Analysing Wine Behavioural Loyalty

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Abstract

This paper discusses the concept of loyalty and its application within the wine industry. It starts by introducing typical behavioural loyalty measures such as penetration, purchase frequency and share of category requirements (known as brand performance measures – BPM's). It discusses the phenomena of double jeopardy, where small brands experience far fewer buyers and

somewhat lower relative purchase frequencies. This infers that “niche” brands occur very rarely, which has ramifications for the wine industry, where the notion is that small wine brands can show excessively high purchase frequencies among their smaller customer base. The paper also introduces the Dirichlet model, a robust descriptive model that benchmarks certain loyalty measures. The paper goes further by introducing a brand propensity, which aggregates to brand level the switching behaviour of consumers. This provides an additional loyalty measure that compliments the BPM’s, and addresses issues associated with the Dirichlet benchmark and the Logit modeling technique. The paper finishes by showing an innovative way of using the sum of the brand propensities. The preliminary study with wine shows that shoppers show high loyalty to certain price points. They also switch more between well-known and less well-known brands than they do between well-known and less well-known regions.

Key Words: Behavioural Loyalty, Brand Performance Measures, Dirichlet, S statistic.

Introduction

Brand market share fluctuations in a repertoire market are inextricably connected to some form of repeat purchase behaviour. This repeat purchase behaviour is therefore linked to various degrees of behavioural brand loyalty, which may vary from category to category. At the one end, extant literature on behavioural brand loyalty has mostly considered loyalty as a notion of consumers being exclusively loyal to a single alternative (see Yim and Kannan, 1998). At the other end, Yim and Kannan (1998) also suggest that the now unprecedented number of competing product alternatives and increased fragmentation of markets, has led to the decrease in the number of consumers purchasing brands exclusively. For example, from 1975 to 1984, the percentage of consumers drinking Coke exclusively dropped from 18% to 12% (see Hartley, 1992). Shoppers are therefore embracing a set of acceptable brands that match their needs rather than being loyal to one specific brand (see Thompson, 1996).

In relation to wine, some argue that it is a unique category in that it currently sits somewhere between a commodity and a branded product. Its agricultural nature (cyclical/many producers), combined with the enthusiastic push by the global industry to adopt better consumer marketing strategies, has resulted in a proliferation of brands onto the market (see Spawton, 1998). For example, Rice (1998) states that there are some 16,000 wine labels in Australia. As a consequence, the wine industry is strong with famous brand names (Beaujolais, Chianti, Chablis, Gallo, Jacob’s Creek, Blue Nun) but with most of these succeeding in winning no more than a few percent of the market in one or two countries (see Willman, 1998). Even Gallo, the world’s biggest wine brand, has less than 1 per cent of global sales (Willman, 1998). Does the wine category show similar loyalty patterns to other categories or is it really unique, requiring unique branding strategies?

What is Brand Loyalty?

We have answered some of this question. Brand loyalty is an old concept (see Copeland, 1923). Aaker (1991) conceptualises and defines brand loyalty as a combination of purchase behaviour,

customer switching costs, customer satisfaction and brand liking. This definition is popular and follows on from Jacoby and Chestnut's (1978) summary of the earlier brand loyalty literature, stressing brand loyalty as not only behavioral, but attitudinal or a composite of both. While the literature is vast in all of these areas, an analysis of behavioural data has resulted in generalised brand loyalty measures. Further, behavioural data is becoming more and more available thanks to the electronic availability of scanner data, consumer panel data and customer loyalty programs. Assessment of behavioural data is therefore becoming routine, especially among large Fast Moving Consumer Good (FMCG) companies.

