Appendix A - Thank you list

Name	Organisation
Egan, Debbie	Challenge Foundation
Morenos Nick	Australian Apple & Pear Growers Association
Schaefer, Annette	Challenge Foundation
Burton, Kathryn	Australian Horticultural Corporation
Huber, Tim	Australian Horticultural Corporation
Egan, Kevin	Sydney Market Authority
Millican, Val	National Federation of Blind Citizens of Aust. Inc.
Grillo, Vince	Bi-Lo Newcastle
Williams, Ray	O'Briens Fruit Market , Raymond Terrace
Eastman, Dennis and Pauline	Sinclair and Jenkins
Dray, Delia	NSW Dept. of Agriculture, Orange
Moody, Tony	NSW Dept. of Agriculture, Flemington
Mellor, Wendy	Frank Small & Associates (Aust) Pty. Ltd
McKay, John	Australian Horticultural Corporation
Bennett, Richard R.	Australian Horticultural Corporation
McEvilly, Gerard	Australian Horticultural Corporation
Chittick, Mark	
Salvestrin, John	NSW Dept. of Agriculture, Griffith
Ledger, Scott	Qld. Dept. of Primary Industries
Bagshaw, John	Qld. Dept. of Primary Industries
Dodds, Jan	National Federation of Blind Citizens of Aust. Inc.
Schmits, Jenny	Royal Blind Society, Low Vision Centre
May, Sue	National Food Authority - Canberra
Richards, Jan	Librarian - NSW Dept. of Agriculture, Orange
Tomlin, Ted	Frankston, Victoria
Lindsay, Stuart	QDPI, Applethorpe
Critchley, Peter	Batlow Fruit Co-op Ltd.
Pagett, Nick	Batlow Fruit Co-op Ltd.
Nightingale, Greg	Nightingale Brothers
Downie, Patrick	National Federation of Blind Citizens of Aust. Inc.
Mavin, Lee-Ann	Hunter Fresh Produce
Sayle, Tony	Jenkins Labels Limited, Auckland, New Zealand

Armstrong, Cliff	Orange
Lawrence, Barbara	
Lawrence, Chris	
Lawrence, David	

Appendix B - Definitions

Term	Definition
brand or brand labelled	an apple marketed by an apple packer, identified by the packer's name on an adhesive label on the apple.
labelled apples	apples with an adhesive brand label on them.
labelled displays	displays of apples containing brand labelled apples
non-labelled display	the display consists entirely of apples with no adhesive brand labels on them.
one-only-label display	the display consists of apples all of which have an identical adhesive brand label on them.
single-brand display	the entire display consists of apples all of which have an identical adhesive brand label on them or it consists of apples all of which are non-labelled.
more-than-one-label display	the display consists of apples of different brands all of which have adhesive brand labels on them.
multi-brand display	the display consists of apples of different brands all of which have adhesive brand labels on them.
non-labelled and one-only-label display	the display consists of non-labelled apples together with apples all of which have an identical adhesive brand label on them.
non-labelled and more-than-one -label display	the display consists of non-labelled apples together with apples of different brands all of which have adhesive brand labels on them.
loose apples	displays of apples where the apples are not pre-packaged.
Varietal labels	Varietal apple labels (adhesive) contain the name of the variety only and have no indication as to who the apple grower or packer may have been.

Appendix C - The interview questionnaire

Table C.1

The interview questionnaire

Q1.   Are you the Owner or the Manager?

Q2.   Are you the usual buyer?

Q3.   Most of the time when you buy apples, how do you do it?

1. In person   2. Use a wholesaler/buyer

Q4.   In the last three months how often have you stocked apples with sticky **brand-name** labels on them? You know, sticky **brand-name** labels with brand names like "Nightingale Bros" or "Top-Qual" written on them.

Q5.   In the last three months how many times have customers asked you to stock a particular **brand** of apples, not "Red-Delicious" or "Jonathans", but say "Black Diamond" or "Pickworths"?

Q6.   In the last three months how often have you intentionally given shoppers a choice of **brand** by displaying the same **variety** of loose apples with different **brand-name** stickers on them in different displays at the same time. Say loose "Batlow" Red-Delicious in one display and loose "Nightingale" Red-Delicious in another, both with their **brand-name** labels on them?

Q7.   The last time you bought apples did you look for, or ask for, apples with a specific **brand-name** label on them?

Q8.   In the last three months, when you bought apples, how often did you look for, or ask for, apples with a specific **brand-name** label on them?

Q9.   The last time you bought apples with **brand-name labels** on them do you think you paid a premium for them?

If response is "no", go to Q11.

Q10.   Did you pay the premium mainly because of the **brand-name labels** or was there another reason?

Q11.   In the last three months, when you bought apples with **brand-name labels** on them, in general, do you think you paid a premium for them?

