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Data Article

Data on verbal expressions for thermal sensation and comfort in the Greek language

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ABSTRACT

This article presents data collected during a web-based survey on expressions used to describe thermal sensation and comfort in the Greek language. The survey used a structured questionnaire and delivered through Google Forms. The survey was promoted through social networks and conducted in spring 2019. The data presented herein comprise of the participants' responses to the questionnaire. A total of 359 questionnaires were completed. The participants were Greek speakers, older than 12, with at least a basic knowledge of the English language. The participants were asked to: (a) select the most appropriate translation, from English to Greek, of the nine-point ISO 10551 scale of perceptual judgment on personal thermal state, (b) formulate five, seven and nine-point thermal sensation scales, (c) report the category of the thermal sensation scale that signifies thermal comfort and (d) to assess the relative distances between the thermal sensation categories of the five, seven and nine-point thermal sensation scales. For the translation of the ISO 10551, the respondents were allowed to choose from a list of 30 Greek wordings. The data have been analysed in the research article entitled "Native influences on the construction of thermal sensation scales" [1].

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Specifications table

Subject	Environmental Science
Specific subject area	Biometeorology
Type of data	Excel file
How data were acquired	Questionnaire survey (original version in: https://docs.google.com/forms/d/e/1FAIpQLSdz8FM6YIg6xZWAP68GwT5KGzSoB2nEKik8akig2mwwYac4fg/viewform and printout in the supplementary material file *Questionnaire.pdf*; English version in Table 1)
Data format	Raw
Parameters for data collection	Online survey during spring 2019 among Greek speakers older than 12 years with at least a basic knowledge of English language.
Description of data collection	A web-based questionnaire on verbal expressions and relative distances between categories of thermal sensation scales was developed on the online survey platform Google Forms and was promoted through the social media.
Data source location	Greece
Data accessibility	With the article
Related research article	Pantavou K., Koletsis I., Lykoudis S., Melas E., Nikolopoulou M., Tsiros I. X. Native influences on the construction of thermal sensation scales. International Journal of Biometeorology (2020), Doi 10.1007/s00484-020-01927-8 [1]

Value of the data

- The data can be used for the investigation of differentiations between thermal sensation scales constructed originally in the Greek language and those translated from English.
- The data can be used for the development of appropriate thermal sensation scales for questionnaire field surveys on urban design, energy consumption and public health purposes.
- The data can be used for comparisons with similar data from surveys in different languages.
- Finally, the data can be used to test the assumption of equidistance between the categories of thermal sensation scales.

1. Data description

This article presents raw data from 359 individuals who participated in an online survey on the verbal expressions used in Greek language to express thermal sensation and thermal comfort and to examine the relative distances between categories of thermal sensation. The data refer to participants' responses to the online questionnaire provided as a printout in file *Questionnaire.pdf* and presented in Table 1. The data can be found in the spreadsheet *Data* of the supplementary material file *Data.xlsx*. Spreadsheet *Translations* of file *Data.xlsx* contains the verbal expressions offered to participants for expressing their thermal sensation in Greek along with their translation in English. These translations have been used in the *Data* spreadsheet to replace the Greek terms originally used by the respondents.

The data are separated in five sections (A to E). Section A includes the response identity (ID), date, time and demographic characteristics of the participants (i.e., gender, age, whether or not the participants had basic knowledge of English language). Section B (item 4 of the questionnaire) includes the more appropriate, according to every participant translation of each category of the nine-point ISO 10551 [2] scale of perceptual judgment on personal thermal state (i.e., very cold, cold, cool, slightly cool, neutral, slightly warm, warm, hot very hot) into the Greek language. Sections C to E include three questionnaire items each, referring to a five (section C), a seven (section D) and a nine-point (section E) scale of thermal sensation. The first item of

Table 1
Structure and items of the questionnaire used in the online survey.

	Questionnaire item	Category	Response options
Section A			
1	Gender		Male Female
2	Age		12–17 18–24 25–34 35–44 45–54 55–65 >65
3	Confirm that you have a basic knowledge of the English language		I have I do not have
Section B			
4	Translate in Greek language the following terms:	Cold Cool Neutral Hot Slightly cool Slightly warm Very cold Very hot Warm	30 Greek wordings[a]
Section C			
5	Order on a five-point scale terms, starting with terms that express thermal sensation in a cold environment and ending with terms that express thermal sensation in a warm environment	A B C D E	30 Greek wordings[a]
6	State the suitable wording for thermal comfort:		30 Greek wordings[a]
7	Assign discrete values to the categories of the five-point scale indicative of their perceived distance from the most extreme category of the cold subscale.		Numbers 0–9
Section D			
8	Order on a seven-point scale terms, starting with terms that express thermal sensation in a cold environment and ending with terms that express thermal sensation in a warm environment	A B C D E F G	30 Greek wordings[a]
9	State the suitable wording for thermal comfort:		30 Greek wordings[a]
10	Assign discrete values to the categories of the seven-point scale indicative of their perceived distance from the most extreme category of the cold subscale.		Numbers 0–13
Section E			
11	Order on a nine-point scale terms, starting with terms that express thermal sensation in a cold environment and ending with terms that express thermal sensation in a warm environment	A B C D E F G H I	30 Greek wordings[a]
12	State the suitable wording for thermal comfort:		30 Greek wordings[a]
13	Assign discrete values to the category of the nine-point scale indicative of their perceived distance from the most extreme category of the cold subscale.		Numbers 0–17