Jacoby and Chestnut (1978) observe 33 specific measures of behavioural loyalty, sub-divided into five sub groups; (1) proportion of purchases devoted to a given brand, (2) those concerned with the sequence in which brands are purchased, (3) those that reflect probability of purchase, (4) those that synthesise or combine several behavioural criteria, and finally (5) a number of miscellaneous measures. "Proportion of Purchases" is more commonly termed within a group of measures known as "Brand Performance Measures" (BPM's)(see Ehrenberg, Uncles & Goodhardt, 2003). BPM's define all those popular measures used in assessing behavioural data. BPM's, including specific loyalty measures, are calibrated on actual purchase data and help operationalise loyalty (by explaining the structure among brands) and decide marketing strategy. Typical BPM's include (shown for a typical category in Table one):

- Market share = $\frac{\text{Total purchases of the brand}}{\text{Total purchases of the category}}$
- Penetration = $\frac{\text{The number of buyers of the brand}}{\text{The total number of shoppers in the category}}$
- Purchase Frequency = Average number of times brand purchased by all buyers in a given time period
- Purchase Rate = Average number of times brand purchased over all shoppers in the category
- 100% Loyals = % of buyers only buying that brand
- Share of Category Requirements (SCR)* = $\frac{\text{Purchase frequency of brand}}{\text{Category Purchase Rate}}$

  * SCR is the brand's market share among all consumers who purchased the brand at least once.

Table One: Brand Performance Measures (BPM's) for 12 brands in one Category.

Brand	Market Share	Penetration	Purchase Frequency	100% Loyals	SCR
Brand 11	.31	.60	14.8	.06	.39
Brand 12	.21	.55	11.0	.04	.29
Brand 5	.14	.49	8.3	.05	.27
Brand 10	.08	.34	6.9	.02	.19
Brand 6	.06	.32	5.8	.02	.16
Brand 8	.05	.27	4.9	.04	.18
Brand 3	.04	.24	4.8	.02	.15
Brand 9	.03	.23	3.8	.01	.11
Brand 7	.03	.19	4.1	.02	.12
Brand 4	.02	.15	3.6	.01	.12
Brand 1	.02	.14	3.8	.01	.11
Brand 2	.02	.16	3.3	.02	.13
Category	100%	83%	34.9		

A brand may have a market share of 21%, a penetration of 55%, with 4% of the buyers of the brand being 100% loyal. Its SCR may be 29%. An analysis of these figures in relation to the other brands can provide insight into market structure and help determine marketing strategy. For example, should penetration (number of customers) or the purchase frequency (how much the customers buy) be increased in order to increase market share? Do bigger brands have a higher percentage of 100% loyals? While interpretation is usually restricted to the category being assessed (i.e. comparing big brands against small brands), Ehrenberg and colleagues have replicated across similar and many markets and propose generalisations about the structure of brands within markets. To understand such generalisations, one must be aware of the "stochastic" philosophy in approaching the phenomenon of repeat purchase. At their core is the suggestion of a strong random (i.e. purely chance) component underlying basic changes in market structure (see Bass, 1974; Ehrenberg, 1988).

The Dirichlet

On the topics of generalisations, loyalty and stochastic theories, Ehrenberg and his colleagues contend that buyers have steady but divided loyalties and within such a category framework, specific purchases follow a Dirichlet multinomial process. Personal repertoires differ but the heterogeneous behaviour aggregates to BPM's, which follow the same pattern from Brand to Brand (see Ehrenberg, Uncles & Goodhardt, 2003). Ehrenberg, Uncles & Goodhardt (2003), in summarizing the "law-like" patterns in market structure, state that "any loyalty related measure is usually much alike for different brands, that a brand typically has many light buyers, and that few of its buyers are 100% loyal over a sequence of purchases".

The Dirichlet model (or NBD/Dirichlet in full) is a descriptive model. The model uses mathematical distributions to predict the market structure characteristics mentioned above (see Goodhardt, Ehrenberg & Chatfield, 1984). It does not incorporate explanatory variables, such as the Logit choice modeling procedure (see Berkowitz & Haines, 1982; Gensch & Recker, 1979;

Punj & Staelin, 1978) and proponents of the Dirichlet model have therefore been more concerned with testing its robustness and utilising the model to "benchmark" loyalty patterns. Subsequently, its main benefit is that it offers a robust, parsimonious method to summarise and predict repeated choices (therefore behavioural loyalty). In the context of this paper, the model's robustness allows behavioural loyalty to be assessed. The calibration of the model requires two inputs from the category and one input from each brand within the category. From the calibration, a variety of diagnostic statistics are made available. Table two shows some of these.

Table Two: Observed BPM's (O), Dirichlet Theoreticals (T) and Deviations (D).

