Unité Mixte de Recherche
MOISA
Marchés Organisations
Institutions Stratégies d'Acteurs

The influence of wine attributes on region of origin equity : An analysis of the moderating effect of consumer's perceived expertise

JP. PERROUTY, F. D'HAUTEVILLE, L. LOCKSHIN

Agro.M

CIHEAM-IAM.M

CIRAD

INRA

Associé : IRD Institut de recherche pour le développement

Working Paper N° 4 / 2005

The influence of wine attributes on region of origin equity: An analysis of the moderating effect of consumer's perceived expertise

Jean Philippe Perrouty
Doctoral student, UMR MOISA
Agro Montpellier, Place Pierre Viala
34060 Montpellier cedex 1
perrouty@ensam.inra.fr

François d'Hauteville
Professor, UMR MOISA
Agro Montpellier, Place Pierre Viala
34060 Montpellier cedex 1
hauteville@ensam.inra.fr

Larry Lockshin
Professor
School of Marketing,
University of South Australia
GPO Box 2471
Adelaide 5000
Larry.Lockshin@unisa.edu.au

Abstract :
A fairly broad consensus contends that the region of origin adds value in consumers' eyes. The results of this survey on 1 162 European wine purchasers show that the region of origin equity is significantly moderated by the other wine attributes. We show that relatively to "novices", these moderating effects are more important for "experts" consumers.

Keywords: Brand, Region of origin equity, Perceived expertise, Moderator effects, Discrete Choice Modeling

Résumé :
Un assez large consensus s'est établit pour considérer que les consommateurs accordent de la valeur à la région d'origine d'un vin. Les résultats de cette recherche portant sur 1 162 acheteurs européens de vin montrent que la valeur perçue de la région d'origine est significativement modérée par les autres attributs du vin. Nous montrons que ces effets modérateurs sont plus importants pour les consommateurs experts que pour les novices.

Mot-clés : Marque, Région d'Origine, Valeur perçue, Expertise perçue, Effets modérateurs, Choix discrets, Modélisation

Acknowledgements: This study has been financed by UMR Moïsa, Agro-Montpellier, and Inter-Rhône syndicat d'appellation. It has also received logistical and scientific support from the School of Marketing of the University South Australia (Adelaide). We would very much like to thank Isabella Chaney (Royal Holloway, UK), Adriano Profeta (Alte Akademie 14, Germany) and Christian Bosch (Marketmind, Austria), thanks to whom we have been able to collect the data for this paper.

A fairly broad consensus contends that the wine region of origin adds value in consumers' eyes as it represents a significant choice criterion (Gil and Sanchez, 1997, Quester and Smart, 1998, Tustin and Lockshin, 2001), for which consumers are prepared to pay the price (Schamel, 2000, Schamel and Anderson, 2001). As a general rule, all of these studies also recognise the fact that consumers attribute value to other signs of quality present on a wine label, whether it be the grape variety, price or brand. On the other hand, very few of them consider the hypothesis that the value of a region of origin can vary depending on other signals with which it is associated. To our knowledge, only Tustin and Lockshin (2001) take this factor into account and show that there are significant interactions between price level and type of region, but didn't find any between region of origin and brand (Tustin and Lockshin, 2001).

The results obtained by Tustin and Lockshin (2001) are quite surprising, insofar as it exists an extensive literature which shows that the country of origin equity is a function of the type of brand and the price level with which it is combined on the label (Chao, 1989, Cordell, 1992, 1993, Han and Terpstra, 1988, Wall, Liefeld and Heslop, 1991). Moreover, some other researches have shown that other attributes like warranties (Thorelli, Lim and Ye, 1988) or intrinsic attributes (Cordell, 1991) may well moderate significantly the country of origin equity.

In parallel, Van Ittersum (2001) has shown that the theoretical literature on country of origin is adequate and pertinent to analyse how the region of origin affects the consumer choice process.

Thus, we could expect that the region or origin equity is significantly moderated by the type of brand, the level of price and the other wine attributes with which it is combined on the wine label.

The aim of this paper is to show that the region of origin equity is significantly moderated by wine attributes, with significance or strength of this moderating effects depending on consumer expertise level.

In the first section we will discuss the theoretical underpinnings of attributes moderating effects on country of origin equity and the rationales leading to consider the influence of consumer expertise on the significance or strength of these moderating effects. In the second section we will present the research hypotheses and the methodology adopted to test them. The third section will deal with the discussion and analysis of results, before concluding with the contribution and limits of the research.

1. The theoretical underpinnings of brand and prices moderating effects

The brand strength hypothesis

The brand strength hypothesis is a common theoretical way to explain why it exists significant brand by country of origin interactions effects. Following this hypothesis, the country of origin effects will be stronger for products which carry weak brand names rather than strong ones.

In an experiment using the conjoint analysis method Cordell (1992) investigates the case of brands of watches where the company decides to manufacture in Pakistan (a country with low production costs), rather than in Germany, a country which enjoys an excellent reputation for manufacturing this type of product. The author shows that a well-

known brand will see its market share decrease only marginally (-6.5%), whereas the market share of a little known brand will decrease by a significant amount (XX%). In support of the brand strength hypothesis other empirical evidence is available on other dependant variables as willingness to pay (Cordell, 1993), perceived quality (Han and Terpstra, 1988), performance product attributes (Tse and Lee, 1993) or purchase intentions (Wall, Liefeld and heslop, 1991).

Cordell (1992) interpreted his findings in the light of the accessibility-diagnostic theoretical rationale. In this perspective, a quality cue is diagnostic if the consumer is familiar with it and diagnostic if it can help him to solve a choice problem (Feldman and Lynch, 1988). If the consumer want to asses the quality of a product, he can rely on a well known brand. If the brand is not well known, he will rely on other available cues, as the country of origin of the product. Thus, the country of origin will affect the choice process only if it is combined with a weak brand.

Moreover, other researches have shown that the strength hypothesis is adequate to explain how prices moderate the country of origin equity (Chao, 1989, Ahmed and d'Astous, 1993). As a general rule, weak countries of manufacture can compensate for their poor images by decreasing the price and , as a consequence, the purchase intentions will increase. Consistent with the strength theory, purchase intentions for goods manufactured in a country carrying a good image will be far less sensitive to price decrease. Finally, Thorelli, Lim and Ye (1988) have shown that a good warranty combined with a good store image can compensate for a poor country of origin image.

