Atlantic Marketing Journal

Volume 1
Issue 2 *Summer 2012*

Article 3

11-10-2012

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An Empirical Analysis: Wine and the Consumer Price-Perceived Quality Heuristic

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Abstract - Does price have anything to do with Wine? The consumer price-perceived quality has always been used by consumers when they gauge the quality of a product or service. Three propositions are developed which show how the consumer uses the price-perceived quality in the wine industry. For all types of wines, there will be attributes like ratings, brand name and word of mouth that will affect the purchase. The goal in this paper is to empirically validate propositions pertaining to the factors that influence how consumers use the price-perceived quality heuristic to determine which wine is worth the money that they are paying for. The findings will point to several ways that wine sellers can realign programs and reallocate resources to raise profitability levels and reduce costs. Primary considerations include whether to upgrade to meet the rating criteria, whether to invest in the brand name or to address public perception through viral marketing.

Keywords - Price-Perceived Quality Heuristic, Wine, Rating, Brand Perception, Viral Marketing, Proposition

Relevance to Marketing Educators, Researchers and/or Practitioners - This paper will enable wine sellers to raise profitability levels and reduce costs by considering ratings, brand name and viral marketing strategies in view of consumer reliance on the price-perceived quality heuristic.

Introduction

Wine Spectator stated that "price has nothing to do with wine" while in Hibbs, Jensen, Sraiheen (2011), an analysis reveals a statistically significant positive correlation between price and quality. For many ordinary consumers, buying wine is largely based on recommendations or with reference to price. The price-perceived quality heuristic is one of the most important heuristics in consumer behavior (Chao and Schor, 1988; Erickson and Johansson, 1985; Lichtenstein and Burton, 1989; Monroe and Krishnan, 1985; Stafford and Enis, 1969; Zeithaml, 1988). Previous studies found that the use of this heuristic is a common behavioral feature among consumers (Stafford and Enis, 1969; Monroe and Krishnan, 1985; Erickson and Johansson, 1985; Zeithaml, 1988), and that even though the heuristic exists in many product categories, it is particularly strong for status-oriented products, durable goods, and products that are

ISSN: 2165-3879 (print), 2165-3887 (electronic)

difficult to evaluate (Chao and Schor, 1988; Wright and Griffin, 2000; Gerstner, 1985; Owen, Lichtenstein and Burton, 1989).

Wine is definitely one of the aspects of consumer purchase where gauging the quality is subject to a multitude of factors and parameters like age, appellation, the process, the packaging etc. The relationships between wine quality and price per bottle or case is hence of great interest. This is especially so given the growing consumption for wine in developed countries, the higher expectations of the growing middle class as well as the importance of wine in fine dining in today's economies of emerging markets. The wine market in China reached 125m cases in 2010, making it the fastest growing major still light wine market with growth of 34.4% on 2009. (Wehring 2011).

For many seasoned wine lovers, gauging quality prior to purchase and tasting is something done through experience and awareness of the source. However for majority of the layman customers in the market, gauging the quality is often via price on the wine list. Thus this leads to restaurant owners and managers needing to know about the consumer's-perceived quality heuristic to be able to better fairly price the rack rates and position the quality perception in the consumers' mind.

For the consumer dining in a restaurant or who has limited experience tasting different types of wine, basing off a wine list or menu is how wine is ordered. The customer generally believes that the higher the price on the menu, the higher the wine quality will be. The customer is assuming the specialty of the grapes used to produce the wine or the process or the appellation or age or some other attributes that will command the price as indicated. Our goal in this paper is to empirically validate propositions pertaining to the factors that influence how consumers use the price-perceived quality heuristic. We identify three potential areas that become salient in these circumstances and in which wine sellers can better understand their threshold market behavior: Ratings, Brand Perception and Word of Mouth.