Brands	**Market Share (%)**			**Penetration (%)**			**Purchase Frequency**			**SCR's**		
	0	***T***	D	0	***T***	D	0	***T***	D	0	***T***	D
Brand 11	.31	***.26***	0.04	.60	***.65***	-0.04	14.8	***11.8***	3.0	.39	***.34***	0.06
Brand 12	.21	***.19***	0.02	.55	***.57***	-0.02	11.0	***9.7***	1.4	.29	***.28***	0.01
Brand 5	.14	***.14***	0.00	.49	***.50***	-0.01	8.3	***8.3***	0.1	.27	***.24***	0.03
Brand 10	.08	***.08***	0.00	.34	***.35***	-0.01	6.9	***6.5***	0.4	.19	***.19***	0.00
Brand 6	.06	***.07***	-0.01	.32	***.32***	0.00	5.8	***6.3***	-0.5	.16	***.18***	-0.02
Brand 8	.05	***.05***	-0.01	.27	***.26***	0.01	4.9	***5.9***	-1.0	.18	***.17***	0.01
Brand 3	.04	***.05***	-0.01	.24	***.24***	0.00	4.8	***5.7***	-1.0	.15	***.17***	-0.02
Brand 9	.03	***.04***	-0.01	.23	***.22***	-0.01	3.8	***5.6***	-1.8	.11	***.16***	-0.05
Brand 7	.03	***.04***	-0.01	.19	***.19***	0.00	4.1	***5.5***	-1.4	.12	***.16***	-0.03
Brand 4	.02	***.03***	-0.01	.15	***.15***	0.00	3.6	***5.3***	-1.6	.12	***.15***	-0.04
Brand 1	.02	***.02***	-0.01	.14	***.14***	0.00	3.8	***5.2***	-1.4	.11	***.15***	-0.04
Brand 2	.02	***.03***	-0.01	.16	***.15***	-0.01	3.3	***5.3***	-2.0	.13	***.15***	-0.03
Mean Absolute Deviation			0.011			0.009			1.3			0.03

In this example, the model fit is close. Apart from Brands 11 and 12 (the highest market share brands), the model predicts to within ± .01 for the market shares and penetrations. It under predicts the purchase frequency and SCR of the larger brands and over predicts for the smaller brands. While this trend is larger than usual in this data set, it has actually been observed in almost all cases analysed (see Ehrenberg & Goodhardt, 1976; Ehrenberg & Goodhardt, 1979; Wrigley, 1980). Fader and Schmittlein (1993) contend that high share brands do actually show significantly greater loyalty than levels expected by the Dirichlet. Keeping this in mind, the model still allows for an observation of brand loyalty and niche branding. In this case, and as Ehrenberg contends, there is none. In fact, the theoreticals here are suggesting that the small brands generally should have much higher purchase frequencies. Table two also shows that the model predictions reflect the double jeopardy trends.

Double Jeopardy

As well as the Dirichlet model, another key finding of their work and a major generalisation first proposed by McPhee (1963), is that small brands experience a "double jeopardy" effect, where such brands have far fewer buyers (penetration) and also somewhat lower purchase frequencies (the pattern is apparent in Table one). Double Jeopardy implies that both niche and change-of-

pace brands should be observed only rarely and with about equal frequency (Fader & Schmittlein, 1993). This has ramifications for the wine industry, where there are a myriad of small wine brands and where the notion is that small wine brands can show excessively high brand loyalty (This has not been empirically proven). As Fader & Schmittlein (1993) further state on the empirical law of double jeopardy, "It also suggests that managers will have difficulty creating a true "niche" brand, i.e., a brand with relatively few buyers (low penetration) but whose users purchase it often (high purchase frequency)". This implies that there are just clearly big brands and small brands and not strong brands and weak brands. In this context, consumers tend to be 'loyal' to a repertoire of brands with big brands just showing higher repeat purchase characteristics. Ehrenberg's work is distinguished from others in that consumers do not show specific loyalty to one brand within a set of brands. As mentioned in the previous section, this work over many years has resulted in the continued adoption of the Dirichlet model as a benchmark descriptive model, describing these "law-like" generalizations in behavioural loyalty.

