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

A thesis presented in fulfilment of the requirements for the degree of

MASTER OF FOOD TECHNOLOGY

at Massey University, Albany

New Zealand.

Kee Wen Jia

2016

## **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.

## **Acknowledgement**

I would like to express my upmost sincere appreciation and gratitude to my supervisors Dr Kylie Foster, Dr Jasmine Leong and Dr John Grigor who are ever so supportive, patient and spurred me to be clearer in my writing. Also to Associate Professor Marie Wong who agreed to help me with my last lap of the thesis submission. Thank you for all your help and support throughout this duration. Without all of you, this endeavour would not have been possible.

I will like to acknowledge the Ministry of Business, Innovation and Employment (MBIE), New Zealand for all the financial support of this project. This study was a part of the wider of the MBIE funded research on 'Health and Asian Food Choices'. Also, to Singapore Polytechnic and Food Innovation and Resource Centre (FIRC) for allowing me the usage of the facilities to complete this study.

I would like to thank my closest family, my parents and siblings for all the love, support and encouragement to spur me on. I will not be who I am today without their nurture. Also to all my close friends, thank you for being there when I needed a break from all the work.

Also, an appreciation to SenseAsia 2016 committee for giving me the chance to present my poster titled 'Ethnicity as a predictor of temporal affective measure in apples' consisting part of my results from this study.

Last but not least, thank you to my subjects for their time. Without them, there will be no data for this report.

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