If response is "no", go to Q13.

Q12.   Did you pay the premium mainly because of the **brand-name labels** or was there another reason?

Q13.   In the last three months how often have you had posters in your shop for somebody's apples, you know, like "Batlow" or someone like that?

Q14.   In the last twelve months how many times did the most frequently visiting **apple brand** rep call on you, you know, like a rep from "Joyson" or a rep from "Top-Qual" or someone like that?

Q15.   Do you know if any of the **apple brands** advertise a consumer information telephone number?

Table C.1 Continued

The interview questionnaire

Q16.   Which is more important to you?

1. an apple with a **brand-name label** on it; or

2. an apple with an **apple variety name label** on it.

Q17.   If I asked you which apples with **brand labels** on them were your best seller in each variety in the last three months how would you work it out?

Q18.   As a retailer are there any disadvantages in carrying apples with sticky **brand-name** labels on them, you know, **brand-name** labels with brand names like "Batlow" or "Black Diamond"?

Q19.   As a retailer what benefits do you think you get from carrying apples with sticky **brand-name** labels on them, you know, **brand-name** labels with brand names like "Batlow" or "Black Diamond"?

Q20.   The last time you bought apples in what order did you consider the following four things?

the **price** of the apple

the **variety** of the apple

the **size** of the apple

the **brand-name** on the sticky label on the apple

Thanks, now I would like you to put a circle around the name of the first item. Next, I would like you to put an "X" on each of the other three scales to show me how you think they rate compared to the first one.

Appendix D - The interview response sheet

Table D.1

The interview response sheet

Outlet No:

Q1. The respondent is the: Owner   Manager   Other

(Circle correct answer)

Q2. Is the respondent the usual buyer?

"0" = Negative   "1" = Affirmative.

Q3.   1   2

Q4.

|------------------------|------------------------|------------------------|------------------------|

ALL	MORE	ABOUT	A	NEVER
THE	OFTEN	HALF	FEW	
TIME	THAN NOT	THE TIME	TIMES	

Q5.

Number of times:

If ever, most common Brand Name:

Q6.

|------------------------------|------------------------------|------------------------------|------------------------------|

ALL   MORE   ABOUT   A   NEVER

THE   OFTEN   HALF   FEW

TIME   THAN NOT   THE TIME   TIMES

Q7.   NO   YES   DON'T KNOW

If "YES" Brand Name:

"0" = Negative   "1" = Affirmative   "2" = Don't know.

Q8.

|------------------------------|------------------------------|------------------------------|------------------------------|

ALL   MORE   ABOUT   A   NEVER

THE   OFTEN   HALF   FEW

TIME   THAN NOT   THE TIME   TIMES

If ever, most common Brand Name:

Q9.

"0" = Negative   "1" = Affirmative   "2" = Don't know.

Q10.

"0" = Negative   "1" = Affirmative   "2" = Don't know.

Table D.1 Continued

The interview response sheet

Q11.

"0" = Negative   "1" = Affirmative   "2" = Don't know.

Q12.

"0" = Negative   "1" = Affirmative   "2" = Don't know.

Q13.

|---------------------------|---------------------------|---------------------------|------------------------|

ALL	MORE	ABOUT	A	NEVER
THE	OFTEN	HALF	FEW	
TIME	THAN NOT	THE TIME	TIMES	

If ever, most common Brand Name:

Q14.

Number of times:

If ever, most common Brand Name:

