlik* and *Beg'uborlik*, reflecting perceptions of youth as a carefree and valuable period of life. These findings demonstrate that associative structures capture not only linguistic knowledge but also collective perceptions of life stages and human experience.

The results further show that Uzbek associative consciousness combines universal and culture-specific tendencies. Responses such as "love," "family," "book," "life," "future," and "child" demonstrate the influence of English lexical forms and bilingual activation among some respondents. At the same time, culturally specific concepts such as *mehr*, *ne'mat*, *tarbiya*, *vatan*, *davlat*, and *sinov* reveal unique aspects of Uzbek conceptualization. This combination is particularly important for future cross-linguistic and comparative studies because associative dictionaries can document both universal semantic patterns and culture-specific meanings.

From a lexicographic perspective, the findings indicate that future Uzbek associative dictionary entries should include not only frequency-ranked responses but also semantic grouping, cultural interpretation, and sociolinguistic information about respondents. Such a model would allow an Uzbek associative dictionary to serve as a valuable resource for psycholinguistic research, language teaching, translation studies, intercultural communication, and computational linguistics. Overall, the study confirms that associative lexicography provides an effective framework for investigating linguistic consciousness and documenting the culturally embedded meanings reflected in the Uzbek language.

7. Proposed Model for Uzbek Associative Dictionary Entries

Based on the findings, the following model is proposed for compiling associative dictionary entries in Uzbek:

1. Stimulus word: the lexical unit presented to respondents.
2. Frequency-ranked responses: reactions listed according to their frequency.
3. Core and periphery: high-frequency responses are treated as the core of the associative field, while rare responses form the periphery.
4. Semantic grouping: responses are grouped into conceptual domains such as emotion, family, identity, education, material value, or existential meaning.
5. Cultural commentary: culturally significant responses are explained from a linguocultural perspective.
6. Comparative field: where possible, Uzbek associative data can be compared with English or other language association norms.

For example, an entry for ONA may include the core response *mehr*, additional responses such as *mehribon*, *jannatim*, *ayol*, and *onam*, and a cultural commentary explaining the maternal image as an affective and sacred concept in Uzbek linguistic consciousness. Such a structure would make the dictionary useful not only for linguistic description but also for comparative and applied research.

8. Conclusion

The present study examined the linguistic foundations of associative dictionary compilation through a psycholinguistic investigation of associative responses produced by Uzbek speakers. The results demonstrate that associative reactions reflect not only lexical relations but also cultural values, social norms, and collective experience.

The strongest associative domains in the dataset were family, education, national identity, and existential values. Family-related concepts generated emotionally positive associations; educational concepts reflected moral and future-oriented meanings; national-cultural stimuli revealed identity-based associations; and existential concepts showed value-laden interpretations of life and human experience.

The study confirms that associative dictionaries provide valuable insights into linguistic consciousness and can serve as effective instruments for psycholinguistic and lexicographic research. The findings further indicate that associative lexicography has significant potential for the development of modern linguistic resources in Uzbek.

The associative data collected in this study may contribute to the creation of a national associative dictionary of the Uzbek language and provide a foundation for future comparative investigations involving English and other languages. Future research should expand the number of respondents, include regional variation, collect English comparative data, and develop a larger database of stimulus words.

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