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DEVELOPMENT
OF A BAKERY SNACK FOR EXPORT
FROM NEW ZEALAND TO MALAYSIA

A thesis
presented in partial fulfilment of
the requirement for the degree of
Doctor of Philosophy in Product Development

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1987
The use of consumers in the product development system for developing a food product was investigated. The investigation studied the techniques suitable for use with consumers and how well the development system worked in a cross-cultural situation. A bakery snack was developed for export from New Zealand to Malaysia, targeted at two major ethnic groups, the Malays and Chinese.

Initial market research (including a consumer survey and a focus group) provided general information on the eating of snacks by the Malays and the Chinese. Multidimensional scaling also provided general information on their perceptions of bakery snacks and uncovered an area for further development work. The initial market research findings indicated that the Malays and Chinese were similar in their perceptions and preferences of bakery snacks. Their purchasing patterns of bakery products from bread and cake shops were somewhat different. Bread and cake were more popular among the Malays, while the Chinese bought more filled buns and curry puffs.

Consumers generated 100 new product ideas for bakery snacks using brainstorming and nominal group technique. Both techniques were found to be useful under different conditions. The product ideas were reduced to seven using a series of quantitative techniques. The final selection of a macaroni and minced meat pie for further development was made by Malay and Chinese consumer groups.

Formulation of the pie was studied, using sensory profiling with fixed "ideals", by a small panel in New Zealand. The panel consisted of Malaysian students who had been in New Zealand for one or two years. Data obtained from the sensory profiling were used to derive empirical equations relating sensory attributes and acceptability to ingredient levels, so that the formulation could be guided quickly and systematically. The final product was consumer tested in Malaysia using a central location test, focus groups and sensory profiling.
Consumer input was useful in every stage of the development of the product. Their input was particularly important during the initial market research, the formulation stage and product testing. It was concluded that consumers were best utilised in as many stages of the development of a consumer product as possible, using groups of 10-30 people. Most techniques were found suitable for cross-cultural research. Exceptions occurred where questionnaires were involved (i.e. the initial consumer survey and the central location test) where it was found that Malays were reluctant to answer questions. Results from the different techniques at the various stages of the project correlated well with few exceptions.

The pie developed was acceptable to Malaysians, both Malays and Chinese, but improvements are still necessary, particularly in the sensory properties before test marketing. The beef flavour was too strong and could possibly be reduced by decreasing the beef content and replacing it with textured vegetable proteins.
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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ABSTRACT</strong></td>
<td>ii</td>
</tr>
<tr>
<td><strong>ACKNOWLEDGEMENTS</strong></td>
<td>iv</td>
</tr>
<tr>
<td><strong>TABLE OF CONTENTS</strong></td>
<td>v</td>
</tr>
<tr>
<td><strong>LIST OF TABLES</strong></td>
<td>xi</td>
</tr>
<tr>
<td><strong>LIST OF FIGURES</strong></td>
<td>xiii</td>
</tr>
<tr>
<td><strong>LIST OF APPENDICES</strong></td>
<td>xvi</td>
</tr>
<tr>
<td><strong>CHAPTER</strong></td>
<td></td>
</tr>
<tr>
<td>1. <strong>PRODUCT DEVELOPMENT AND THE CONSUMER</strong></td>
<td></td>
</tr>
<tr>
<td>1.1 Introduction</td>
<td>1</td>
</tr>
<tr>
<td>1.2 Food Product Development</td>
<td>3</td>
</tr>
<tr>
<td>1.3 Consumer Input in the Product Development System</td>
<td>5</td>
</tr>
<tr>
<td>1.4 The Project Objectives</td>
<td>8</td>
</tr>
<tr>
<td>2. <strong>PROJECT METHODS</strong></td>
<td>10</td>
</tr>
<tr>
<td>2.1 The Method of Product Development</td>
<td>10</td>
</tr>
<tr>
<td>2.2 Preliminary Desk Study in New Zealand</td>
<td>12</td>
</tr>
<tr>
<td>2.2.1 Product areas for further investigation</td>
<td>12</td>
</tr>
<tr>
<td>2.2.2 Food habits and taboos</td>
<td>13</td>
</tr>
<tr>
<td>2.2.3 Image of local vs imported foods</td>
<td>13</td>
</tr>
<tr>
<td>2.2.4 Product form</td>
<td>14</td>
</tr>
<tr>
<td>2.2.5 Lack of refrigeration and baking facilities</td>
<td>14</td>
</tr>
<tr>
<td>2.2.6 Local competition</td>
<td>14</td>
</tr>
<tr>
<td>2.2.7 Summary of desk study</td>
<td>15</td>
</tr>
<tr>
<td>2.3 Screening</td>
<td>15</td>
</tr>
<tr>
<td>2.3.1 Literature review</td>
<td>16</td>
</tr>
<tr>
<td>2.3.2 Selection of techniques for screening</td>
<td>18</td>
</tr>
<tr>
<td>2.3.3 Selection of factors for screening</td>
<td>19</td>
</tr>
<tr>
<td>2.3.4 Sequential screening</td>
<td>20</td>
</tr>
<tr>
<td>2.3.5 Checklist screening</td>
<td>21</td>
</tr>
<tr>
<td>2.3.6 Probability screening</td>
<td>22</td>
</tr>
<tr>
<td>2.4 The Method of Formulation</td>
<td>23</td>
</tr>
<tr>
<td>2.4.1 Selection of raw materials</td>
<td>24</td>
</tr>
<tr>
<td>2.4.2 Formulation development</td>
<td>25</td>
</tr>
<tr>
<td>2.5 Production Trial</td>
<td>28</td>
</tr>
<tr>
<td>2.6 Costing and Pricing</td>
<td>30</td>
</tr>
<tr>
<td>2.6.1 Manufacturing costs</td>
<td>30</td>
</tr>
<tr>
<td>2.6.2 Distribution and selling costs</td>
<td>30</td>
</tr>
</tbody>
</table>
3. ATTITUDES AND BEHAVIOUR OF MALAYSIANS TOWARDS SNACK FOODS