[a] The 30 Greek wordings are presented in the spreadsheet *Translations* in the excel file *Data.xlsx* (supplementary material).

each of the sections C to E (items 5, 8 and 11) includes the thermal sensation scale developed by each participant, the second (items 6, 9 and 12) includes the wording term that signifies thermal comfort and the third (items 7, 10 and 13) includes the values assigned to the categories of the scales. The assigned values range between 0 and 9 for the five-point scale (item 7), 0 and 13 to the seven-point scale (item 10) and between 0 and 17 for the nine-point scale (item 13).

2. Experimental design, materials, and methods

A web-based questionnaire survey was conducted in the context of Urban Biometeorology and Planning (UBiPlan) project carried out by the Agricultural University of Athens, Athens, Greece [3]. The UBiPlan project focuses on (a) modeling urban micrometeorological conditions in order to ameliorate thermal conditions in outdoor public places and enhance their potential use, and (b) on providing guidance for the susceptibility of the population to thermal environment, assessing its potential impact on public health.

The survey was developed on the online survey platform Google Forms [4]. It was made available through the webpage of the UBiPlan project [3] and was promoted through the social media. A pilot survey was carried out to test and review the questionnaire items by distributing a draft of the questionnaire to selected individuals i.e., both members and non-members of the scientific community. The feedback received from the pilot survey was used to modify the questionnaire items in order to improve usability, readability and clarity.

The online survey was anonymous and was conducted between 28th March and 30th May 2019. The requirements for the participants were that they should be above the age of 12 and have at least a basic knowledge of the English language. The questionnaire was in Greek, and was approved by the Ethics Committee of the Agricultural University of Athens (No 21, 21/03/2019). Table 1 presents the framework of the questionnaire used in the survey. The original questionnaire (in Greek) is presented in the supplementary material (file *Questionnaire.pdf*). The respondents were offered 30 Greek wording options as possible terms for expressing their thermal sensation. These are presented in the spreadsheet *Translations* in the excel file *Data.xlsx* (supplementary material).

The first part of the questionnaire provided background information on the objective and the context of the survey. Section A (items 1–3) included participants' characteristics, i.e., gender, age, and whether they had a basic knowledge of the English language. The next three sections (Sections B-E, items 4–13) became visible only when the participants reported a valid age and basic knowledge of English.

Section B (item 4) asked participants to translate each category of the nine-point ISO 10551 [2] scale of perceptual judgment on personal thermal state (i.e., very cold, cold, cool, slightly cool, neutral, slightly warm, warm, hot very hot) in the Greek language. The categories were ordered alphabetically. For any of the ISO scale categories, the respondents were allowed to choose the most appropriate among 30 Greek wordings. Thirteen of these options (i.e. Greek wordings) were related to cool thermal sensation, five to neutral and twelve to warm thermal sensation. These were presented to the participant divided by subscale (cold, neutral, warm) and ordered alphabetically within each subscale. From these, the participants could select only one wording per scale category. Thirteen of these options (i.e. Greek wordings) were related to cool thermal sensation, five to neutral and twelve to warm thermal sensation. The Greek wording options were related to different translations of cold, cool, neutral, neither cool nor warm, warm and hot accompanied by adverbs or adjectives used in the Greek language to denote "very" or "slightly" and some additional Greek phrases commonly used to describe thermal sensation or weather conditions (i.e., normal, freezing cold, heat wave).

Each section of C to E included three items, considering a five (section C, items 5–7), a seven (section D, items 8–10) and a nine-point scale (section E, items 11–13) of thermal sensation. Items 5, 8 and 10 asked participants to develop their own thermal sensation scale with five, seven and nine-points respectively. Items 6, 9 and 12 asked participants to state the proper wording for thermal comfort with respect to a five, seven and nine-point thermal sensation

scale. Items 7, 10 and 13 asked participants to allocate numbers to the points of the various scales in a manner representative of the perceived distances among the categories of the scales. To allow for half point resolution, numbers 0 to 9 were used for the five-point scale, 0 to 13 for the seven-point scale and 0 to 17 for the nine-point scale. In several cases the respondents chose not to use the entire width provided, i.e. the distance of the most extreme category of the hot subscale from the most extreme category of the cold subscale is less than 9, 13 and 17 for the five, seven and nine-point scales, respectively.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships which have, or could be perceived to have, influenced the work reported in this article.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.dib.2020.105807.

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