Q15.   NO   YES   DON'T KNOW

If "YES" Brand Name:
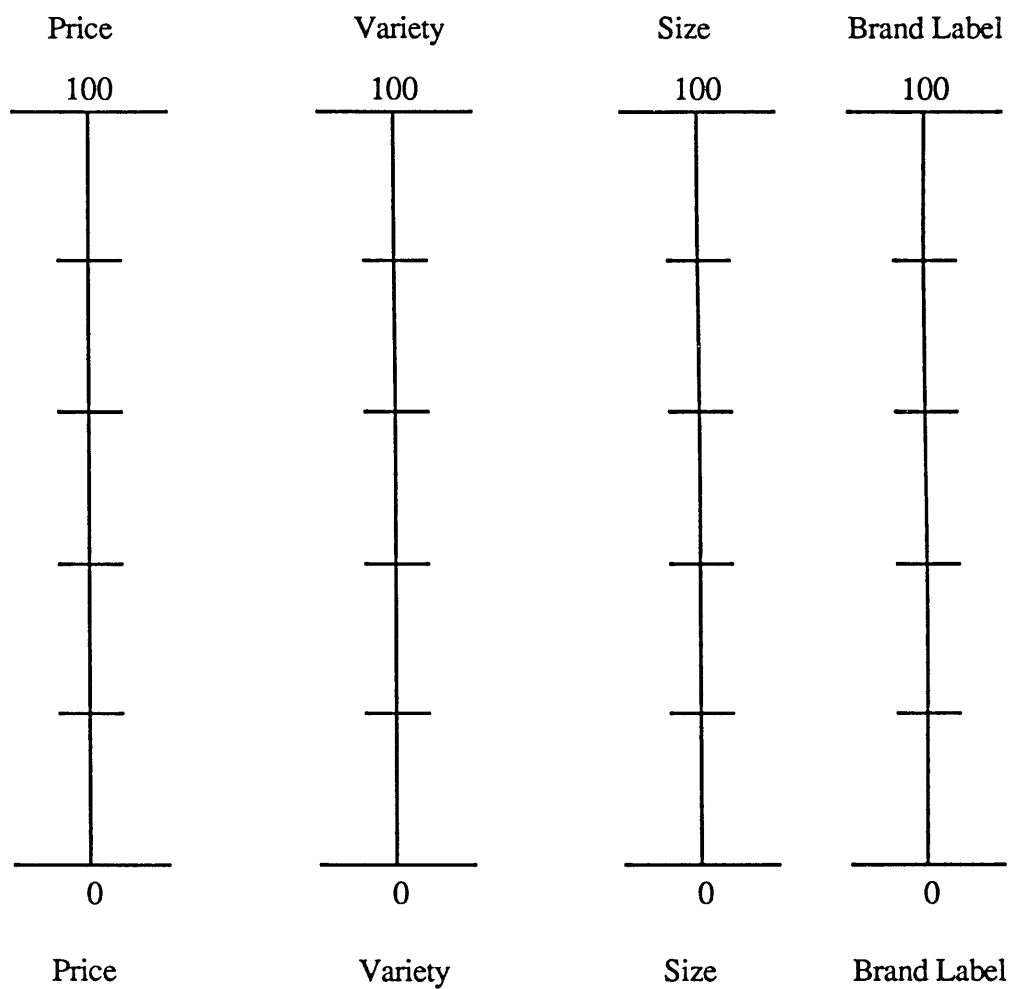
"0" = Negative   "1" = Affirmative   "2" = Don't know.

Q16.   1   2

Q17 to Q19 inclusive

These were conversation responses.

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Table D.1 Continued

Interview response Question 20

Price	Variety	Size	Brand Label
100	100	100	100
0	0	0	0
Price	Variety	Size	Brand Label

Appendix E - Observation by the researcher

Table E.1

Observation by Researcher

Date:
<!-- boxes with 93 at right -->

Postcode:
<!-- four boxes -->

Outlet No:
<!-- one box -->

Q1. Is the outlet a supermarket
"0" = Negative   "1" = Affirmative.
<!-- one box -->

Q2. How many displays of apples were there in the retail outlet?
<!-- one box -->

Note: Walk around the store and complete Q2 prior to continuing to Question 3.

Note: This form was produced in landscape and allowed for a maximum of twenty-one apple displays in a single retail outlet. This reproduction allows for only four apple displays.

Table E. 1 Continued

Observation by Researcher

Question 3.

Complete one column for each display.

3.1 Display No.
☐ 1   ☐ 2   ☐ 3   ☐ 4

The number of displays must equal the number recorded for Q.2

3.2 Variety No.
☐   ☐   ☐   ☐

Not likely to be more than one variety in each display. Choose variety No. from attached varieties table.

3.3 Small or large sized apples
"0" = Not sure   "1" = Small   "2" = Large
☐   ☐   ☐   ☐

3.4 Loose
"0" = Negative   "1" = Affirmative.
☐   ☐   ☐   ☐

3.5 Pre-packed
"0" = Negative   "1" = Affirmative.
☐   ☐   ☐   ☐

3.6 Non-labelled
☐   ☐   ☐   ☐

"0" = Negative   "1" = Affirmative.   If response is "1" go to Q 3.12

Note: Provision was made for up to twenty one displays in each outlet.

Table E.1 Continued

Observation by Researcher

3.7 Labelled **and** Non-labelled
"0" = Negative   "1" - Affirmative.

<!-- boxes -->

3.8 More than one label
"0" = Negative   "1" = Affirmative.

<!-- boxes -->

3.9 One only label

<!-- boxes -->

"0" = Negative   "1" = Affirmative.   Note: There should be only one affirmative response
for questions 3.8 and 3.9 per display

3.10 Brands in the display

<!-- boxes -->

Note: Choose the brand no. from the attached brand no. sheet.

Note: Provision was made for up to twenty one displays in each outlet.

Table E.1 Continued

Observation by Researcher

3.11 The number of varietal labels only rather than brand labels in the display.

Enter the actual count.

□ □ □ □

3.12 Price per kilo

□ □ □ □

3.13. Was there any visible point of purchase, brand specific, promotional material?

□ □ □ □

"0" = Negative   "1" = Affirmative.