3.1 Use of Consumer in Market Research
3.2 Preliminary Focus Group
  3.2.1 The use of focus groups
  3.2.2 Experimental method
  3.2.3 Discussion of product areas
    3.2.3.1 Local traditional cakes (kuih)
    3.2.3.2 Pastry products
    3.2.3.3 Cake/biscuit mixes
    3.2.3.4 Special variety breads
    3.2.3.5 European-style cakes
    3.2.3.6 Pastry dough for both consumer and caterer
    3.2.3.7 General comments by participants
  3.2.4 Conclusions from the focus group
3.3 Survey of Malaysian Snacking Habits
  3.3.1 Consumer survey objectives
  3.3.2 Survey method
    3.3.2.1 Design of survey questionnaire
    3.3.2.2 Selection and training of interviewers
    3.3.2.3 Pilot survey
    3.3.2.4 Organisation of the survey
    3.3.2.5 Coding of results
  3.3.3 Survey sample of respondents
    3.3.3.1 Ethnic group and sex
    3.3.3.2 Age group
    3.3.3.3 Income group
  3.3.4 General snacking habits
    3.3.4.1 Number of respondents who snacked
    3.3.4.2 Frequency of snacking
    3.3.4.3 Situations for snacking
    3.3.4.4 Types of snacks eaten
    3.3.4.5 Places where snacks were bought
    3.3.4.6 Homemade snacks
  3.3.5 Attitudes
    3.3.5.1 Attitudes towards eating of snacks
    3.3.5.2 Attitudes to bread and cake shops
4. PERCEPTIONS OF BAKERY SNACKS BY MALAYS AND CHINESE IN MALAYSIA

4.1 Selection of Perceptual Mapping Technique
4.2 Multidimensional Scaling
  4.2.1 Application of MDS to food products
  4.2.2 Application of MDS to cross-cultural research
4.3 Literature Review on the Methodology for MDS
  4.3.1 Data collection for MDS
  4.3.2 Dimensionality of an MDS configuration
  4.3.3 Interpretation of axes
    4.3.3.1 Internal methods of interpretation
    4.3.3.2 External methods of interpretation
4.4 Experimental Method
  4.4.1 Selection of techniques for MDS
  4.4.2 Selection of the consumers and the place for MDS
  4.4.3 Data collection for 12 products
  4.4.4 Data collection for 18 products
  4.4.5 Preference testing with panelists in New Zealand and consumers in Malaysia
4.5 Analysis of Data
  4.5.1 MDS analysis
  4.5.2 Dimensionality of MDS configuration
  4.5.3 Interpretation of axes
    4.5.3.1 External interpretation of axes by subjects
    4.5.3.2 Hierarchical clustering
    4.5.3.3 Internal subjective interpretation
  4.5.4 Comparison of configurations using Procrustes analysis
4.6 Results
  4.6.1 Comparison between ethnic groups
  4.6.2 Comparison between KYST and INDSCAL configurations
4.6.3 Comparison between 12 and 18 product space
4.6.4 Preference result
  - 4.6.4.1 Preference of consumers in Penang
  - 4.6.4.2 Preference of pseudo-consumer panellists and consumers in Kuala Lumpur