The congruity hypothesis

Haübl and Elrod (1999) suggest an alternative theory to the brand strength hypothesis. In their view, the extent of a relationship between brand and geographical origin depends on the perceived degree of fit between the brand and the country of production. Considerable value is added to the Rossignol ski brand, for example, when the skis are produced in France, rather than in Austria, Slovenia or Germany (Haübl and Elrod, 1999, p. 212). These findings are similar to those issued of another research, in

which it has been shown that the perceived product hedonism is significantly and positively influenced by the equality between the language of pronunciation of the brand and the country of manufacture (Leclerc, Schmitt and Dubé, 1994). Conversely, the perceived hedonism is negatively influenced when there is a discrepancy between the brand pronunciation and the country of manufacture. Chao (2001) examined the influence of various dimensions of country of origin on attitudes and intentions of purchase of televisions and stereos. They found that interactions between "country of assembly of components" and "country of design" significantly influence attitudes and intentions of purchase of stereos. Moreover, interactions between "country of assembly of components" and "country of production of components" significantly influence attitudes and intentions to purchase for televisions. All the interactions terms where consistent with the congruency hypothesis. For instance, televisions received higher intentions of purchase when the components where manufactured and assembled in the United States, rather than manufactured in Mexico and assembled in the United States.

The congruity theory can be explained within the brand equity framework, in which congruity is defined as *"the extent to which a brand association shares content and meaning with another brand association"* (Keller, 1993, p. 7). In this view, a brand can be associated with its home country (Keller, 1993, 2003, Thakor and Kohli, 1996) and when products are manufactured in another country, it lost a great part of its equity. For instance, some authors have suggested the watch brand Rolex is closely tied to Switzerland and that these two cues share meanings such as a long tradition of production, workmanship, technical skills and prestigious associations (Schweiger, Otter and Strebinger, 1997).

From a theoretical point of view, we suspect that the congruity hypothesis is particularly well suited to explain potential interactions effects between wine brand and wine region of origin. For example, Thode and Maskulka (1996) have suggested that country, appellation of origin and vineyard are important components of Californian wine brands. More recently, Australian authors have suggested that region or locality and wine brands are all parts of a system of cues in which the value of a cue depends not

only on the consumers' perception of the cue, but also on the presence or absence of other items of information on the label (Lockshin, Rasmussen and Cleary, 2000). Thus, we could expect that congruity effects will occur between wine brand and region of origin because consumers make strong associations between these two cues.

The refutation hypothesis

When formulating hypotheses about the moderating effects of brand and prices on country of origin equity, researchers must take into account the numerous studies who didn't find any interactions effects (Li, Monroe and Chan, 1994, Teas and Agarwal, 2000, Tse and Gorn, 1993, Ulgado and Lee, 1993). These studies report only insignificant or no empirical evidence of a relationship existing between a brand and the geographical origin of a product.

Moreover, some other researchers argue that relatively to principal cues effects, the strength of interactions effects marginally affect the consumers' choice process (Ettenson, 1993, Tse and Lee, 1993). As a consequence, the researchers could estimate only the principal effects of the cues.

The question of heterogeneity

The previous review of the literature have shown that the products geographical origin equity can be broken in two components : the principal effect of the country (or region) of origin and the moderating effects of brand and price levels. However, some research have refuted the existence of these moderating effects.

In our view, a significant caveat to be added to these studies is that they do not take into account consumer heterogeneity in the explanation of the relative extent of these two components. All of these studies aim to explain the presence or absence of interactions effects between products' attributes and a geographical origin simply by taking into account the nature of the signal. However, some studies have suggested that consumers' heterogeneity could account for some parts of the interactions effects.

In an intercultural study using conjoint analysis, Ettenson (1993) shows that the inclusion of relationships between the brand and the country of manufacture can allow us

to better explain the choices of only 29% of the polish sample and 27% of Russian and Hungarian samples. In their research, Haübl and Elrod (1999) have shown that the standard deviations for interactions parameters are stronger than brand and country of manufacture principal effects standard deviations.

The main interest of this results is therefore to suggest that the relationships between product attributes are valued by only particular consumer segments, without indicating clearly the nature of the individual discriminating variable factor of these groups. The second section will now deal with highlighting one or several variables which may explain the relative influence granted by consumers to the moderator effects of products' attributes on the region of origin equity.

2. The consumer knowledge hypothesis

We have shown that on the theoretical ground, interactions effects can be explained by the accessibility-diagnostic and congruity theories. We shall now review the influence of consumer expertise on the valuation process of product attributes, given both theories. But before that, let us briefly present the concept of consumer knowledge.

The concept of consumer knowledge

Consumers' knowledge can be split into two broad categories: familiarity which represents the accumulated number of experiences with the product, and expertise, which corresponds to the capacity of successfully carrying out tasks linked to the product (Alba and Hutchinson, 1987).

As Park, Mothersbaugh and Feick (1994) stated, consumers' experiences lead to the acquisition of increased expertise in the class of products. "Experts" can be distinguished from "novices" in two respects :; according to their knowledge structure and the way they use this knowledge in evaluation tasks and choice. Compared with novices, experts are more knowledgeable regarding the product category and the cognitive structures encompassing this knowledge are both richer and organized around a greater number of dimensions (Mitchell and Dacin, 1996).

Furthermore, experts make use of more attributes than novices to evaluate and choose a product and they do not use the same attributes to evaluate different brands (Mitchell and Dacin, 1996, p. 229). Given that they have more highly developed cognitive structures than novices, these results demonstrate that experts tend to evaluate different products belonging to the same class according to different attributes. In a previous study Selnes and Troye (1989) showed that after the information-seeking phase, experts will decide on the evaluation criteria they will employ, in particular in terms of type of attributes used and relationships between these attributes, before moving onto the product evaluation phase. On the other hand novices often move from the information-seeking phase directly to the evaluation phase (*ibid.*). These results suggest therefore that novices tend to form their judgment based on a global and holistic evaluation of available information, whereas experts process the information in a deeper and more detailed way, in particular concerning relationships between attributes. This hypothesis has important consequences for the study of brand and price moderating effects on product origin equity, as we will show in the next two sections.

Consumer knowledge and the accessibility-diagnostic theory

Rao and Monroe (1988) examined the way high and low knowledge consumers use the price and intrinsic attributes to judge products quality. They included both attributes principal and interactions effects as independent variables in the data analysis. The results clearly showed that relatively to the novices' group, these interactions effects are higher for experts consumers. The authors interpreted this finding by arguing that experts use the price only when intrinsic attributes are not sufficiently diagnostic to allow them to judge correctly the product quality. However, novices does not have this knowledge and use attributes independently of their diagnostic value.