Limitations of the BPM's and the Dirichlet

Yim and Kannan (1998) pose a number of questions in regards to loyalty:

1. How many buyers purchase my brand exclusively and how many have divided loyalties?
2. Why do some buyers exhibit divided loyalties?
3. Is their behaviour driven by loyalties to certain product attributes or is it an outcome of marketing mix actions?
4. What can we do to maintain an exclusive loyal buyer base?
5. What actions can we take to build our position among the divided loyals?

Brand Performance Measures

Brand performance measures help to answer question one and can be easily calculated from actual purchase data. However, if we look at the popular measure of the overall consumer behavioural loyalty toward the brand, the SCR, the figure can show different scenarios. A brand with an SCR of 30% could have been the result of 30% of the buyers purchasing it exclusively and 70% purchasing it occasionally, or 100% of buyers purchasing it about one third of the time (Yim and Kannan, 1998). This would suggest that the time period for the analysis could have a significant impact on the results, making it difficult to interpret. What is a standard time period, one year? six months? Summer? Winter? Eventually all consumers may purchase a brand if the time period is long enough.

Dirichlet

If actual purchase data is not available, the section on the Dirichlet model highlighted the use of this model as a loyalty benchmark. As mentioned earlier, the calibration of the model requires two inputs from the category and one input from each brand within the category. Minimal inputs therefore allow the model to be calibrated and the Dirichlet type loyalty patterns to be produced. This therefore eliminates the need for potentially sensitive raw data. Categories and brands can then be assessed to see whether they are following typical Dirichlet type patterns.

Additionally, the model can also be used to compare the theoretical values to the observed values (see table two). In this manner the theoretical values are benchmarks (Rungie, 2002). So while the Dirichlet can be useful as a benchmark model, it does not allow questions two to five to be answered. The Dirichlet model doesn't allow explanation and, in regards to loyalty, proponents of the model suggest that there isn't any loyalty within a stable market structure, just 'law-like' patterns among brands (including the double jeopardy effect). In this context, attribute and other marketing mix effects do not have a major influence on loyalty at the aggregate level, with the Dirichlet model replications showing this. Competing brands have a set of features that they bring to the market and it is distribution and salience that governs the size of the brand, not differentiation among attribute features and brand positioning (see Sharp and Dawes, 2001).

Conditional Probability

To overcome issues with BPM's and to answer questions two to five, researchers have utilised repeat purchase probability. This dates back to Frank (1962) who sought to emphasise repeat purchase probability rather than "proportion of purchase" measures mentioned above (BPM's). Also, Kuehn and Day (1964) actually noted the repeat-purchase probability as an improvement on old behavioural measures of Brand Loyalty (Jacoby & Chestnut, 1978). As such, the literature on probability of re-purchase measures is vast and range from Lipstein's (1959) early work using a first-order Markov process, to Urban and colleagues (1983) work on the assessor model and its use of a zero-order Bernoulli process. For loyalty studies, see Grover and Srinivasan (1987), Colombo and Morrison (1989) for zero-order techniques; McCarthy et. al. (1992), Yim and Kannan (1998) for first-order Markov process; for techniques that assess attribute and other marketing mix effect using multinomial Logit, see Grover and Srinivasan (1992), Dillon and Gupta (1992).

The most widely used probability model is the Logit (see McFadden, 1986). It is the functional form used to characterise individual choice behaviour and in its simplest form is represented by:

Equation One $$P_{il} = \frac{\exp A_{ij}}{\sum_j \exp A_{ij}}$$

Where

P_{il} = probability of individual i choosing brand l.
A_{ij} = attractiveness of product j for individual i
$= \sum_k w_k b_{ijk}$

b_{ijk} = individual i's evaluation of product j on product attribute k, where the summation is over all the products that individual i is considering purchasing; and
w_k = importance weight associated with attribute k in forming product preferences (Lillien & Rangaswamy, 2003).

Logit models can be calibrated using behavioural data. The loyalty refers more to a measure of the impact of purchasing patterns of the brand and the type of package on choice probability. The most noted example being Guadagni and Little's (1983) work. Their Logit model developed parameter coefficients for brand loyalty, size loyalty, promotion, price promotion, price promotional purchase and second promotional purchase. Guadagni and Little (1983) therefore use both marketing mix variables (i.e. price promotion) and consumer characteristics (i.e. promotional purchase and second promotional purchase) in their modeling approach. The results are shown in table three.