4.7 Conclusions

5. USE OF CONSUMERS IN IDEA GENERATION AND SCREENING
5.1 Introduction
5.2 Idea Generation
  - 5.2.1 Literature review - use of consumers in idea generation
  - 5.2.2 Experimental method
    - 5.2.2.1 Organisation of the idea generation groups
    - 5.2.2.2 Brainstorming
    - 5.2.2.3 Nominal group technique
  - 5.2.3 Discussion of results
5.3 Screening
  - 5.3.1 Use of consumers in the screening process
  - 5.3.2 Experimental method
5.4 Conclusions

6. FORMULATION AND PRODUCT DESIGN
6.1 Introduction
6.2 Use of Sensory Evaluation in Product Development
  - 6.2.1 Use of panels in sensory evaluation
  - 6.2.2 Bridging the gap between "expert" and consumer panels
6.3 Use of Scales in Sensory Evaluation
6.4 Cross-cultural Sensory Perception
6.5 The Experimental Method for Sensory Evaluation and Product Formulation
  - 6.5.1 Type of panels
  - 6.5.2 Recruitment of panelists
  - 6.5.3 Method of sensory analysis
  - 6.5.4 Development of sensory attributes
  - 6.5.5 Training of panelists
  - 6.5.6 Use of "ideal" point on the line scale
6.5.7 Use of sensory testing in formulation
6.5.8 Data analysis

6.6 Results of Sensory Testing in Formulation
  6.6.1 Ideals
  6.6.2 Mixture design
  6.6.3 Factorial experiment
  6.6.4 Attribute and acceptability scores from pseudo-consumer panelists in New Zealand and consumers in Kuala Lumpur

6.7 Discussion
  6.7.1 Comparison of the two methods of analysing attributes and ideal scores in linear scaling
  6.7.2 Use of empirical equations in sensory evaluation
  6.7.3 Comparison of the sensory evaluation by pseudo-consumer panel and consumer panel

6.8 Conclusions

7. PRODUCT TESTING IN A CROSS-CULTURAL ENVIRONMENT
  7.1 Literature Review
  7.2 Selection of Techniques for Product Testing
  7.3 Focus Groups in Product Testing
    7.3.1 Experimental method
    7.3.2 Results
      7.3.2.1 Comparison between Malay and Chinese women
      7.3.2.2 Comparison between Malay and Chinese students
  7.4 Central Location Test
    7.4.1 Organisation of the central location test
    7.4.2 The interview process
    7.4.3 Problem of rejection in the central location test
    7.4.4 Analysis of results
    7.4.5 Profile of respondents
    7.4.6 Comparison between ethnic groups on acceptability of the pie
    7.4.7 Retail outlet
7.4.8 Buying intentions and proposed frequency of purchase
7.4.9 Discussion of central location test results
7.4.10 Marketing information from product testing
7.5 Discussion of Results from Central Location Test, Focus Groups and Sensory Profiling
7.6 Conclusion

8. THE USEFULNESS OF CONSUMERS AT DIFFERENT STAGES IN THE PRODUCT DEVELOPMENT PROCESS
8.1 Comparison of Market Research Techniques in the Initial Stages of Product Development
8.2 Use of Consumers in Idea Generation and Screening
8.3 Sensory Evaluation Method to Guide Formulation of Food Products
8.4 Comparison of Central Location Test, Focus Group and Sensory Profiling in Product Testing
8.5 The Stages at which Consumers are most Useful in Product Development
8.6 The Techniques Suited for Use by Consumers, particularly in a Cross-cultural Situation
8.7 Recommendations for Future Work
# LIST OF TABLES