Maheswaran (1994) measured the effects of both the intrinsic attributes and country of origin on the product consumers' product judgement process. They showed that when intrinsic attributes are ambiguous (*i.e.* not highly diagnostic), expert consumers use country of manufacture to make a judgement on the product. When intrinsic attributes

are unambiguous, experts will focus their attention on intrinsic attributes , while novice consumers always use country as the main cue to judge the product.

Thus, we can expect that if accessibility-diagnostic theory is pertinent to explain the moderator effects of brand and price on region of origin equity, these interactions effects will be significant and strong in the experts segment. Because novices do not have the relevant knowledge, they always use the country of manufacture to make a judgement, whatever is the diagnostic value of intrinsic cues. As a consequence, interactions effects should not be significant, or should be very weak, in the novices' segment.

Consumer knowledge and the congruity hypothesis

The concept of congruity is very similar to the concept of fit in the brand extension literature. In this view, a good fit indicates that the original product and the product in extension share similar associations and that the consumer makes a judgement about the extension by taking into account both his attitude toward the brand and the fit between the two products (Aaker and Keller, 1990).

Park, Milberg and Lawson (1991) have shown that a good fit can be explained by both the product fit and the brand fit : the brand in extension should share similar associations with the original brand.

Other researches have focused their attention on the effects of consumer knowledge on the evaluation of brand extension. Two of them have shown that when evaluating the extension, high knowledge consumers give a high weight to the brand-fit rather than to the attitudes toward the brand (Broniarczyk and Alba, 1994, Gregan-Paxton, 2001). Conversely, novices focus their attention on their attitudes toward the brand, which determine for a large part the evaluation of the extension.

Finally, Simonin and Ruth (1998) have shown that relatively to the attitudes toward the brand, the importance of brand-fit in the evaluation of the extension of a co-branded product is higher in the high knowledge consumers group. Conversely, the

relative importance of the attitudes toward the two brands is higher in the low knowledge consumers group.

The main interest of the previous studies is to show that by acquiring knowledge in a product category through their experience, consumers give a relatively increasing influence to the brand fit in evaluating a direct brand extension or a co-branded product extension. Insofar as the concept of brand-country congruity is very close from the concept of brand-fit, we could expect that , relatively to low knowledge consumers, this congruity effect is higher for high knowledge consumers.

3. Synthesis and research hypotheses

We have shown in a first section that the moderating effect of product attributes on the product geographical equity can be explained by both accessibility-diagnostic and congruity theories. In the second section, we have presented theoretical and empirical evidences showing that these two theories are likely to hold only for high knowledge consumers.

Based on this literature, we can form the general hypothesis that the degree of consumers' expertise is a moderating variable of the relative influence of the product attributes moderating effects on a wine region equity. The next part of this paper therefore deals with the discussion of the research hypotheses and the methodology employed to test them.

Research hypotheses

Following Keller (1993, p. 8), the region of origin of a product will have positive (negative) equity if consumers react more (less) favorably to the other product attributes than they do to the same mix of attributes, but without the presence of the region of origin. The country of origin literature review suggested that the geographical origin

equity is significantly moderated by the other attributes of the product. Thus, we develop the hypothesis that region of origin equity is significantly moderated as follows :

Hypothesis 1 : the region of origin equity can be explained by its principal effect on the one hand and by the other attributes of the product moderator effects on the other hand.

We have developed a general hypothesis whereby the perceived expertise of a consumer is likely to explain the significance and/or the strength of the attributes moderator effects. A pre-requisite for this hypothesis is that it exists significant differences in the way experts and novices consumers value wine choice cues. Therefore, these two considerations lead us to formulate the two following hypothesis:

Hypothesis 2 : it exists significant differences in the valuation process of wine choice cues between experts and novices consumers.

Hypothesis 3: relatively to novices, the products' attributes moderator effects on region of origin equity is stronger for experts consumers.

4. Methodological framework of the research

Selection of the discrete choice modeling methodology

Our study focuses on the level of choice, i.e. at the level of the final stage of the decision-making process.

The research hypothesis involves the selection of a methodology that is able to measure both the wine region of origin influence on consumer choice and the moderator effects of product attributes on this influence. Thus, the methodology should be able to measure the interactions effects between the region of origin on the one hand and other attributes on the other hand. We adopt the methodology of discrete choice modeling because it enables us to measure both of these effects, as it has been shown in brand equity researches (Erdem *et alii*, 1999, Rangaswamy, Burke and Oliva, 1993).

This approach is based on the theory of random utility, which formulates the hypothesis according to which preferences can be measured by means of the latent utility concept. McFadden (1973) extends Thurstone's paired comparison to multiple comparisons, hypothesizing that the random component of utility is distributed according to Gumbel's Law, which leads to statistical processing by means of the *« Multinomial Logit »* model. This method was then tested and developed within the framework of transport economics (Louviere and Woodworth, 1983). According to this approach the total utility of an alternative in a bundle of choices can be divided according to two dimensions (Louviere, Hensher and Swait, 2000, p. 38):

$$U_{iq} = V_{iq} + \varepsilon_{iq}$$

U_{iq} represents the utility of the i^{th} alternative for the q^{th} individual, V_{iq} the systematic component of utility, i.e. the utility evaluated by the consumer and ε_{iq} the random component of utility, i.e. the error estimation of the utility measurement by the method of evaluated preferences. V_{iq} represents the utility of the alternative, which can be expressed in the following form[1]:

$$V_{iq} = \sum \beta_{ik} X_{ikq}$$

β_{ik} is the parameter associated by the q^{th} individual to the k^{th} attribute of the i^{th} alternative and X_{ikq} is a vector of the k attributes of the i^{th} alternative presented to the q^{th} individual (Louviere, Hensher and Swait, 2000, p. 49). A parameter is therefore associated to each attribute of the alternative, which corresponds to the perceived utility of the level of attribute present in the alternative. Expressed more simply and when the functions of the relationships are included in the model, the previous equation becomes (Rangaswamy, Burke and Oliva, 1993) :

U (Product) = U (physical attributes) + U (brand) + U (brand*physical attributes)

[1] This supposes an additive model, i.e. without interactions

The utility of a product is therefore the sum of the perceived utility of the product physical attributes, the brand perceived value, and the perceived utility of the interactions effects between the brand and physical attributes. By extension, we represent therefore region of origin equity by means of the following expression:

$$U(\text{region}) = U(\text{region X}) + U(\text{region} * \text{attributes})$$

U (region) represents the total equity of the region, U (region X) the value accorded to its direct effect and U (region*attributes) the interactions between the region and a product attribute, which corresponds to the moderating effects of the later on the previous.

