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# **Extended Abstract**

# An investigation on the impacts of language contact in the north of Ilam province, Iran based on computational dialectometry and mass data analysis (case study of "Khezeli" dialect)

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# Introduction

The range of spoken languages in the northern regions of Ilam province, Iran shows remarkable abundance and diversity. One of these language sub-types is "Khezli," which has unique characteristics compared to neighboring languages. The current research, as a sample of mass data analysis, is an attempt to shed light on the criteria that make Khazeli different from the languages around it. The basic idea behind the research is as follows: examination of the salient phonetic, morphologic, and syntactic features in the Khazeli variety can be viewed as evidence indicating its tendency towards a specific region/dialect group in the region. Additionally, in the current research, we hope to trace the linguistic origin of the Khazeli language by making use of data mass analysis procedures in linguistics.

# **Materials & methods**

The database of this research is derived from Sanai's dialect survey (2015), in which four northern cities of Ilam province, namely Ilam, Aivan, Chardavel, and Sirvan, were selected as the research field. These cities have a total of 16 urban areas, and the rural inhabitants form the statistical population involved in the research. The applied method in the research was quantitative, accompanied by field data collection. The sampling criterion can be summarized as dialect homogeneity, distance, idiosyncraticity, and the population criterion of the residence of more than 100 households. Also, in order to test the accuracy in the selection of the villages and mutual intelligibility among the speakers of the adjacent villages, the results taken from questions number (8) and (9) of part (a) of the national language atlas

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project questionnaire were used to test "the range of similarity among the dialects of the interviewee's village with other rural areas considered in research" and "the possible uniqueness of the dialect of the neighboring villages." Based on this, finally 36 dialect samples were taken from 35 villages. The quantitative difference between the number of dialect samples and the number of villages was due to the fact that the residents of one of the villages (Sarab Karzan in Sirvan city) used two varieties, which means there is a dichotomy of spoken languages in the same village.

The research tool is a National Project under the title of Iran linguistic atlas project questionnaire, which has been modified by the researcher. As a result, a total of 105 words and 36 default sentences of the aforementioned questionnaire were taken. Considering the limitations of the research and the effort to provide more accurate results using dialect software, a total of 117 words and phrases and three simple sentences were extracted from the source questionnaire and used as the questionnaire and items to be considered in field interviews. Based on the researchers' linguistic knowledge, three sentences/phrases such as "I saw you," "he/she is working," and "I was at home" were extracted from the total of 36 default sentences, along with three adverbs "yesterday," "yet," "very," two prepositions "in" and "with," and eight verbs with the English equivalents of "I have eaten," "I don't come," "I want," "didn't come," "I don't see," "have you arrived," "I'm going," "I'm coming," and a pronoun "himself."

The research tool is the rug/L04 Dialectometry software, which provides the user with various statistical and analytical facilities based on mass data analysis. Among the most important graphs and measures of this software, we can mention multidimensional scaling and cluster graph. Multidimensional scaling technique is a mathematical method to determine the position of objects in the language or dialect under study in two or more axes (dimensions) in geometrical space, which represents the "geographical distance" and "linguistic distance" respectively. The input data of the software consists of dialectal data obtained from interviews in the field, converted into textual form with "International Phonetic Alphabet" (IPA) symbols in separate spreadsheets of Excel. The file obtained from this program, along with the file obtained from Google Earth, which contains the geographical coordinate system of the field (villages from which the dialect sample was prepared), both formed the required inputs of the dialect software. Afterwards, various statistical possibilities of the software regarding the dialects of the research were obtained.

# **Discussion & Results**

By using research tools, collecting and preparing databases, the distribution of dialect areas, and the distribution of phonetic, lexical, and syntactic variations of the research field were analyzed. The findings of the research showed that there are three main dialect groups, namely "Laki," "Luri," and "Southern Kurdish," and a total of six dialect subgroups in the north of Ilam province is common. The most prominent result obtained from the data analysis phase is the significant linguistic distance lying in some varieties beside their adjacency. Meanwhile, the "Khezli" language variety ranked first in the dialect subgroup descended from the Southern Kurdish dialect group, with a significant linguistic distance from its understudied counterparts. Also, based on the "Multidimensional Scaling" (MDS) chart, this language type, although included in the set of South Kurdish language types in terms of data analysis, has a small distance and linguistic similarity with the "Laki" dialect group worth mentioning.

The Khazeli dialect has several prominent phonetic features in comparison with other common dialects nearby. The first feature to be mentioned is the alternations of /y/~/o/ and also /t/~/je/ in adverbs such as "end/back" (dyma~/dəma/), the word "ewe" (mjæ~//mł), and "mountain pass" (məljæ~/məlæ/), "farm" (xæljæ~/xælæ/), and the word for "mountain" (kyæ~/kwt/) in the mentioned dialect can be considered as frequently used instances of such alternations. Among the morphological/lexical features of the Khazeli dialect compared to the neighboring dialects, we can mention the pronunciation equivalent of /?all/ for "child" and the application of the reflexive pronoun /wəʒəm/ for "myself," pronounced in the same way as the 2nd person plural pronoun for "you," which is /æhəm/. While there isn't any significant differentiation among Khazeli varieties regarding word order and dialects in adjacency.

# Conclusion

Concerning the linguistic position of the Khazeli dialect among the dialectal groups spoken in the north of Ilam province, it can't be counted as a unique dialect. This issue is the result of the existing phonetic, lexical, and syntactic communalities with its neighboring dialects such as "Ilami, Kalhori, Badrei, and Shirvani Kurdish, etc.," which undergo changes over time and the speakers' attempts during ages and their tendency to make more similarities with Kalhouri dialects and standard/common Kurdish spoken in the city of Ilam. Regarding the origin of the Khazeli dialect, by having a view of the linguistic evidence such as phonological and morphological features, it indicates its affinity with "Laki," an adjacent dialect in the region.

Keywords: Language Contact; Khezli Dialect; Kurdish Language; Ilam; Dialectometry; Mass Analysis

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