The Consumer Price-Perceived Quality Heuristic

There are two effects to price. First, price in the budget constraint is associated with the expenditure items. The theory of resource allocation explicitly states that consumers will treat it as a sacrifice of monetary resource as spending in one product necessarily decreases the possible purchase of another. Second, a higher price is usually taken as an indication of higher quality, even though the significance of such perceived correlation may vary across product categories (Lichtenstein and Burton 1989). This *positive* role exists as price helps to form a belief or perception about quality, which then influences the purchase intention (Erickson and Johansson, 1985; Monroe and Krishnan, 1985). The conceptual framework of Erickson and Johansson (1985) compactly joins these two distinctive effects. Figure 1 illustrates this framework, which helps construct a

consumer utility function that incorporates the price-perceived quality heuristic into classic quantitative setups (Mussa and Rosen, 1978; Moorthy 1984, 1988).

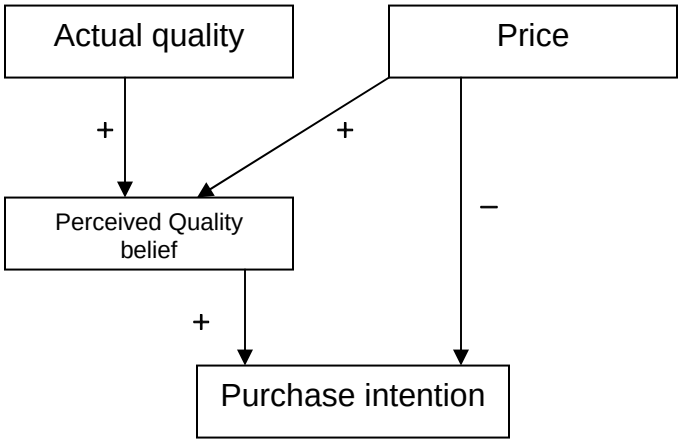

Figure 1. Framework of Price-Perceived Quality Heuristic and Purchase Intention

We state that the overall value of sh is derived from two components – s and p, and that sh is an increasing function of both since perceived quality (sh) is formed based on true quality (s) and the price level (p), Parameter δs ($0 < \delta s \leq 1$) is used to represent the fraction of true quality information that is known to consumers, and parameter δp represents the weight that consumers place on price p when assessing perceived quality sh. In other words, higher product quality and a higher price will result in higher perceived quality for the average consumer. Besides the support from the behavioral literature discussed earlier, these parameters are also consistent with the studies that indicate product quality information cannot be fully conveyed or evaluated by consumers prior to purchase (Chang and Wildt 1996; Nelson 1970; Shapiro 1982). To ensure that the effect of price on quality is not greater than its effect as a budgetary constraint, we confine our analysis to $0 \leq \delta p \leq 1$.

The other issue in the formulation is the degree of dependence between the use of price-perceived quality heuristic and the amount of true quality information available. No conclusion can be drawn from existing research. On one hand, one may argue that the more information available to consumers, the less they will rely on price to judge quality. For example, Zeithaml (1988) shows that the availability of intrinsic cues to quality affects the price-perceived quality relationship. On the other hand, other studies suggest that the use of price-perceived quality heuristic is an intrinsic behavioral characteristic of consumers, and they still adopt it even if their knowledge of the products is increased by communication or personal usage (e.g., Lichtenstein and Burton 1989). In light of these differing views, we allow the degree of dependence to vary and in this paper, δp and θ (see equation 1) will be the parameters that captures the three potential areas that may affect the consumer price perceived-quality heuristic usage: Ratings, Brand Perception and Word of Mouth.

Lee, Liu and Weinberg, (2005) capture the weighted combination of true quality (s) and price (p) and the varying degree of dependence between the use of the price-perceived quality heuristic and the availability of true quality information is as follows,

$$s_h = \delta_p(1-\theta\delta_s)\,p + \delta_s s \qquad (1)$$

Parameter θ captures the strength of this dependence. θ = 0 implies no dependence, and θ = 1 implies complete dependence. If δp = 0, price plays no role in quality perception. Note that, first, we focus on the across-category variations in the use of the price-perceived quality heuristic. We acknowledge there can be both category level and individual level variation in the use of the price quality heuristic (Lichtenstein and Burton 1989). Equation (1) captures the mean response that a consumer would hold for any given set of parameter values.