Data collection and processing

The data was collected in supermarkets via face-to-face surveys with French, German, Austrian and British consumers, who had bought at least one bottle of wine during the previous month. The questionnaire was composed of three parts: the first and final parts consisted of closed questions seeking to collect personal data (perceived expertise, age, involvement etc.). In the second part each respondent was required to make 15 choices, each task consisting of choosing a wine label from three offered. Each label contains a brand, a region, the absence or presence of a grape variety, type of bottler and price level. The main objective of this procedure was to simulate in the most realistic way possible a normal purchasing environment. Therefore, the option "I would choose none" was available in each set of options. We tested six different levels for "brand" attribute, six regions, two levels of grape variety (absence or presence), four levels of bottler and three price levels[2]. Since the surveys were carried out in four different countries, four brands and four regions are identical in each country, and two brand and two regions are specific to each of them, the reason being to test brands and regions which are well-known and little known in each country (locally). For example, two

[2] See Annex 1

German brands and two German regions were specific to Germany. The collected data was then entered into Excel and imported into CBC Sawtooth Software.

In order to test whether the interactions effects are significant or not we have followed the methodology suggested by Louviere, Henscher and Swait (2000). We begin by calculating the maximum likelihood (LL0) of a model without interactions effects (with only principal effects) for the whole of the sample. This model is then used as reference model (or zero model). We then calculate the maximum likelihood (LL1) for a model which this time includes interactions effects. Wilks (1962) shows that twice the difference between these two maximum likelihoods (2*[LL1-LL0]) is distributed according to the law of χ^2. If the test allows us to reject the zero hypothesis we can therefore conclude that the inclusion of the interactions effects significantly improves the goodness-of-fit of the model and therefore the explanation of the choices.

The examination of the hypothesis 3 require to test whether it exists significant differences in the valuation process of wine choice cues between experts and novices consumers. In order to test this hypothesis we employ the same methodology used to test relationships. The reference model used is the one which analyses the choices of the entire sample, resulting in a first maximum likelihood (LL0). Next we analyze the choices *(Multinomial Logit)* for the following three samples: the "very expert" (n=389), the "moderately expert" (n=348) and the "novices" (n=375). These three analyses result in three new maximum likelihoods, respectively LL1, LL2 and LL3. We then calculate the following formula: $2*((LL1+LL2+LL3)-LL0)$[3] which is distributed according to a law of χ^2.

Measurement of perceived expertise

In order to measure consumers' expertise level, we could use an objective or a perceived measure. In their research on the effects of expertise in wine choice, Aurier and Ngobo (1999) have shown that perceived expertise is a better predictor of the type of

[3] We would very much like to thank Professor Jordan Louviere (University of Sydney) for having suggested this procedure during discussions on this study in May 2003.

cues consumers use while choosing a wine. Thus, we will measure perceived expertise to form the experts and novices groups.

We measured consumers perceived expertise using four items taken from Flynn and Goldsmith's six-point scale (Flynn and Goldsmith, 1999). Use of this scale in an international framework and based on wine preferences has enabled us to reduce it to four items (d'Hauteville and Goldsmith, 1998):

Insert Table 1

In order to construct a composite measurement from these four items, we carried out an analysis of principal component which suggests that the measurement appears to be both valid and reliable. The main axis presents a real value of 2,487 and gives 62,17% of total variance. The Cronbach alpha is 0,79 and deteriorates if we omit one of the items. The sample was split into three sub-samples, each of them corresponding to specifics expertise score range[4] :

Insert Table 2

5. Research results

The total sample size is 1 162 respondents, divided equally between the four countries (approximately 25% from each of them). 48.30% of the sample is under 35 years of age, 55,20% being men and 43,20% of the respondents consume wine more than once per week.

[4] As suggested by Quester and Smart (1998), the experts group is composed of the top 40% of respondents who obtained the highest scores of perceived expertise. The novices group is composed of the 40% of respondents how obtained the lowest scores. This methodology should provide a purified measure of consumers' perceived expertise.

Hypothesis 1

Here we hypothesize that the region of origin equity can be explained by its principal effect on the one hand and by the other product attributes moderator effects on the other hand.

Therefore we test first a model without interactions effects (reference model), then we check that the inclusion of a relationship function leads to a significant improvement in the maximum likelihood of the reference model. The following results were obtained (n=1 162):

Insert Table 3

As shown by χ^2 values, we can reject the null hypothesis relative to the effects of region of origin (χ^2 = 1 568, df = 5, sign < 0,005), which means that the inclusion of this factor significantly improves the goodness-of-fit of the model. We can therefore conclude that consumers give value to the region of origin of a wine.

On the interactions effects side, we can reject null hypothesis relatively to the interaction "region of origin x brand" (χ^2 = 64,08, dl = 25, sign < 0,005) on the one hand and "region of origin x varietal" (χ^2 = 20,16, dl = 5, sign. < 0,005) on the other hand. It can be concluded that brand and varietal significantly moderate the region of origin influence on consumer choice process, i.e. region of origin equity.

However, we cannot reject the null hypothesis relative to the interactions "region of origin x price" (χ^2 = 13,60, dl = 10, sign > 0,1) and "region of origin x bottler" (χ^2 = 23,68, dl = 15, sign > 0,05). Thus, Bottler and price do not seem to moderate region of origin equity.

Insofar as two interactions effects are significant, we can conclude that H1 is partly validated.

The other results show that we can reject the null hypothesis for the effects of brand (χ^2 = 62,98, df = 5, sign < 0,005), price (χ^2 = 204,18, df = 2, sign < 0,005), bottler (χ^2 = 145,64, df = 3, sign < 0,005) and varietal (χ^2 = 79,82, dl = 1, sign < 0,005). This means that consumers give value to all of this four wine choice cues.

Hypothesis 2

Hypothesis 2 suggests that experts and novices value differently wine choice cues. After having estimated three discrete choice models for each of the three groups of consumers, we check that this segmentation significantly improve the overall model goodness-of-fit. The following results are obtained:

Insert Table 4

The division of the sample into three distinct segments, as well as its test in relation to the reference model leads to the rejection of the null hypothesis (χ2 = 470,28, dl = 42, α < 0,005). Consideration of the perceived expertise of consumers results in a significant improvement in the goodness-of-fit of a wine choice model. **Hypothesis 2 is therefore validated.**

Hypothesis 3

Hypothesis 3: relatively to novices, the products' attributes moderator effects on region of origin equity is stronger for experts consumers.