Table Three: Calibration of Coffee Model with Increasing Number of Variables

Attribute Specification U^2	***S1*** **0**	***S2*** **0.24**	***S3*** **0.46**	***S4*** **0.47**	***S5*** **0.47**	***S6*** **0.48**	***S7*** **0.22**
Brand Loyalty		2.78	3.47	3.47	3.79	3.92	
Size Loyalty		2.12	2.74	2.72	2.74	2.97	
Promotion			2.22	2.00	2.07	2.11	1.40
Promotional Price Cut			18.12	29.66	29.20	29.21	26.98
Regular Price (depromoted)				-26.36	-26.49	-29.94	-28.02
Price Promotional Purchase					-0.60	-0.22	0.62
Second Prior Promotional Purchase					-0.72	-0.46	0.49

Source: Guadagni and Little (1983)

The U^2 measure refers to McFaddens (1974) 'goodness of fit' value, defined as;

Equation Two $$U^2 = p^2 = 1 - L(X)/Lo$$

Where $L(X)$ is the log likelihood of the calibrated model with explanatory variables, X, and Lo is the log likelihood of the null model (for application of this see Guadagni & Little, 1983; Kalwani, Meyer & Morrison, 1994).

The *S1* specification contains only brand-size dummy variables and, as the null model, has a $U^2 = 0$. In *S2*, the addition of the brand and size loyalty variables produces a large jump to $U^2 = 0.24$. Specification *S3* introduces the promotion variable to the model and increases U^2 substantially to $U^2 = 0.46$. *S6* is a rerun using the new loyalty variables and is the final specification, giving a $U^2 = 0.47$, indicating that brand loyalty is the single strongest predictor in the model, followed by size loyalty. Guadagni and Little's (1983) work helps to answer question 3.

Probability measures can be used to study the impact of attributes and other marketing mix variables on choice. The most popular method, the Logit, inherently uses maximum utility theory where consumers 'maximise' from a choice set. As such, the drivers of loyalty are inherently linked to the market share of the brand (refer equation one). This is the case in Guadagni & Little (1983) study. The Logit model therefore does not help to capture the propensity to switch among brands (an dattributes) because the probabilities of the brands (and the associated attributes) are relative to each other and fixed.

Propensity

The Dirichlet assumptions can be utilized to determine a propensity probability for each brand. This is different from the logit because it is not linked to market share (refer equation one). Intuitively, the robust assumptions of the Dirichlet model allow loyalty to be captured for each brand. As mentioned, the model assumes a zero-order process, with no "learning" or systematic change in purchase probabilities (see Ehrenberg, 1988). Because of the Dirichlet's robustness as a model that provides loyalty diagnostics that fit well with the observed data, the brand probability output provides a strong measure of behavioural loyalty towards each individual brand. This is shown in table four. This brand parameter is based on the buyer's choice among the available brands (following a multi-nomial distribution) and the choice probabilities across different shoppers following a multivariate Beta or "Dirichlet" distribution.

Table Four: Brand Alphas and the S statistic

BRAND	BRAND ALPHA (∝)
Brand 11	1.12
Brand 12	0.81
Brand 5	0.61
Brand 10	0.33
Brand 6	0.29
Brand 8	0.23
Brand 3	0.20
Brand 9	0.18
Brand 7	0.15
Brand 4	0.12
Brand 1	0.12
Brand 2	0.10
S statistic	***4.27***

Conceptualising this, a brand alpha over 1.00 means that the propensity to purchase the brand is high. In other words, the shoppers "like" the brand. There is a higher propensity by the population to switch to the brand. The propensity graph would show a bell-shape curve. If all brands had high propensities like this (high brand alphas) than the *S* statistic would be relatively high, meaning high switching and therefore lower levels of loyalty. So even though shoppers "like" the brands in the category more, the category as a whole would show less loyalty for that exact reason. This gives extra meaning to the brand alphas, not inherent in the relationship with market share.