1.1 Comparison of expert vs consumer panels for product research 7
1.2 Consumer panels in product development 8
2.1 Techniques for product selection and evaluation 17
2.2 Percentage contribution of costs to the manufacture of a pie 30
3.1 Respondent distribution by ethnic group and age group 42
3.2 Respondent distribution by ethnic group and income group 42
3.3 Frequency of snacking 44
3.4 Situations for snacking 45
3.5 Types of snacks eaten for different occasions 46
3.6 Places where snacks were bought 47
3.7 Type of food last bought at a bread and cake shop 47
3.8 Types of homemade snacks eaten 48
3.9 Types of imported snacks bought 48
3.10 Opinion of respondents on whether or not bakery products should be sold through canteens, sundry shops and hawkers 52
4.1 Methodology used in the analysis of cross-cultural differences 62
4.2 Mean dimension weights from INDSCAL 91
5.1 Internal and external sources of product ideas 101
5.2 Techniques for product idea generation 102
5.3 Number of brainstorming and nominal group technique sessions for each ethnic group 108
5.4 Results of idea generation sessions 109
5.5 Results of consumer screening of product ideas 112
6.1 Recommended sensory test methods for specific types of applications 117
6.2 Advantages and disadvantages of category, line and ratio scales 123
6.3 Ideal scores for attributes in sensory evaluation of pie 136
6.4 Results of mixture design 138
6.5 Regression equations obtained from mixture design 138
6.6 Results of second experiments on pie filling
6.7 Comparison of actual with predicted result
6.8 Mean sample scores of sensory attributes from consumers in Malaysia and pseudo-consumer panelists in New Zealand
6.9 Correlation coefficients of sample scores of product profile
6.10 Range of scores and corresponding ratio and interval scores for different ideals
6.11 Standard deviation of the ratio and interval scores for attributes with different ideals
6.12 CV values for pseudo-consumer and consumer panelists
7.1 Sequence of topics used for the focus group discussion
7.2 Profile of respondents in central location test
7.3 Overall liking of pie
7.4 Age group and liking of the pie by respondents
7.5 Reasons for liking pie
7.6 Response to flavour of pie
7.7 Reasons for liking flavour of pie
7.8 Retail outlets preferred for the pie
7.9 Buying intentions
7.10 Proposed frequency of purchase
8.1 Results of initial market research
LIST OF FIGURES

1.1 Population distribution of Malaysia by ethnic groups .................................................. 2
1.2 A systematic process for product development ............................................................ 4
2.1 Product development process in project ........................................................................ 12
2.2 Reduction of number of product ideas through quantitative screening ....................... 19
2.3 Scheme of formulation .................................................................................................. 26
2.4 Process flowchart for production of pie ......................................................................... 29
2.5 Flowchart showing the major stages of the project ....................................................... 31
3.1 Distribution of respondents based on their snacking habits ......................................... 43
3.2 Respondent distribution by their opinion on the question "How important is the price of the snack?" .................................................. 50
3.3 Respondent distribution by their opinion on the question "How important is it that the snack is good for you?" .................................................. 50
3.4 Respondent distribution by their opinion on the question "How important is it that the snack does not need any preparation?" .................................................. 50
3.5 Respondent distribution by their opinion on the question "How important is it that the snack tastes good?" .................................................. 50
3.6 Respondent distribution by their opinion on the question "How important is it that the snack is not fattening?" .................................................. 50
3.7 Respondent distribution by their opinion on the question "How important is it that the snack is easy to obtain?" .................................................. 50
3.8 Respondent distribution by their response to the statement "Everything is delicious to eat" .................................................. 51
3.9 Respondent distribution by their response to the statement "The food is good for you" .................................................. 51
3.10 Respondent distribution by their response to the statement "I like the smell of bread and cake shops" .................................................. 51
3.11 Respondent distribution by their response to the statement "There is a variety of food in the shops" .................................................. 51
3.12 Respondent distribution by their response to the statement "The foods sold in bread and cake shops are expensive"
3.13 Respondent distribution by their response to the statement "Bread and cake shops have something different to offer"
4.1 Stress vs dimension plot for 12 products (KYST solution for all subjects)
4.2 Stress vs dimension plot for 18 products (KYST solution for all subjects)
4.3 Contour diagram of hierarchical clustering plotted in multidimensional space for Malays (dimension 2 vs dimension 1)
4.4 Contour diagram of hierarchical clustering plotted in multidimensional space for Malays (dimension 3 vs dimension 1)
4.5 Contour diagram of hierarchical clustering plotted in multidimensional space for Chinese (dimension 2 vs dimension 1)
4.6 Contour diagram of hierarchical clustering plotted in multidimensional space for Chinese (dimension 3 vs dimension 1)
4.7 Procrustes statistics
4.8 Plot of multidimensional space for all subjects - KYST (dimension 2 vs dimension 1)
4.9 Plot of multidimensional space for all subjects - KYST (dimension 3 vs dimension 1)
4.10 Plot of multidimensional space for Malays - KYST (dimension 2 vs dimension 1)
4.11 Plot of multidimensional space for Malays - KYST (dimension 3 vs dimension 1)
4.12 Plot of multidimensional space for Chinese - KYST (dimension 2 vs dimension 1)
4.13 Plot of multidimensional space for Chinese - KYST (dimension 3 vs dimension 1)
4.14 Plot of INDSCAL dimension weights for 18 products (dimension 2 vs dimension 1)
4.15 Plot of INDSCAL dimension weights for 18 products (dimension 3 vs dimension 1)
6.1 Sensory evaluation form for pie
6.2 Experimental points for mixture design
6.3 Factorial experiment for pie bottom
6.4 Results of the second experiment on the pie bottom pastry
7.1 Questionnaire for central location test
LIST OF APPENDICES