Comment:

Q4. Was there any visible store wide, brand specific, promotional material?

□

"0" = Negative   "1" = Affirmative.

Comment:

Note: Provision was made for up to twenty one displays in each outlet.

Appendix F - The apples database

TABLE F1

The database design - Database tables

Table Number	Table Name
1	Brands
2	Displays
3	Interview
4	Pkg
5	Question20
6	Respondents
7	Size
8	Varieties

TABLE F2

The database design - the table 'Brands'

Column Name	Column Code	Data Description
Brand number	bno	dec/primary key (2)
Brand name	bname	char/not null (64)

TABLE F3

The database design - the table 'Varieties'

Column Name	Column Code	Data Description
Variety number	vno	dec/primary key (2)
Variety name	vname	char/not null (20)

TABLE F4

The database design - the table 'Size'

Column Name	Column Code	Data Description
Size	asize	dec/primary key (1)
Number of apples per kilo	num_kg	dec/not null (2)

TABLE F5

The database design - the table 'PKG'

Column Name	Column Code	Data Description
Display number	display_no	dec/primary key (2)
Outlet number	outlet_no	dec/primary/foreign key (3)
Price per kilo	kgprice	dec (5)

TABLE F6

The database design - the table 'Respondents'

Column Name	Column Code	Data Description
Outlet number	outlet_no	dec/primary key (3)
Post code	post_code	dec/not null (4)
Supermarket/Non-supermarket	supermarket	dec/not null (1)
Owner/manager	respondent	char/not null (7)
Usual buyer	buyer	dec/not null (1)
Buy personally/use agent	howbuy	dec/not null (1)
Number of apple displays sighted	displays	dec/not null (2)
Existence of storewide brand specific promotion	storewide	dec/not null (1)
The date the retail outlet visited	day	dec/not null (2)
If storewide brand specific promotion, which brand	brand	dec (2)

TABLE F7

The database design - the table 'Displays'

Column Name	Column Code	Data Description
Outlet number	outlet_no	dec/primary/foreign key (3)
Display number	display_no	dec/primary key (2)
Variety name	vno	dec/foreign key (2)
Size of apples in display 1 = small 0 = medium 2 = large	smallarge	dec/not null (1)
Loose apple display	loose	dec (1)
Pre-packaged display	prepacked	dec (1)
Were all the apples in the display non-labelled	nonlabelled	dec (1)
Were the apples in the display both labelled and non-labelled	labeland	dec (1)
Were there more than one brand of labelled apples in the display	more	dec (1)
Was there only one brand of labelled apples in the display	onelabel	dec (1)
The brand name of the first label in the display	brand1	dec (2)
The brand name of the second label in the display	brand2	dec (2)
The brand name of the third label in the display	brand3	dec (2)
The brand name of the fourth label in the display	brand4	dec (2)
The price of the apples per kilo	pricekg	dec (5)
The number of apples quoted per $x.00	nop	dec (2)
The price quoted for sale by number	priceno	dec (5)
Did the display have any "Brand" specific promotion material	brandpro	dec/not null (1)
If so what "Brand" was it	brandisp	dec (2)

Notes: 1. The fields "Loose" and "Prepacked" could and should have been the one field. This was just lack of practice in survey design.

TABLE F8

The database design - the table 'Interview'

Column Name	Column Code	Data Description
Outlet number	outlet_no	dec/primary/foreign key (3)
Question four	q4	dec/not null (3)
Question five	q5	dec/not null (2)
Question six	q6	dec/not null (3)
Question seven	q7	dec/not null (1)
Question eight	q8	dec/not null (3)
Question nine	q9	dec/not null (1)
Question ten	q10	dec (1)
Question eleven	q11	dec/not null (1)
Question twelve	q12	dec (1)
Question thirteen	q13	dec/not null (3)
Question fourteen	q14	dec/not null (1)
Question fifteen	q15	dec/not null (1)
Question sixteen	q16	dec/not null (1)

TABLE F9

The database design - the table 'Question20'

Column Name	Column Code	Data Description
Outlet number	outlet_no	dec/primary/foreign key (3)
The ranking of price	pr	dec/not null (1)
The importance of price	pi	dec/not null (3)
The ranking of variety	vr	dec/not null (1)
The importance of variety	vi	dec/not null (3)
The ranking of size	sr	dec/not null (1)
The importance of size	si	dec/not null (3)
The ranking of the label	br	dec/not null (1)
The importance of the label	bi	dec/not null (3)

Appendix G - Bivariate Chi-squared models

Table G1

Chi-squared test for non-supermarket retailers' attitudes towards brand labels and storewide brand specific promotion material

Attitude	SWBSPM		
	Yes	No	
Attitude >= 60	11	17	28
Attitude < 60	4	9	13
	15	26	41