Rungie (2001) states that even though brand purchases have a conditional distribution, it is possible to estimate important parameters of the major underlying unconditional probabilities. Therefore, the drivers of loyalty, (i.e. the drivers of the brands alphas) can be determined.

For any one brand, its market share, *m*, is a simple function of its alpha and *S* (the sum of all brand alphas); *m* = alpha/*S*. Thus the alphas for the brands capture the market share. If a new constant *c* is defined by c=1/(1+S) then loyalty can be also expressed as a direct function of the alphas for the brands. The repeat rate, *r*, for a brand is the probability of the brand being selected at the next purchase occasion giver it was selected at the last. A purchase occasion is an event where a purchase is made from category. The repeat rate is an observation or measurement of the repurchase probability. Repeat rates are also simply calculated from the brand alphas. Rungie has shown that $r = m + c - mc$. Thus, while there is only one alpha for each brand they collectively, over all brands, identify the market shares and the loyalties. The constant *c* summarizes the loyalty in the category. It always falls between zero and one. The close *c* is to one the greater the loyalty in the category. Given that c=1/(1+S) then S=1/c-1. The greater the loyalty the greater *c* and the smaller *S*. Large values of *S* indicate less loyalty and more switching between the brands in the category.

This provides a technique for answering question 2, 3, and 5. Using the brand alphas by themselves allows interpretation for question 4.

Recapping, Yim and Kannan (1998) pose a number of questions in regards to loyalty:

1. How many buyers purchase my brand exclusively and how many have divided loyalties?
2. Why do some buyers exhibit divided loyalties?
3. Is their behaviour driven by loyalties to certain product attributes or is it an outcome of marketing mix actions?
4. What can we do to maintain an exclusive loyal buyer base?
5. What actions can we take to build our position among the divided loyals?

Applications for Wine

This paper has described the various definitions and operationilisations of loyalty. Dore's (2001) view is that there are a number of categories in wine and that there is only loyalty in one category and that is the low-end cask wine category. This item is purchased by heavy users that are price sensitive and will buy the cask for the same price routinely without exception (Dore, 2001). Views like these have yet to be tested empirically.

We also do not know if consumers are loyal to specific wine brands, or loyal to specific attributes such as region or grape variety. The drivers of loyalty would therefore provide greater information for branding and communication strategy and determine the strength of proprietary brands within the wine industry. Do marketers concentrate on proprietary brands or on regional or varietal promotion? What therefore should the strategic emphasis be?

By dissecting the wine category, we can also determine the level of loyalty. This has ramifications for strategy. If a marketer knows that a category has many switchers, it can adopt "switching" strategies, such as sales promotion to attract more switchers to their brand. If a category has high loyalty, the marketer knows that it will be difficult and costly to increase the number of consumers for his brand so can attempt to build stronger bonds with existing customers through loyalty type programs.

The "double jeopardy" effect has not been empirically tested with wine (see Lockshin, 2002). Do wine categories show stronger loyalty at the small brand level and therefore the opportunity for "niche brands" or should wine marketing strategy be towards getting bigger by getting more customers. Dore (2001) further cites shared loyalties. The consumer will buy into a price range and may buy three or four or six brands in that price range (Dore, 2001). This is in relation to Yim and Kannan's (1998) question one and also needs to be empirically tested with wine.

Preliminary study using the S statistic

This first preliminary study assesses the behavioural loyalty of three attributes, price, region and proprietary brand. The study uses the attributes from Tustin's (2000) stated conjoint study of wine attributes. For a detailed comparison between revealed choice and stated choice wine studies, see Jarvis and Rungie (2002a) and Jarvis and Rungie (2002b). 'Revealed Choice' data from the total wine purchases (38,514) of 1,092 Australian households over a one-year period (1999/2000) was used. The data was recorded purchases by stock keeping units (SKUs) or as they are known in Europe, EAN's. The SKUs are clustered into 12 product categories that resembled the hypothetical or 'choice tasks' of the Tustin (2000) study. This is shown in table five and six.

Table Five: Attributes and Levels used in the study.

Attribute	Levels
Region of Origin	Well established wine region Newly established wine region
Price	$AUD11.99 $16.99 $21.99
Company Brand	Well known company brand Less well known company brand

Table Six: 12 brands based on attributes and levels.

