

Sensory Delights: A Study on Traditional Apple Varieties in Spanish Rural Regions

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Abstract

Fresh fruits grown in traditional regions are attracting consumers' attention due to their environmental and social benefits, alongside their sensory attributes such as taste and texture. This study focuses on two varieties of apples - Golden and Reineta - produced in the Aragón region of Spain, along the Ebro River, and in the rural hilly area of Manubles, which has a longstanding tradition of apple production. We assess consumers' preferences for apples grown in these rural areas using a between-subject design Discrete Choice Experiment (DCE) with two treatments. In treatment A, participants (n=96) selected apples based on provided information regarding the rural area and cultivation characteristics. In treatment B, participants (n=96) first visually examined the apples along with their accompanying information, subsequently tasted them, and finally chose their preferred apple for purchase. Methodologically, we furthered our analysis by measuring stated and inferred Attribute Non-Attendance (ANA) for the various attributes and estimated three mixed logit models: i) a full attendance model, which assumes participants valued all presented attributes 'equally'; ii) a stated ANA model, wherein participants selected the attributes they considered post-DCE task; iii) and an inferred ANA model.

Results from the full attendance model revealed no significant differences in utility or Willingness-To Pay (WTP) values between the two treatments. Notably, consumers attached higher utility to the Golden variety, followed by apples originating from the Manubles area. Conversely, stated ANA results indicated that participants who claimed to have considered the attributes attached greater utility on the production origin (Manubles) than the apple variety. Furthermore, utilities for participants acknowledging to have considered the attributes were higher in treatment A than in B. Participants who admitted having ignored some attributes in treatment A indeed assigned no utility to them. However, post-tasting in treatment B, they attributed positive utilities, with the Golden variety receiving the highest value. These participants exhibited low price sensitivity post-tasting, resulting in higher WTPs. Inferred ANA results aligned with the full attendance model, yet the stated ANA model demonstrated a superior model fit.

The study reveals crucial insights for marketers aiming to promote apple varieties. Consumers showed a strong preference for the Golden variety, indicating it should be prominently featured in marketing campaigns. Additionally, consumers placed significant value on the origin of the apples, favouring those from the Manubles area. This highlights the importance of emphasizing the traditional and rural origins of the product to enhance its perceived value. The study also highlights how post-tasting experiences influence consumer preferences and willingness to pay, suggesting that offering tasting experiences could enhance perceived product quality and value. Lastly, addressing price sensitivity by highlighting the superior taste and sensory characteristics of the product can justify higher price points.

These preliminary findings underscore the significance of sensory analysis and the inclusion of ANA in choice experiments, highlighting that product information may increase consumer expectations, which can subsequently shift post-tasting. Additional models need to be estimated to accommodate consumers' heterogeneity in preferences, thereby yielding more precise results.

Keywords: Apples, choice experiment, attribute non-attendance, Golden, Manubles, Spain, willingness to pay.