2.1 Factors important in screening 200
2.2 Sequential screening of product ideas 201
2.3 Products remaining after sequential screening 202a
2.4 Checklist screening 203
2.5 Products remaining after checklist screening 205
2.6 Method of probability screening 206
2.7 Probability screening tables 207
3.1 Description of kuihs used in initial focus group 212
3.2 Sample copy of survey questionnaire 213
3.3 Purchasing patterns of Malays and Chinese from bread and cake shops 218a
3.4 Places where bakery snacks were bought 218a
4.1 Description of products selected for MDS 219
4.2 An example of the diagram given to subjects for the identification of axes 220
4.3 Plot of multidimensional space for all subjects - INDSCAL (dimension 2 vs dimension 1) 221
4.4 Plot of multidimensional space for all subjects - INDSCAL (dimension 3 vs dimension 1) 222
4.5 Plot of multidimensional space for Malays - INDSCAL (dimension 2 vs dimension 1) 223
4.6 Plot of multidimensional space for Malays - INDSCAL (dimension 3 vs dimension 1) 224
4.7 Plot of multidimensional space for Chinese - INDSCAL (dimension 2 vs dimension 1) 225
4.8 Plot of multidimensional space for Chinese - INDSCAL (dimension 3 vs dimension 1) 226
4.9 Plot of multidimensional space for Malays and Chinese - KYST (dimension 2 vs dimension 1) 227
4.10 Plot of multidimensional space for Malays and Chinese - KYST (dimension 3 vs dimension 1) 228
4.11 Plot of multidimensional space for Malays and Chinese - INDSCAL (dimension 2 vs dimension 1) 229
4.12 Plot of multidimensional space for Malays and Chinese - INDSCAL (dimension 3 vs dimension 1) 230
4.13 Plot of multidimensional space for Malays with KYST and INDSCAL superimposed (dimension 2 vs dimension 1)

4.14 Plot of multidimensional space for Malays with KYST and INDSCAL superimposed (dimension 3 vs dimension 1)

4.15 Plot of multidimensional space for Chinese with KYST and INDSCAL superimposed (dimension 2 vs dimension 1)

4.16 Plot of multidimensional space for Chinese with KYST and INDSCAL superimposed (dimension 3 vs dimension 1)

4.17 Plot of multidimensional space for Malays - KYST - with 12 and 18 products superimposed (dimension 2 vs dimension 1)

4.18 Plot of multidimensional space for Malays - KYST - with 12 and 18 products superimposed (dimension 3 vs dimension 1)

4.19 Plot of multidimensional space for Malays - INDSCAL - with 12 and 18 products superimposed (dimension 2 vs dimension 1)

4.20 Plot of multidimensional space for Malays - INDSCAL - with 12 and 18 products superimposed (dimension 3 vs dimension 1)

4.21 Plot of multidimensional space for Chinese - KYST - with 12 and 18 products superimposed (dimension 2 vs dimension 1)

4.22 Plot of multidimensional space for Chinese - KYST - with 12 and 18 products superimposed (dimension 3 vs dimension 1)

4.23 Plot of multidimensional space for Chinese - INDSCAL - with 12 and 18 products superimposed (dimension 2 vs dimension 1)

4.24 Plot of multidimensional space for Chinese - INDSCAL - with 12 and 18 products superimposed (dimension 3 vs dimension 1)

6.1 Initial sensory evaluation form

6.2 Method of sensory evaluation

6.3 Standard deviation of sensory attributes

7.1 Reasons for disliking pie

7.2 Reasons for disliking flavour of pie