Here we formulate the hypothesis that the relative influence of the attributes moderator effects on region of origin equity is greater is greater in the case of "experts" than in the group of "novices".

Concerning the experts, the following results were obtained:

Insert Table 5

Concerning the interactions effects, the null hypothesis about "ROO x Brand" (χ^2 = 68,18, dl = 30, sign. < 0,005), "ROO x Price" (χ^2 = 18,72, dl = 10, sign. < 0,05) and "ROO x Varietal" (χ^2 = 17,82, dl = 5, sign. < 0,005) can be rejected. However, the null hypothesis relative to the interaction effect "ROO x Bottler" cannot be rejected (χ^2 = 18,86, dl = 15, sign. > 0,10).

Note that conversely to other main effects, we cannot reject the null hypothesis postulating that brand parameters are not significantly different from 0 (χ^2 = 9,66, dl = 5, sign. > 0,05). We will interpret this finding in the research results synthesis.

For the novices, the following results were obtained:

Insert Table 6

We can confidently reject the null hypothesis concerning the interactions effects "ROO x Bottler" (χ^2 = 29,20, dl = 15, sign. < 0,025) and "ROO x Varietal" (χ^2 = 16,52, dl = 5, sign. < 0,01). This means that for novices consumers, region of origin equity is significantly moderated by the bottler and the varietal. However, the brand (χ^2 = 32,82, dl = 25, sign. > 0,10) and the price (χ^2 = 11,34, dl = 10, sign. > 0,10) don't moderate the region of origin effects on consumer choice process.

Note that concerning the main effects, all the null hypothesis can be rejected at acceptable levels of confidence.

In order to evaluate the influence of the interactions effects in the choice, we proceed in the same way as in the case of conjoint analysis, by calculating the difference between maximum and minimum utilities of each function. The following results were obtained:

Insert Table 7

For experts consumers, the region of origin is the most important cue in consumer choice process (18,81%). But this main effect must be qualified by the three significant interactions terms, which account for 43,90% of the total effects. For novice consumers, the interactions effects account for only 23,79% of the total effects.

We can infer from these results that wine attributes moderator effects on region of origin equity are weaker for novices consumers and **H3 is therefore validated**.

Complementary results

The empirical results have shown that the moderator effects of wine attributes on region of origin are stronger in the experts group. One very interesting finding of this study is the role of wine brand and price in the wine choice process. This results can be summarized in the following figure:

Insert Figure 2

As shown on the previous figure, brand and price intervene very differently in the choice process of expert and novice consumers.

For the novices, the brand and the price don't moderate the region of origin equity and their effects on the wine choice are limited to their principal effects. Thus, we can conclude that novices give value to the region of origin independently of the type of brand and of the level of the price.

For experts, price intervene through both its principal effect and as a moderator of the region of origin equity. Interestingly, the results suggest that for experts consumers, the brand is a perfect moderator of the region of origin equity. Moreover, the relative importance show that the brand exert the strongest moderator effect on the region of

origin equity. The following table present an exhibit of the interactions parameters between the brand and the region of origin :

Insert Table 8

The main effect of the Barossa Valley, Côtes-du-Rhône and the local low awareness region are significant, which means that these three region are diagnostic. However, these three region are affected by interactions effects. These results are clearly contradictory with the accessibility-diagnostic theory which predict that only non-diagnostic region of origin will be affected by interactions effects.

For all the regions, their value diminishes when they are associated with a brand of a different nationality and improve when they are associated with a brand of the same nationality. This finding support the work of Haübl and Elrod (1999) and suggest that for experts consumers, the congruency theory is adequate to describe how wine brand affect the region of origin equity.

6. Conclusion

The aim of this study was to show that taking into account wine attributes moderating effects on region of origin equity can lead to a better understanding of consumers wine choice.

Before commenting on the contributions of this work, we should point out the limits of this research. We should first of all carry out complementary analyses to corroborate the inter-cultural validity of these results. The question we must ask is double-edged: Is the division of a regional value into two components, direct and interactions, corroborated when the results of the four tested countries are compared? Furthermore, does perceived expertise systematically play a role of moderating variable of the relative influence of the associative component? We must further stress the fact

that we only envisage a situation with choices: the consumers interviewed had to choose between three wines for a particular type of consumption (”dinner this evening with friends”). On the basis of this analysis of French consumers’ choices, Philippe Aurier shows that the consumption context is a discriminating variable in the equity development of the information available at the time of choice (Aurier, 1997). Quester and Smart (1998) obtained similar results in the context of Australian consumers. The study of the influence of intended consumption context at time of choice represents an area of research which should contribute to an improved understanding of the development of region of origin equity.

Despite its limits the benefits of our study can in our view be considered both at a conceptual level, as well as at the level of regions and wine brands management.

At the conceptual level we show that consumer expertise is a moderating variable of the relative influence of a region of origin associative component. In our view the main benefit of this result is that it shows that the significance of the relationship which can occur between geographical origin and other product attributes is not only dependent on the nature of the signal. As other authors have already pointed out, taking into account the consumer knowledge is important if the researcher want to better understand the brand strength hypothesis (Maheswaran, 1994, Rao and Monroe, 1988) or the brand fit theory (Broniarczyk and Alba, 1994, Simonin and Ruth, 1998).

In a similar way we believe that perceived expertise can also lead to a better understanding of how brands and regions of origin are perceived and valued. In particular, the results of the research suggest that during their learning process consumers accord a decreasing degree of value to regions, brands or prices alone and an increasing degree to combinations between these signals.

One interesting finding is that despite its small effect, bottler exert a moderating effect on region of origin equity only for novice consumers. We could have expected the reverse on the theoretical ground, insofar as this moderating effect should be stronger for

expert consumers. We suggest that novices give extra-attention to wine origin cues, like the bottler, but that when they increase their knowledge in the wine category, their interest in interactions shift from the bottler to other wine choice cues, like brand and prices. This suggestion provides an interesting track for future researches.

