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**Effect of Panel Type and Ethnicity on Apples in Singapore Using Temporal  
Dominance Method**

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## Abstract

Recently, there has been an increased in oral processing studies focusing on the detection of changes in sensational attributes of food product in real time. However, the integration of sensational and emotional attributes with liking is a relatively new line of enquiry, yet if pursued may enable a deeper understanding of the sensory and emotional experience of consumers. This study successfully trials a new system combining temporal dominance of sensation (TDS), emotion (TDE) and liking (TDL) to examine the impact of training and ethnicity on the real time sensory evaluation of popular apple varieties currently being sold in Singapore. A short training (60 minutes) with food references was proven to be highly beneficial and had generated a higher dominance rate, faster first dominant attribute detected, lower variation in the dominant attribute selected and frequent complex textural attributes chosen, showing a better understanding of the terms used. The number of attributes used and dominant end time were however not affected by training. Contrary to TDE, a positive emotional or sensational attribute dominant did not relate to a direct relationship with liking. Non-dominant sensational or emotional attributes might have interfered in the liking observed. Training aside from improving the understanding of attributes used was also found to close the gap between hedonic scores and frequency liking counts. Ethnicity effects were subsequently examined using a Semi Trained Panel consisting of 8 Chinese, 7 Indian and 6 Malay with differing results observed. Chinese were more expressive and positive in the attributes chosen in TDS and TDE while Malay was the opposite. *Fibrous* (Chinese and Indian) and *floral* (Chinese) were picked up more readily by different ethnicities. Differences in product where Granny Smith evoked disliking in Malay and Indian, was positively rated by Chinese. These variations could mainly be due to differences in cultural practises and diet. The incorporation of TDS and TDL provided better product understanding than the narrow hedonic range obtained. Furthermore, the mapping of TDS, TDE and TDL curves suggested the ability to condense information allowing dynamic relation to be drawn in a single graph. However, due to the qualitative nature of the graphs, the interpretation of result might be subjective.

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