Illustration

Wine Ratings

The rating of wine has been found to be reliable and consistent over time according to researchers at the Center for Hospitality Research at Cornell University (2008) Thompson et. al. Scores from Wine Spectator, The Wine Advocate and International Wine Cellar relative to forty-four Bordeaux wine producers were investigated. There was a high correlation of raters and this means that there are consistent intrinsic characteristics that raters are capturing in their scores. It is thus accepted that quality cues have evolved over time for the evaluation of wine and these lead to reliable ratings. A linear model to determine the consistency was used by Shewbridge (1998).

For the International Wine Cellar, wines are scored relative to their peer group based on their expected quality during their period of peak drinkability. A score of 75 would be average while a score of 95 would be extraordinary. For the Wine Advocate, a score of 98 would be the pinnacle of quality while a score of 80 would be acceptable. For Wine Spectator, a score of 95 would be a classic wine while a 75 is a minor flawed wine.

As the rating information pertains to the appellation, age, taste and production, consumers will have a proxy to the perceived quality of the wine. As the scores are absolute relative to ratings, there is less reliance on price to perceive the quality. With more available quality information, consumers will naturally depend on the information. Thus with this in perspective, we raise proposition 1:

P_1: Consumers rely less on the price-perceived quality for higher rated wine. Also the availability of information at a higher wine means that the dependence on quality information is higher.

$$\delta_{p(LowerRated)} > \delta_{p(HigherRated)} \text{ and } \theta_{LowerRated} < \theta_{HigherRated}$$

In view of the proposition, the hypotheses for the empirical study are defined as follow:

H1A: For wine with a Lower Rating, consumers rely more on the price-perceived quality compared to wine with a Higher Rating.

$$\delta_{p(HigherRated)} < \delta_{p(LowerRated)}$$

H1B: For wine with a Lower Rating, consumers depend less on quality information compared to wine with a Higher Rating.

$$\theta_{HigherRated} > \theta_{LowerRated}$$

Brand Perception

Brand perceptions strongly influence buying behavior (Romaniuk and Sharp (2002)), and is key to a successful marketing communication strategy. Firms look to image studies to explain current marketplace performance, e.g. number of units sold and price gained. In the case of wine, ratings of wines are often used to benchmark the brand perception of the wine. Romaniuk and Sharp (2002) indicated that generally the more positively the brand is perceived by the marketplace (potential casual wine drinkers and the wine enthusiasts), the more the consumers (or potential guests) will buy. Brand perceptions can come from a variety of sources including consumer experiences, marketing, communications or word of mouth. Basically, any information that is encountered with the brand name when sufficiently processed will be linked to the brand name in memory and thus become part of that brand's image. Whether the consumer has a positive or negative perception of a certain brand will certainly affect the way consumers use the consumer price-perceived quality heuristic to infer quality and that will also determine whether they rely on quality information as well to perceive quality.

Wine production is available in many continents and because of the thousands of wineries to choose from, there are likewise thousands of brands to choose from as many wineries also have dozens of products under one label with many vintages under each product brand. In brief, this presents an infinite list of brands for the casual wine drinker. Subsequently, the consumer is forced to make choices among many brands and appellations that vary in quality and

quantity every year. When presented with multiple unknown brands, the consumer is likely to rely more on the price-perceived quality. Subsequently if the brands are known at least to the potential wine buyer, the dependence on the quality information becomes salient. Hence we raise Proposition 2:

P_2: Consumers rely less on the price-perceived quality for more known wine brands than less known wine brands. Also the availability of quality information through the brand means that the dependence on quality information is higher.

$$\delta_{p(more\_knownbrand)} < \delta_{p(less\_knownbrand)} \text{ and } \theta_{more\_knownbrand} > \theta_{less\_knownbrand}$$

In view of the proposition, the hypotheses for the empirical study are defined as follow:

H2A: For more known wine brands, consumers rely less on the price-perceived quality compared to less known wine brands.