At the management level we show that there is a consumer segment which values brands and regions of origin when they present particular combinations. For the most expert consumers, for example, the Côtes du Rhône region is valued most highly when it is associated with the brand « Cellier des Dauphins », but depreciated when it is combined with « Jacob's Creek ». Cellier des Dauphins is therefore an association which adds value to the Côtes du Rhône region, as well as a French brand which can add value to a French region of origin, as an Australian brand can add value to an Australian region. Wine brands are often presented as a means of reaching consumer segments which do not have the necessary knowledge to decode wine quality signals which have become too complex, in particular *appellations d'origine* (Berthomeau, 2001, Kapferer, 1990, Lockshin, Rasmussen and Cleary, 2000). We suggest that the more expert consumers can also be interested in brands which do not oppose them to the region, but combine the brands with the region.

ANNEX 1 : RESEARCH DESIGN

	France	Allemagne	Autriche	Grande-Bretagne
Region of Origin	1. Coteaux du Layon 2. Barossa Valley 3. Southeast Australia 4. Côtes du Rhône 5. Uruguay 6. Italie	1. Coteaux du Layon 2. Barossa Valley 3. Southeast Australia 4. Côtes du Rhône 5. Pfalz 6. Franken	1. Coteaux du Layon 2. Barossa Valley 3.Southeast Australia 4. Côtes du Rhône 5. Donauland 6. Wachau	1. Coteaux du Layon 2. Barossa Valley 3. Southeast Australia 4. Côtes du Rhône 5. Uruguay 6. California
Brand	1. Jacob's Creek 2. Hardy's Stamps 3. Mouton Cadet 4. Cellier des Dauphins 5.Vieux Papes 6. Beaumanoir (Carrefour)	1. Jacob's Creek 2. Hardy's Stamps 3. Mouton Cadet 4. Cellier des Dauphins 5. Rebian 6. Classic	1. Jacob's Creek 2. Hardy's Stamps 3. Mouton Cadet 4. Cellier des Dauphins 5.Servus 6.Katzensprug	1. Jacob's Creek 2. Hardy's Stamps 3. Mouton Cadet 4. Cellier des Dauphins 5. Blossom Hill 6. Montana
Varietal	1. Cabernet-Sauvignon 2. …..	1. Cabernet-Sauvignon 2. …..	1. Cabernet-Sauvignon 2. …..	1. Cabernet-Sauvignon 2. …..
Bottler	« Mis en bouteille… : 1. à la coopérative 2. à la propriété 3. par Castel Frères 4. par Carrefour	1. Racke 2. Lorch Weingut 3. Peter Mertes 4. Abfüller : Kaufland	1. Winzer Krems 2. Weingut Bauer 3. Lenz Moser 4. Abfüller : SPAR	1. bottled by the cooperative 2. Estate Bottled 3. Bottled by the Orlando Group 4. Bottled by the retailer
Price	1. 1,9 € (12,5 francs) 2. 3,5 € (23 francs) 3. 6,9 € (45 francs)	1. 2,49 € 2. 3,99 € 3. 6,19 €	1. 2,5 € 2. 4,5 € 3. 7,5 €	1. 3,49 € 2. 4,99 € 3. 7,49 €

FIGURES AND TABLES

Figure 1: the items of perceived expertise

"I don't understand much about wine"
"I feel competent about in my knowledge of wine"
"Among my friends, I am the one who is the wine expert"
"Compared to others, I know less about the subject of wine"

Scales from 1 (strongly disagree) to 7 (strongly agree)

Table 1: General presentation of sub-samples "experts" and "novices"

Group	Perceived expertise mean scores	Sub-sample size	% of the overall sample
Experts	[1,00 ; 3,50]	476	41,0%
Moderately experts	[3,75 ; 4,00]	210	18,0%
Novices	[4,25 ; 7,00]	476	41,0%

Table 3: Evaluation of discrete choice models on the overall sample

Discrete choice models	Maximum Likelihood	χ^2 value	Degrees of freedom	χ^2 threshold value	Null hypothesis accepted/rejected
Null Model	- 22 290,22				
Region of Origin (ROO)	-21 506,22	1 568	5	11,07	Rejected
Brand	-21 474,73	62,98	5	11,07	Rejected
Price	-21 372,64	204,18	2	5,99	Rejected
Bottler	-21 299,82	145,64	3	7,81	Rejected
Varietal	-21 259,86	79,92	1	3,84	Rejected
ROO*Brand	-21 227,82	64,08	25	37,65	Rejected
ROO*Price	-21 221,02	13,60	10	18,31	Accepted
ROO*Bottler	-21 215,98	23,68	15	25	Accepted
ROO*Varietal	-21 217,74	20,16	5	11,07	Rejected

Table 4: The evaluation of convergent validity of "experts" and "novices" discrete choice models

Model	Sample size	Maximum Likelihood	Degrees of freedom
Total	1 162	-21 206,73	61
Experts	476	-8 214,38	51
Moderately experts	210	-3 874,58	16
Novices	476	-8 882,63	36
χ^2 value		470,28	42

Table 5: Evaluation of discrete choice models for expert consumers

Discrete choice models	Maximum Likelihood	χ^2 value	Degrees of freedom	χ^2 threshold value	Null hypothesis accepted/rejected
Null model	-9 091,31				
Region of Origin (ROO)	-8 360,51	1 461,60	5	11,07	Rejected
Brand	-8 355,68	9,66	5	11,07	Accepted
Price	-8 322,51	76,00	2	5,99	Rejected
Bottler	-8 290,16	111,56	3	7,81	Rejected
Varietal	-8 266,73	46,86	1	3,84	Rejected
ROO*Brand	-8 232,64	68,18	30	43,77	Rejected
ROO*Price	-8 223,28	18,72	10	18,31	Rejected
ROO*Bottler	-8 213,85	18,86	15	25	Accepted
ROO*Varietal	-8 214,37	17,82	5	11,07	Rejected

Table 6: Evaluation of discrete choice models for novice consumers

Discrete choice models	Maximum Likelihood	χ^2 value	Degrees of freedom	χ^2 threshold value	Null hypothesis accepted/rejected
Null Model	-9 181,42				
Region of Origin (ROO)	-9 062,25	238,34	5	11,07	Rejected
Brand	-9 040,25	44,00	5	11,07	Rejected
Price	-8 950,16	180,18	2	5,99	Rejected
Bottler	-8 916,84	66,64	3	7,81	Rejected
Varietal	-8 905,48	22,72	1	3,84	Rejected
ROO*Brand	-8 889,07	32,82	25	37,65	Accepted
ROO*Price	-8 899,81	11,34	10	18,31	Accepted
ROO*Bottler	-8 890,88	29,20	15	25	Rejected
ROO*Varietal	-8 882,62	16,52	5	11,07	Rejected

Table 7: The relative importance of principal and interactions wine choice cues effects for expert and novice consumers