Category	O	E	O - E	(O-E)sq	(O-E)sq/E
Cell 1.1	11	10.24	0.76	0.57	0.056
Cell 1.2	17	17.76	-0.76	0.57	0.032
Cell 2.1	4	4.76	-0.76	0.57	0.120
Cell 2.2	9	8.24	0.76	0.57	0.069
Total	41	41			0.278

x^ 0.278

Degrees of freedom 1

Table G2

Chi-squared test for non-supermarket retailers' attitudes towards brand labels and storewide brand specific promotion material

Attitude	SWBSPM		
	Yes	No	
Attitude = 100	7	11	18
Attitude = 0	1	16	17
	8	27	35

Category	O	E	O - E	(O-E)sq	(O-E)sq/E
Cell 1.1	7	4.11	2.89	8.33	2.024
Cell 1.2	11	13.89	-2.89	8.33	0.600
Cell 2.1	1	3.89	-2.89	8.33	2.143
Cell 2.2	16	13.11	2.89	8.33	0.635
Total	35	35			5.402

x^2 5.402

Degrees of freedom 1

Appendix H   Domestic apple varieties marketed in Australia

Variety number	Variety	Season	Notable characteristics	Life-cycle stage
1	Abas	early	sets heavily	maturity
2	Adina	mid	Qld. only	growth/maturity
3	Akane	early	good eating, short life	decline
4	Bonza	early/mid	heavy bearer	maturity/decline
5	Braeburn	mid/late	requires 5 picks	introductory
6	Cox's Orange Pippin	early/mid	highly regarded	almost extinct
7	Crofton	mid/late	low yield	decline
8	Delicious	mid	poor colour	decline
9	Democrat	late	Tas. only, export	decline
10	Earlidel	early	red delicious appearance	introductory
11	Fuji	late	sweet, terrific texture	growth
12	Gala	early	attractive, distinctive	growth
13	Golden Delicious	mid/late	bruise easily	maturity
14	Goldina	mid	Qld. only	growth
15	Granny Smith	mid/late	multi purpose	maturity/decline
16	Gravenstein	early/mid	biennial	decline
17	Jonagold	early/mid	promising variety	introductory
18	Jonathan	early	cannot compete with Gala	decline
19	Lady Williams	late	excellent keeper	growth
20	Mutsu	mid/late	vigorous	maturity
21	Pink Lady	late	excellent eating	growth
22	Red Delicious	mid	reliable	growth/maturity
23	Rome Beauty	mid/late	biennial	decline, nearly extinct
24	Starkrimson	mid/late	red delicious type	maturity
25	Sturmer	mid/late	popular export	decline
26	Summerdel	early/mid	Qld. only	growth
27	Sundowner	late	excellent eating	growth
28	Unknown			

Compiled from information sourced from:

Richard Bennett, Australian Horticultural Corporation.
Delia Dray, New South Wales Department of Agriculture.
Paul Miller, *Commercial Horticulture*, various issues.
Kathryn Burton, Australian Horticultural Corporation.

Appendix I   Domestic Australian apple brands sighted prior to and during the survey

Brand number	Brand name
1.	Batlow
2.	Nightingale Bros.
3.	Top - Qual Tasmania
4.	Black Diamond
5.	Pickworth's Finest
6.	Clemar
7.	Joyson
8.	Montague
9.	The Apple Orange
10.	Ellimatta Orchards - South Australia
11.	R.J Armstrong P/L
12.	Mountain Fresh - Inglewood
13.	Jef Tompson
14.	Red Rich Orchards
15.	Ladybird - Eastfield Orchards
16.	Manjimup Archway Orchards
17.	Super Froot - Orange N.S.W.

Compiled by the author.

Appendix J   The ranking of price, variety, size, and brand label, in retailers' purchase decisions

Table J1

The ranking of price, variety, size, and brand label, in non-supermarket retailers' purchase decisions

Rank	Price			Variety			Size			Brand label		
	Raw	Rf	Cdf	Raw	Rf	Cdf	Raw	Rf	Cdf	Raw	Rf	Cdf
First	18	.47	.47	24	.63	.63	5	.13	.13	4	.11	.11
Second	1	.03	.50	3	.08	.71	30	.79	.92	0	0	.11
Third	19	.50	1	11	.29	1	3	.08	1	0	0	.11
Fourth	0	0	1	0	0	1	0	0	1	34	.89	1
Total	38	1	1	38	1	1	38	1	1	38	1	1

Table J2

The ranking of price, variety, size, and brand label, in supermarket chain purchase decisions