$$\delta_{p(more\_knownbrand)} < \delta_{p(less\_knownbrand)}$$

H2B: For more known wine brands, consumers depend more on quality information compared to less known wine brands.

$$\theta_{more\_knownbrand} > \theta_{less\_knownbrand}$$

Word of Mouth

The Internet has redefined the Word of Mouth for personal referrals (Johnson 2007). Multiple social media outlets on the internet now provides avenues for consumers to voice their opinions and feedback about product and services that they had purchased. One such outlet would be Yelp.com, a user-generated review site/social network that has changed the way local businesses do their marketing. According to Nielsen/NetRatings, Yelp has 1.8 million users a month.

Effective word of mouth is customer-driven, not company-driven. (Macleod 2009). Word of mouth is typically from consumers claiming independence from media influence and content is largely decided by the contributor. The word of mouth feedback or comment when aggregated provides a valuable source of demographic and psychographic data along with consumer perception and experience of the purchase. Thus monitoring word of mouth, whether negative or positive, gives business owners valuable marketing feedback and at the same time it also indirectly provides cross sectional information about the purchase per feedback.

The perception of quality through word of mouth about a wine whether positive or negative from consumers is that it implies quality of the wine. As a consequence, this will mean that the higher perceived quality from positive word of mouth about a wine would be reflected in the price and hence increase the reliance on the price-perceived quality. In the case of more negative word of mouth, the objective information about the perceived quality would be heavily relied on as per loss aversion theory (Kahneman, Knetsch, Thaler (1991)). Thus we raise proposition 3:

P_3: Consumers rely more on the price-perceived quality for positive word of mouth about wine. Also the implied quality information through negative word of mouth means that the dependence on quality information is higher.

$$\delta_{p(-veWOM)} < \delta_{p(+veWOM)} \text{ and } \vartheta_{-veWOM} > \theta_{+veWOM}$$

In view of the proposition, the hypotheses for the empirical study are defined as follow:

H3A: For positive word of mouth on wine, consumers rely more on the price-perceived quality compared to negative word of mouth on wine.

$$\delta_{p(-veWOM)} < \delta_{p(+veWOM)}$$

H3B: For negative word of mouth on wine, consumers rely more on quality information compared to positive word of mouth on wine.

$$\vartheta_{-veWOM} > \theta_{+veWOM}$$

Empirical Analysis

Method

To empirically test the propositions, we conducted a survey on 108 randomly selected students from a university in the west coast of the United States. The students were full time working students taking night classes and who have reasonable disposable income to purchase wine for consumption. To empirically test H1A, the students were required to respond on a 9 point scale to the question "The higher the rating of a wine, how likely would price be a gauge of quality", and a list of wines with high ratings are provided. A similar question was also presented with a list of wines with low ratings. These 2 questions are each asked in 3 different ways are randomly placed throughout the survey. A respond of 1 will mean "Very Unlikely" while a 9 will mean "Very Likely".

For H1B, the students were required to respond on a 9 point scale to the question "The higher the rating of a wine, how likely would ratings be a gauge of quality", and a list of wines with high ratings are provided. A similar question was also presented with a list of wines with low ratings. These 2 questions are each asked in 3 different ways and randomly placed throughout the survey. A respond of 1 will mean "Very Unlikely" while a 9 will mean "Very Likely".

To empirically test H2A, the students were required to respond on a 9 point scale to the question "The more well known the brand of a wine, how likely would price be a gauge of quality", and a list of wines with known brands from award winning wineries are provided (we indicate award winning wineries). A similar question was also presented with a list of wines with unknown brands. These 2 questions are each asked in 3 different ways and randomly placed throughout the survey. A respond of 1 will mean "Very Unlikely" while a 9 will mean "Very Likely".

For H2B, the students were required to respond on a 9 point scale to the question "The more well known the brand of a wine, how likely would brand

perception be a gauge of quality", and a list of wines with known brands from award winning wineries are provided (we indicate award winning wineries). A similar question was also presented with a list of wines with unknown brands. These 2 questions are each asked in 3 different ways and randomly placed throughout the survey. A respond of 1 will mean "Very Unlikely" while a 9 will mean "Very Likely".