	Model	
	Experts	**Novices**
Principal effects		
Region of origin (ROO)	18,81%	21,24%
Brand	*(non significant effect)*	11,66%
Price	12,52%	20,36%
Bottler	15,60%	16,03%
Varietal	9,17%	6,92%
Interactions effects		
ROO x Brand	23,74%	*(non significant effect)*
ROO x Varietal	8,17%	10,66%
ROO x Price	11,99%	*(non significant effect)*
ROO x Bottler	*(non significant effect)*	13,13%
Total effects	100,00%	100,00%

Figure 2: the effects of brand and price on experts and novices wine choice processes

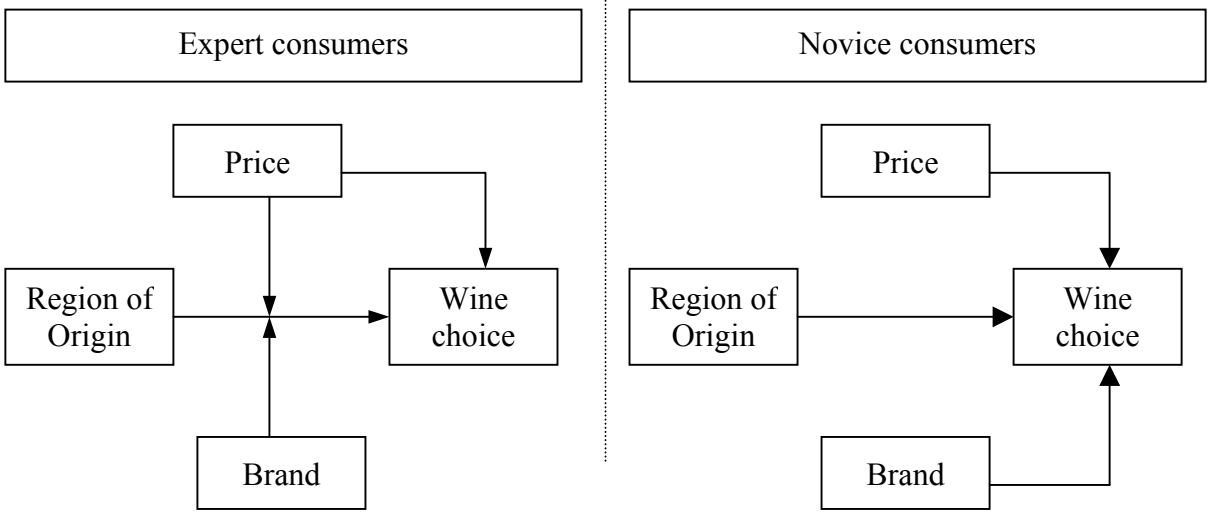

Table 8: The moderating effects of wine brand on region of origin equity for expert consumers

Region of origin principal effects	
Barossa Valley	-0,156 (-3,565)
Côtes-du-Rhône	+0,396 (+10,523)
Local low awareness	-0,142 (-3,304)
Interactions effects	
Jacob's Creek x Southeast Australia	+0,205 (+2,219)
Jacob's Creek x Côtes-du-Rhône	-0,243 (-2,614)
Hardy's Stamps x Coteaux du Layon	-0,236 (-2,398)
Hardy's Stamps x Côtes-du-Rhône	-0,149 (-1,65)
Hardy's Stamps x Southeast Australia	+0,339 (+3,567)
Cellier des Dauphins x Côtes-du-Rhône	+0,189 (+2,215)
Cellier des Dauphins x Local low awareness region	-0,321 (-3,091)
Local low awareness brand x Southeast Australia	-0,358 (-3,369)

BIBLIOGRAPHIC REFERENCES

Aaker D. A. and Keller K. L. (1990), Consumer evaluations of brand extensions, *Journal of Marketing*, 54, 1, 27-41.

Ahmed S. A. and d'Astous A. (1993), Cross-national evaluation of made-in concept using multiple cues, *European Journal of Marketing*, 27, 7, 39-52.

Alba J. W. and Hutchinson J. W. (1987), Dimensions of consumer expertise, *Journal of Consumer Research*, 13, 4, 411-454.

Aurier P. (1997), Structure des buts du consommateur et schémas de substituabilité perçue : application à l'étude de la situation du vin dans l'univers des boissons, *Economies et Sociétés, Développement Agro-Alimentaire*, 9, 23, 69-94.

Aurier P. and Ngobo P.-V. (1999), Assessment of consumer knowledge and its consequences: a multi-component approach, *Advances in Consumer Research*, 26, 1, éds. E. Arnold et L. Scott, Provo, Utah, Association for Consumer Research, 569-575.

Berthomeau J. (2001), Comment mieux positionner les vins français sur les marchés d'exportation ?, rapport remis au ministre français de l'agriculture et de la pêche, le 31 juillet 2001.

Broniarczyk S. M. and Alba J. W. (1994), The importance of the brand in the brand extension, *Journal of Marketing Research*, 31, 2,214-228.

Chao P. (1989), Export and reverse investment: strategic implications for newly industrialized countries, *Journal of International Business Studies*, 20, 1, 75-91.

Chao P. (2001), The moderating effects of country of assembly, country of parts, and country of design on hybrid product evaluations, *Journal of Advertising*, 30, 4, 67-81.

Cordell V. V. (1991), Competitive context and price as moderators of country of origin preferences, *Journal of the Academy of Marketing Science*, 19, 2, 123-128.

Cordell V. V. (1992), Effects of consumer preferences for foreign sourced products, *Journal of International Business Studies*, 23, 2, 251-269.

Cordell V. V. (1993), Interactions effects of country of origin with branding, price, and perceived performance risk, *Journal of International Consumer Marketing*, 5, 2, 5-20.

d'Hauteville F. and Goldsmith R. E. (1998), Measuring cross cultural acceptance of an innovation: the case of low-alcohol wine, *New Developments and Approaches in Consumer Behaviour Research*, eds. Indo Balderjahn, Claudia Mennicken and Eric Vernette, Stuttgart, Schäffer-Poeschel Verlag, 289-305.

Erdem T., Swait J., Broniarczyk S., Chakravarti D., Kapferer J. N., Keane M., Roberts J., Steenkamp J.-B. M. E. and Zettelmeyer F. (1999), Brand equity, consumer learning and choice, *Marketing Letters*, 10, 3, 301-318.

Ernst & Young (2001), Etude de la position de l'offre française et de la compétitivité à terme : rapport de synthèse final, Villeurbanne.

