Comparison of different scales to measure consumers' perception of attribute intensities

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Introduction

It is highly controversely discussed how to measure consumer's perception of attribute intensities. Researchers disagree if untrained consumers are capable of giving reliable intensity ratings in the course of a consumer test. Just-About-Right (JAR) scales are however widely accepted when evaluating consumer's perception of product attributes. Some researchers claim that consumers are capable of expressing their perceived attribute intensities using unstructured line scales as they are used with trained panelists for profiling methods. As alternative to JAR scales ideal scales may be used to measure not only the perceived but also the «preferred» or «ideal» attribute intensity. The aim of the study was to explore if different measures to express consumer's intensity perception give comparable results and lead to similar conclusions for product development.

Material and Methods

N=240 students took part in a product test of paprika flavored potato chips. Each consumer evaluated four products, whereof one sample was repeated. The four sub-samples of n=60 used different questionnaire types (Table 1).

Table 1: Questionnaire types

Questionnaire	
Q1	5-point JAR questions
Q2	Diagnostic line scales (10 cm) + ideal
Q3	Diagnostic line scales (10cm)
Q4	Line JAR scales (10cm)

Results

The ideal attribute intensity for all four tested products was very close in most attributes, likewise the values of the repeated sample. Consumers appear to have a clear idea of their ideal product and the ideal scales seem to work well even with foods that shows high product variability like potato chips (Fig. 1).

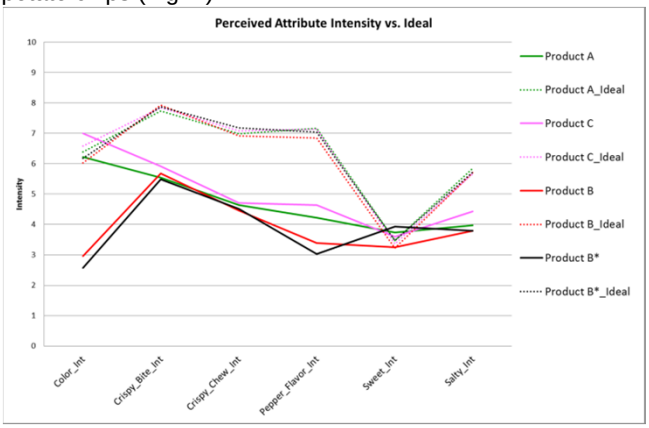

Figure 1: Perceived vs. ideal attribute intensity

The attribute intensity ratings in groups Q2 and Q3 were very similar. Asking the ideal questions did not have an impact on the diagnostic ratings.

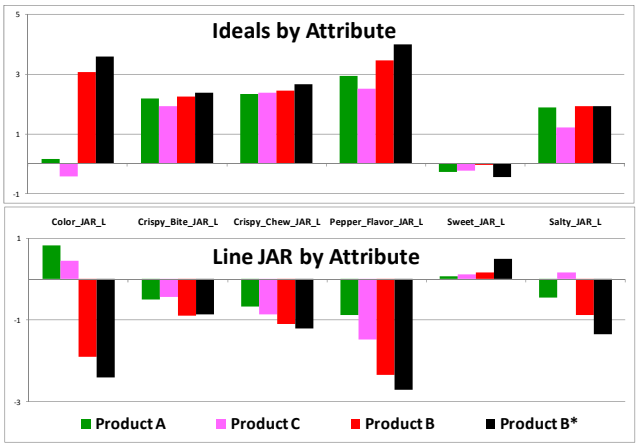

Figure 2: Comparison of Ideals and Line JAR

When comparing results (only relative, not absolute values) of difference from ideal and line JAR scales (Fig. 2), for most of the attributes the indications are mirrored, resulting in similar improvement indications (display of results in inversed sense).

Table 2: Comparison of improvement directions (indication of trends)

Questionnaire	Product	Color	Crispy Bite	Crispy Chew	Pepper Flavor	Sweet	Salty
Q1 JAR	A	-	+	+	+	-	+
	C	=	-	-	+	polarized	-
	B	+	+	+	+	-	+
	B*	+	+	+	+	-	+
Q2 Ideal	A	+°	+	+	+	-°	+
	C	-°	+	+	+	-°	+
	B	+	+	+	+	-°	+
	B*	+	+	+	+	-°	+
Q4 JAR Line	A	-	+	+	+	-°	+
	C	-	+	+	+	-°	-°
	B	+	+	+	+	-°	+
	B*	+	+	+	+	-	+

(-) decrease, (=) leave as is [>75% JAR], (+) increase; (°) very low level

Differences in improvement directions have been discovered only for product C (Tab. 2) and in one attribute for product A.

Conclusion & Recommendations

All three compared methods, 5-point JAR, ideal and line JAR scales picked up improvement needs for the products. For a fair comparison, cut-off levels (similar to 5-point JAR) need to be defined to signify as of when improvement needs are highlighted. Whereas the 5-point JAR questions flag polarization, the line scales may overlook these effects when working with mean values. However, if the total number of consumers is low, the use of line scales may avoid over-interpretation of very small segments expressing extreme opinions.

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