Rank	Price			Variety			Size			Brand label		
	Raw	Rf	Cdf	Raw	Rf	Cdf	Raw	Rf	Cdf	Raw	Rf	Cdf
First	2	.67	.67	3	1	1	1	.33	.33	0	0	0
Second	0	0	.67	0	0	1	2	.67	1	0	0	0
Third	1	.33	1	0	0	1	0	0	1	0	0	0
Fourth	0	0	1	0	0	1	0	0	1	3	1	1
Total	3	1	1	3	1	1	3	1	1	3	1	1

Appendix K   Classification of interview and observation data for analysis purposes

Table K1

Classification of interview data for analysis

Question	Classification	Question	Classification
1	Nominal	11	Nominal
2	Nominal	12	Nominal
3	Nominal	13	Ratio
4	Ratio	14	Ratio
5	Ratio	15	Nominal
6	Ratio	16	Ordinal
7	Nominal	17, 18 & 19	Nominal
8	Ratio	20 Part 1	Ordinal
9	Nominal	20 Part 2	Ratio
10	Nominal		

Table K2

Classification of observation data for analysis

Question	Classification	Question	Classification
1	Nominal	3.7	Nominal
2	Ratio	3.8	Nominal
3.1	Nominal	3.9	Nominal
3.2	Nominal	3.10	Nominal
3.3	Nominal	3.11	Ratio
3.4	Nominal	3.12	Ratio
3.5	Nominal	3.13	Nominal
3.6	Nominal	4	Nominal

Appendix L Advantages and disadvantages to retailers of the stocking of brand labelled apples

Disadvantages

Consumers like but don't read

Don't help to sell. Quality sells

Kids eat them

Glue. But not many complaints

Some complaints re eating the label

Advantages

Prefer with labels. Look better

Batlow is well known

Packaging. Customers look for the apple

Customers love them. Kids especially

Yes. Don't have to explain to the customer where the apples are from. Anything with stickers is good

Help identify the apple

Brand identification

Display. Draws attention to where the fruit comes from

Batlow awareness

Presentation. Should be on everything. Kids.

Try to buy with labels if I can. Vitor sell better with label

Not only with apples but with vegetables also. Strong feeling that the industry should go further

Kids love them

Yes. People buy. Its makes a difference

If good quality it helps sell. If bad what's the use

Helps in price look-up

Attractive, people buy them. It doesn't matter what the label says. Kids love them

Never had a comment

Kids love the stickers

Kids love them

Had good Lady Williams but customers were buying poor dels with stickers on them instead

Customers only worry about the brand after trial. If ok buy again. Better to have them than not. Looks better.

Kids love them

Yes I want my own stickers

Adds colour

Retailers think it is an indication of quality

Most people go for Batlow. Batlow is well known

More presentable

Quite important because people are stupid. Buy the brand. We only carry the best so we only carry labelled fruit. Consumer knows its first grade if it has a sticker on it

Yes it identifies the area eg. Tasmania or Victoria

Comfortable warm feeling

Appendix M   Data integrity and the 'Apples' database

M.1   Introduction

This appendix details some of the integrity checks carried out on the observation survey data. The integrity of the data collected in the field was extensively investigated after it had been organised into a database prior to statistical testing. The integrity method derives from the author's accounting and systems background and was based upon the use of a SQL database. The specific database used was MSQL.

The *Apples* database (Appendix F) consists of eight tables, three of which exist primarily to provide input data to the other five. The three are: *Brands*; *Size* and; *Varieties*. The integrity of the data in these three tables was checked manually, as *Varieties*, the largest of the three tables has only twenty eight records (Appendix H).

The purpose of the integrity checks was to firstly ensure that the data collected and recorded in the field had been recorded correctly, and secondly that no mistakes had occurred in its transfer to the database. The survey forms required the researcher to complete each field even if it was negative. This was not always done. Upon transfer of the data from the survey forms to the database most of the discrepancies were blank fields.

This appendix has been included in this dissertation because of the importance the author places on the validity of the field data, and the lengthy period of time which was required to think through and develop routines which would verify its accuracy.

M.2   Question 1 - Is the outlet a supermarket?

The validity requirements for this question are:

1. The responses must be either '0' or '1'; and

2. The total number of responses must equal the number of outlets surveyed.

Two routines were run to count the number of outlets that were either supermarkets or non-supermarkets. As an example the following is the routine which listed the non-supermarkets and counted each non-supermarket outlet's apple displays:

```
{ cdi - orders outlets and counts the number of displays where the outlet is not a supermarket }
set print off
load apples
select outlet_no, count(display_no)
from displays d, respondents r
where d.outlet_no = r.outlet_no
and r.supermarket = 0
group by outlet_no
order by 1 asc
set print on
format total 2
set print off;
```

Supermarket outlets were identified during the field survey. This identification listing was manually checked against the listing produced from the database. There were no inconsistencies.