For H3A, the students were required to respond on a 9 point scale to the question "For positive word of mouth for a wine, how likely would price be a gauge of quality", and a sample of fictitious positive word of mouth excerpts about a wine is presented. A similar question was also presented with a sample of fictitious negative word of mouth excerpts. These 2 questions are each asked in 3 different ways and are randomly placed throughout the survey. A respond of 1 will mean "Very Unlikely" while a 9 will mean "Very Likely".

For H3B, the students were required to respond on a 9 point scale to the question "For positive word of mouth for a wine, how likely would word of mouth be a gauge of quality", and a sample of fictitious positive word of mouth excerpts about a wine is presented. A similar question was also presented with a sample of fictitious negative word of mouth excerpts. These 2 questions are each asked in 3 different ways and are randomly placed throughout the survey. A respond of 1 will mean "Very Unlikely" while a 9 will mean "Very Likely".

Results

T- tests are conducted on the data collected. The means of the data for the 2 questions corresponding to H1A were compared and tested. Similarly, the means for the other paired questions for the rest of the hypotheses were compared correspondingly. The signs of the output table will provide support for the hypotheses. Table 1 summarizes the statistical analysis output.

Table 1. Empirical Analysis Results Summary

Sig	Test Item	N	μ	σ	t
	H1A ($\delta_{p(HigherRating)} < \delta_{p(LowerRating)}$)	108	-2.163	2.447	-
5.815	0.000				
	H1B ($\theta_{HigherRating} > \theta_{LowerRating}$)	108	2.052	3.367	
	5.564 0.000				
	H2A($\delta_{p(higherbrand)} < \delta_{p(lowerbrand)}$)	108	-2.184	3.377	-
4.382	0.002				
	H2B($\theta_{higherbrand} > \theta_{lowerbrand}$)	108	2.356	2.918	
	6.967 0.000				
	H3A($\delta_{p(-WOM)} < \delta_{p(+WOM)}$)	108	1.661	2.958	
	4.327 0.003				
	H3B($\theta_{-WOM} > \theta_{+WOM}$)	108	-1.967	2.917	-
5.319	0.001				

The t-values for all 6 tests were significant and provided the correct signs for the 6 hypothesis. From our results, H1A, H1B, H2A, H2B, H3A and H3B are all supported.

Conclusion

In developing this article, we hope to provide a framework for discussion, action and empirical validation on the issue of wine perceived quality with respect to three factors; Ratings, Brand Perception and Word of Mouth. More consumers in developed and emerging markets are now being exposed to wine when they dine and a lack of knowledge about wine quality often would mean a reliance on the price to gauge quality.

Our findings indicate that for low wine ratings, consumers rely more on the price-perceived quality heuristics. This implies pricing for low rated wines will be sensitive, and sellers may need to raise the price to increase perceptive quality. However for wine with high ratings, consumers rely more on the wine information. Hence wine labels or literature needs to have more information available to support the high ratings.

For brand perception, when consumers perceive the brand as better, there is less reliance on price. Hence pricing is sensitive to the buyer for wines which are less well known. Sellers can actually raise the price here to increase perceptive quality. For wines with higher brand perception, more literature and information should be provided as consumers rely on it to justify their perception.

For word of mouth, when it is more positive for a wine, consumers will rely more on the price to gauge the quality. Hence sellers need to actually raise prices to support the positive word of mouth with respect to perceptive quality. When the word of mouth is negative, consumers now may actually need more information and this comes in the form of literature or information on labels.

Although our sample is limited to full time working students with reasonable disposable income to purchase wine, it provides exploratory findings on the price-perceived quality heuristics on wine. Future research can include a more extensive sample with consumers who are actually consuming wine in a restaurant or purchasing one at a liquor store.

Our research points to several ways that wineries and wine sellers can raise profitability levels through repositioning their marketing mix with respect to ratings and actual wine quality, brand name or word of mouth and viral marketing.

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