Brands as Attribute Bundles
Brand 1 = newly established region, less well known brand, $AUD19.50-24.95
Brand 2 = newly established region, less well known brand, $AUD9.50-14.49
Brand 3 = newly established region, less well known brand, $AUD14.50-19.49
Brand 4 = newly established region, well known brand, $AUD19.50-24.95
Brand 5 = newly established region, well known brand, $AUD9.50-14.49
Brand 6 = newly established region, well known brand, $AUD14.50-19.49
Brand 7 = well established region, less well known brand, $AUD19.50-24.95
Brand 8 = well established region, less well known brand, $AUD9.50-14.49
Brand 9 = well established region, less well known brand, $AUD14.50-19.49
Brand 10 = well established region, well known brand, $AUD19.50-24.95
Brand 11 = well established region, well known brand, $AUD9.50-14.49
Brand 12 = well established region, well known brand, $AUD14.50-19.49

The use of attribute bundles is a slight departure from most contemporary choice modelers, who use the brand as the fundamental unit of analysis (see Fader and Hardie, 1993). This paper attempts to describe a methodology that allows attribute drivers to be determined. As such, it postulates that wine consumers may be loyal, not necessarily to a specific wine brand, but to some other attribute or to a number of attributes. This has many ramifications for marketing strategy, right down to what should be put on the label? To dissect the drivers of loyalty, the 12 individual brands (as a bundle of attributes) are further categorised into their individual attribute and attribute levels (i.e. all brands with a "well established region" attribute level) and an *S* statistic determined. The Dirichlet distribution establishes the *S* statistic for each data set, as shown in table seven.

Table Seven: S statistic for different Brand Combinations.

Attribute Categories	***S* statistic**
$11.99 vs. $16.99 vs.$21.99 (3 brand categories)	2.40
Well established region vs. newly established region (2 brand categories)	2.84
Well known brand vs. Less well known brand (2 brand categories)	3.20
All brands (12 brand categories)	4.27

The highest degrees of loyalty are within the three price specific categories where consumers have a low propensity to switch, hence the *S* statistic is the lowest. Subsequently, the lowest propensity to switch is within the three price levels, suggesting that consumers stay loyal to a specific price range and mainly purchase within this. This is an important point in relation to the wine industry and requires further discussion and analysis outside the scope of this paper. While in this initial study, only two attribute levels were used to define 'brand' and 'region', the results show that higher switching takes place within well-known and less well-know brands than between well-established and less well-established regions. Consumers do switch more between well -known brands and boutique brands. Once again, this has ramifications for the wine industry where a portfolio for a wine company may comprise large brands and small brands. This also requires further discussion and analysis outside the scope of this paper.

The work of Tustin's (2000), Jarvis and Rungie (2002a) (2002b) referred to earlier showed that a well established brand is a stronger influence on market share than a well established region. However, the analysis here shows that the influence of loyalty is the reverse. A well-established region is a greater influence on loyalty than a well-established brand. The marketing implications are substantial. Brand drives volume but region drives loyalty. More loyal customers are harder to win. Once won, they are harder to loose. The customer who switches a lot will select a different wine based on some small differences in the attributes. The loyal customer requires a greater difference in attributes before they switch. Loyal customers are less sensitive to small changes in attribute levels, including price. They have lower elasticities. The wine with more loyalty will experience less change in demand as it undergoes small changes in its attributes, including price. There is every indication that brands drive volume but regions drive price and possibly profitability. The analysis has shown that there is much to be learnt in studying the impact of attributes on the brand alphas and on market shares, repeat rates and loyalty.

Conclusion

This paper has discussed the concept of loyalty and its implication within the wine industry. It has introduced a brand propensity probability that aggregates to brand level the switching behaviour of consumers. This provides an additional loyalty measure that compliments the BPM's, as well as addressing the limitations in regard to the Dirichlet benchmark and the Logit modeling technique. The paper also shows an innovative way of using the S statistic to dissect the drivers of loyalty in a market. The preliminary study with wine shows that consumers show high loyalty to certain price points. They also switch more between well-known and less well-know brands than they do between well-known and less well-known regions.

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