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Korean consumers' texture evaluation of various foods using four different lexicons

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INTRODUCTION

Texture
- Considered as an important food quality
- Contributes to acceptability of foods

Texture Terminologies
- Various studies developed texture terminologies to evaluate the texture i.e.) English, Japanese, Chinese, etc.
- Active research conducted as cross-culture study

Korean Texture Terminologies
- Korean texture terms list was based on 3 food categories developed in 1980s
  -Terms were limited to rice, noodles, and *Kimchi* categories

OBJECTIVES

1. To compare the effectiveness of four texture lexicons in different languages of Chinese, English, Japanese, and Korean
2. To determine if Korean texture lexicon needs to be developed

MATERIALS and METHODS

Samples

Sample	Detail/variety
Apple	Fuji apple
Beef jerky	Ziller Beef jerky
Egg	Quail egg, boiled
Hardtack	Barley Hardtack
Instant cup noodle	Jin Ramen Cup
Kimchi	Cabbage *Kimchi*
Potato Snack	Pringles
Rice	Steamed Japonica rice
Rice cake	Rice cake for Toppoki
Tofu, soft	Soft soybean curd
Tuna	Canned tuna (in olive oil)
Yogurt	Yoplait Plain Yogurt

A total of 400 consumers
- 18~65 years old, no food allergies

Questionnaire
- Overall liking of the samples (9-point hedonic scale)
- Choose-all-that-apply (CATA) questions using texture terms from 4 different lexicons (translated into Korean)
- CATA questions using a compiled 365 texture terms list

Data Analysis (SAS® Software 9.3)
- ANOVA for acceptability data, Correspondence analysis for CATA data

RESULTS

Correspondence Analysis (CA)

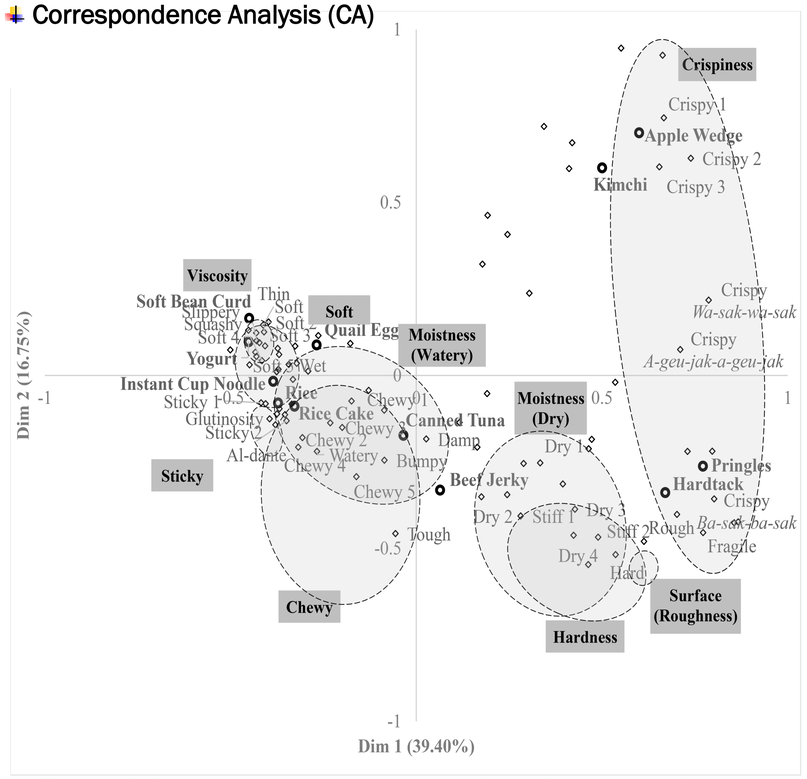

Figure 1. Correspondence analysis biplots of texture evaluation using CATA by consumers using four different texture lexicons translated into Korean

Texture attribute groups

Ten textural attributes groups
Crispy/Crunchy
Soft
Chewy
Sticky
Viscosity (thick, thin)
Elastic
Moistness (watery, dry)
Oily
Surface (Rough, Slimy)
Hardness

DISCUSSION

Correspondence Analysis
- Dimension 1 described the degree of the sound emitted while consuming the foods
- Dimension 2 differentiated the degree of moistness and chewiness of the samples
- Compared to the texture terms developed from other languages, Korean texture terms could not fully differentiate the textural attributes among 12 samples

Texture attribute groups
- Crispy/crunchy: Unlike the English term using crispy/crunchy terms for both wet- and dry- attributes, there were different terms used in Korean texture terms
- Sticky: Consuming short-grain rice and rice cake as a staple food in Korea, there were various words describing the sticky attribute. Most of these terms had both sticky and adhesive attribute
- Viscosity: Terms describing the thickness were more chosen than thin attribute. This might be the impact of using Yogurt sample on our study
- Moistness: Terms related to watery attributes were chosen more than dry. This might be the impact of using more moist food samples on our study

CONCLUSIONS

- Korean terms were effective when evaluating the limited food categories that were originally used for development
- Development of Korean texture terms covering the textural attribute of various foods is necessary

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