Table M.1		
Classification of outlets into supermarkets and non-supermarkets		
	Outlets	Displays
Supermarkets	13	70
Non-supermarkets	43	356
Totals	56	426

M.3   Question 2 - How many displays of apples were there in the retail outlet?

The validity requirements for this question are:

1. The number of displays of apples counted for an outlet at Question 2; is equal to
2. The sum of the displays recorded for that same outlet in Question 3.

The data for Question 2 is stored in the *Respondents* table while the data for Question 3 is stored in the *Displays* table. The following routine listed the relevant data.

```
[ cd1 - Compares the number of displays recorded in the 'Respondents' table with the total
  number of displays surveyed for each outlet and recorded on the 'Displays' table.
  NOTE: the MSQL function rule which states that when a function is used in a select clause
  all other items appearing in a that select clause must also be controlled by a function or
  grouping clause]
  set print off
  load apples
           select outlet_no, r.displays, count(display_no)
           from respondents r, displays d
           where r.outlet_no = d.outlet_no
                  group by r.outlet_no, r.displays
                  order by 1 asc
  set print on
           format total 3
  set print off;
```

Outlets eighteen and twenty-four were listed as having discrepancies between the number
of displays of apples counted for each outlet at Question 2, and the sum of the displays
recorded for each outlet in Question 3.

Table M.2		
Unreconciled display counts		
Outlet	Total displays per Q2.	Sum of displays per Q3.
18	9	8
24	7	5

Outlet eighteen had one organic apple display and outlet twenty-four had two organic
apple displays. As these displays were atypical of the sample they had not been included
in the *Displays* table. The *Respondents* table was adjusted on 24 November, 1993 to
reflect the exclusion of the three organic apple displays.

M.4   Non-labelled; More-than-one-label; and One-only-label displays

The validity requirements for Questions 3.6, 3.8 and 3.9 are:

1. The responses must be mutually exclusive;

2. A count of the responses must equal the total number of displays
surveyed;   and

3. Valid responses are:

     '0' for a negative response; and

     '1' for a positive response.

The following routine which counts 'non-labelled' displays is one of three routines used to count the number of displays recorded as either 'non-labelled', 'more-than-one-label' or 'one-label'.

```
[ cnl - Counts the number of displays consisting entirely of 'non-labelled' apples]
   set print on
   load apples
   select count(nonlabelled)
   from displays
   where nonlabelled = 1
   set print off;
```

The results of the first counts were as follows:

Table M.3			
First attempted reconciliation of the count of 'non-labelled', 'more than one label' and 'one label' displays			
Q3.6	**Q3.8**	**Q3.9**	
Non-labelled	More than one label	One label	Total
133	45	226	404
Total displays:			426
Difference:			22

It was decided to verify that all the data fields for the three questions contained either '0' or '1' as responses. The following routine was run to verify the data:

```
[ lnmo - Checks that the 'nonlabelled', 'more than one label' and 'one label' fields in the
   'displays' table are either '0' or '1']
   set print on
   load apples
   select outlet_no, display_no
   from displays
   where (nonlabelled ^= 0
   and nonlabelled ^= 1)
   or (more ^= 0
   and more ^= 1)
   or (onelabel ^= 0
   and onelabel ^= 1)
   order by 1 asc
   set print off;
```

Outlet Fifty-six was identified as having:

1. A brand number recorded as the display number; and

2. A display recorded as a 'more-than-one-label' when it was a 'one-only-label' display. Following corrections the relative counts were:

<table>
<tr><td colspan="4" align="center">Table M.4</td></tr>
<tr><td colspan="4" align="center"><i>First attempted reconciliation of the count of 'non-labelled', 'more than one label' and 'one label' displays</i></td></tr>
<tr><td>Q3.6</td><td>Q3.8</td><td>Q3.9</td><td></td></tr>
<tr><td><u>Non-labelled</u></td><td><u>More than one label</u></td><td><u>One label</u></td><td><u>Total</u></td></tr>
<tr><td>133</td><td>44</td><td>227</td><td>404</td></tr>
<tr><td>Total displays:</td><td></td><td></td><td><u>426</u></td></tr>
<tr><td>Difference:</td><td></td><td></td><td><u>22</u></td></tr>
</table>

The following routine was designed to list outlets and their display numbers where the recorded responses to these questions were not mutually exclusive.

```
{ cknmo - Checks that all displays have been recorded as either, 'nonlabelled', 'more than one
  label' or 'one label' }
set print on
load apples
select outlet_no, display_no
from displays
where (nonlabelled = 0
and more = 0
and onelabel = 0)
or nonlabelled = 1
and more = 1
and onelabel = 1
order by 1 asc
set print off;
```

The routine read the four hundred and twenty-six records and returned a listing of twenty-three discrepancies. The discrepancies were as follows:

1. Nineteen were 'one-only-label' displays with Q3.9 incorrectly recorded as '0' rather than '1';

2. Two were 'Non-labelled' displays with Q3.6 incorrectly recorded as '0' rather than '1'; and

3. One was a 'More-than-one-label' display with Q3.8 incorrectly recorded as '0'

rather than '1'.

The observation survey forms were reviewed and the errors identified as data collection errors. Corrections were easily made as the data recorded in Question 3.10 - *Brands in the display* - details the names of brands contained in each display. If one brand name only was recorded, the mixed display had only one brand of labelled apples. If more than one brand name was recorded, the display consisted of more than one brand of labelled apples. If no brand name was recorded, it was a non-labelled display.

Following these corrections the count routines were re-run with the following results:

Table M.5			
Reconciliation of the count of 'non-labelled', 'more than one label' and 'one label' displays			
Q3.6	Q3.8	Q3.9	
Non-labelled	More than one label	One label	Total
135	45	246	426
Total displays:			426

M.5   Question 3.7 - Displays with labelled and non-labelled apples

The validity requirements for Question 3.7 are:

1. For each affirmative response to Question 3.7 there must be an affirmative response to either Question 3.8 or Question 3.9; and

2. Valid responses were:

> '0' for a negative response; and

> '1' for a positive response.

The responses to Questions 3.8 and 3.9 indicate whether the display consisted of non-labelled apples plus 'one', or 'more-than-one' brand of labelled apples. To ensure data integrity three routines were run each of which did one of the following tasks:

1. Count the affirmative responses to Q. 3.7;

2. Count the affirmative responses to Q. 3.8; and

3. Count the affirmative responses to Q. 3.9.

These three routines have not been presented in detail as they were count routines similar to *cdi* which was reproduced in Section M.2.

Table M.6

Attempted reconciliation of the count of labelled and non-labelled displays

Results: Q3.7 - Labelled and non-labelled   68

        Q3.8 - More than one label and non-labelled   10

        Q3.9 - One label and non-labelled   <u>39</u>

                                     <u>49</u>   <u>68</u>

Difference: <u>19</u>

The following routine was run to identify those outlets where recording errors had occurred.

```
{ cklan - reads the 'displays' table and lists all outlets where the 'labelled and non-labelled'
field is affirmative but the 'more than one label' and the 'one only label' fields are zero}
    load apples
    select outlet_no, count(display_no)
    from displays
    where labeland = 1
    and more = 0
    and onelabel = 0
    group by outlet_no
    order by 1 asc
    set print on
    format total 2
    set print off;
```

Exactly nineteen discrepancies were listed. On investigation the nineteen discrepancies resulted from eighteen mixed displays not identified as having 'one-label', and one display not identified as 'more-than-one-label'. These nineteen discrepancies are members of the set of twenty-three referred to in M.4. Following the updating of the *Displays* table the various routines were re-run.

The results were:

	Table M.7		
	Reconciliation of the count of labelled and non-labelled displays		
Results:	Q3.7 - Labelled and non-labelled		69
	Q3.8 - More than one label and non-labelled	11	
	Q3.9 - One label and non-labelled	<u>58</u>	
Totals:		<u>69</u>	<u>69</u>

M.6   Prices

Price data collected was of two categories. Displays priced by weight, and displays priced by a number of apples per dollar. The two sets of prices were converted to $ per kilo in order to increase the sample size for some of the price analyses. Prior to statistical testing two integrity routines were run. The first routine counted the total number of displays observed in each outlet as recorded in the *Displays* table and summed these for all outlets. The second routine then counted the total number of prices for each outlet recorded in the converted or merged table and summed these for all outlets. The respective totals were four hundred and twenty-six and four hundred and twenty-four, a discrepancy of two apple displays. Outlets 12 and 28 were identified as the discrepancies. Outlet 12 had one unpriced display. This was for a premium tray of large Batlow apples priced by the tray. The author telephoned the outlet and established a per apple price of $1.25. Outlet 28 had one display with a recorded apple size outside the size specifications. The merged table was deleted, corrections to the primary data made and then the merged table recreated.

M.7   Bias

A number of routines were created and run to determine if there was any apparent bias in the data. The most notable of these was a routine which detailed the post-code and the date of interview of respondents who had claimed that brand was the most important criteria in their purchase decisions. There were only four respondents in this class, one of which was interviewed on the twentieth, two on the twenty-first and the last on the twenty-third of September, 1993. No apparent bias there, but, all four were domiciled at either post-code 2290 or 2291. Although this appears to be beyond the question of bias it does indicate some localised beliefs or a localised behaviour pattern.

M.8   Conclusion

Following these integrity checks the author was reasonably satisfied that the data presented for statistical analysis was accurate. The author takes the view that validation of data by researchers should not be taken for granted and that research reports of this nature should discuss this aspect of the investigation in some detail.

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