Ettenson R. (1993), Brand name and country of origin effects in the emerging market economies of Russia, Poland and Hungary, *International Marketing Review*, 10, 5, 14-36.

Feldman J. M. and Lynch J. G. (1988), Self-generated validity and other effects of measurement on belief, attitude, intention, and behavior, *Journal of Applied Psychology*, 73, 3, 421-435.

Flynn L. R. et Goldsmith R. E. (1999), A short, reliable measure of subjective knowledge, *Journal of Business Research*, 46, 1, 56-66

Gil J. M. and Sánchez M. (1997), Consumer preferences for wine attributes : a conjoint approach, *British Food Journal*, 99, 1, 3-11

Gregan-Paxton J. (2001), The role of abstract and specific knowledge in the formation of product judgments: an analogical learning perspective, *Journal of Consumer Psychology*, 11, 3, 141-158.

Han C. M. and Terpstra V. (1988), Country-of-origin effects for uni-national and bi-national products, *Journal of International Business Studies*, 19, 2, 235-255.

Häubl G. and Elrod T. (1999), The impact of congruity between brand name and country of production on consumers' product quality judgments, *International Journal of Research in Marketing*, 16, 3, 199-215.

Kapferer J.-N. (1990), Une opposition idéologique : le produit ou la marque ?, *Revue Vinicole Internationale*, mars 1990, 84-85

Keller K. L. (1993), Conceptualizing, measuring, and managing customer-based brand equity, *Journal of Marketing*, 57, 1, 1-22.

Keller K. L. (2003), Brand synthesis : the multidimensionality of brand knowledge, *Journal of Consumer Research*, 29, 4, 595-600

Leclerc F., Schmitt B. H. and Dubé L. (1994), Foreign branding and its effects on product perceptions and attitudes, *Journal of Marketing Research*, 31, 2, 263-270.

Li W.-K., Monroe K. B. and Chan D. K.-S. (1994), The effects of country of origin, brand, and price information: a cognitive-affective model of buying intentions, *Advances in Consumer Research*, 21, 1, eds. Chris Allen and Deborah Roedder-John, Provo, Utah, Association for Consumer Research, 449-457.

Lockshin L., Rasmussen M. and Cleary F. (2000), The nature and roles of a wine brand, *Australia and New Zealand Wine Industry Journal*, 15, 4, 50-58.

Louviere J. J., Hensher D. A. and Swait J. D. (2000), *Stated choice methods. Analysis and applications*, Cambridge, United Kingdom, Cambridge University Press.

Louviere J. J. and Woodworth G. (1983), Design and analysis of simulated consumer choice or allocation experiments: an approach based on aggregate data, *Journal of Marketing Research*, 20, 4, 350-367.

Maheswaran D. (1994), Country of origin as a stereotype: effects of consumer expertise and attribute strength on product evaluations, *Journal of Consumer Research*, 21, 2, 354-365.

McFadden D. (1973), Conditional Logit Analysis of Qualitative Choice Behavior, *Frontiers of Econometrics*, ed. P. Zarembka, New York, Academic Press, 105-142

Mitchell A. A. and Dacin P. A. (1996), The assessment of alternative measures of consumer expertise, *Journal of ConsumerResearch*, 23, 3, 219-239.

Park C. W., Milberg S. and Lawson R. (1991), Evaluation of brand extensions: the role of product feature similarity and brand concept consistency, *Journal of Consumer Research*, 18, 4, 185-193.

Park C. W., Mothersbaugh D. L. and Feick L. (1994), Consumer knowledge assessment, *Journal of Consumer Research*, 21, 1, 71-82.

Quester P. G. and Smart J. (1998), The influence of consumption situation and product involvement over consumers' use of product attribute, *Journal of Consumer Marketing*, 15, 3, 220-238.

Rangaswamy A., Burke R. R. and Oliva T. A. (1993), Brand equity and the extendibility of brand names, *International Journal of Research in Marketing*, 10, 1, 61-75.

Rao A. R. and Monroe K. B. (1988), The moderating effect of prior knowledge on cue utilization in product evaluations, *Journal of Consumer Research*, 15, 2, 253-264.

Schamel G. (2000), Individual and collective reputation indicators of wine quality, working paper, Center for International Economic Studies, Adelaide University, Adelaide, Australia.

Schamel G. and Anderson K. (2001), Wine quality and varietal, regional and winery reputations : hedonic prices for Australia and New Zealand, paper presented at the VIII*th* conference VDQS Enometrics, Napa Valley, California.

Schweiger G., Otter T. and Strebinger A. (1997), The influence of country of origin and brand on product evaluation and the implications thereof for location decisions, *CEMS Business Review*, 2, 1, 5-26.

Selnes F. and Troye S. V. (1989), Buying expertise, information search, and problem solving, *Journal of Economic Psychology*, 10, 3, 411-428.

Simonin B. L. and Ruth J. A. (1998), Is a company known by the company it keeps? Assessing the spillover effects on consumer brand attitudes, *Journal of Marketing Research*, 35, 1, 30-42.

Teas R. K. and Agarwal S. (2000), The effect of extrinsic product cues on consumers' perceptions of quality, sacrifice, and value, *Journal of the Academy of Marketing Science*, 28, 2, 278-290.

Thakor M. V. and Kohli C. S. (1996), Brand origin: conceptualization and review, *Journal of Consumer Marketing*, 13, 3, 27-42.

Thode S. F. and Maskulka J. M. (1998), Place-based marketing strategies, brand equity and vineyard valuation, *Journal of Product & Brand Management*, 7, 5, 379-399.

Thorelli H. B., Lim J.-S. and Ye J. (1988), Relative importance of country of origin, warranty and retail store image on product evaluations, *International Marketing Review*, 6, 1, 35-46.

Tse D. K. and Gorn G. J. (1993), An experiment on the salience of country-of-origin in the era of global brands, *Journal of International Marketing*, 1, 1, 57-76.

Tse D. K. and Lee W.-N. (1993), Removing negative country images: effects of decomposition, branding, and product experience, *Journal of International Marketing*, 1, 4, 25-48.

Tustin M. and Lockshin L. (2001), Region of origin: does it really count?, *Australia and New Zealand Wine Industry Journal*, 16, 5, 139-143.

Ulgado F. M. and Lee M. (1993), Consumer evaluations of bi-national products in the global market, *Journal of International Marketing*, 1, 3, 5-22.

Van Ittersum K. (2001), The role of region of origin in consumer decision-making and choice, Marketing PhD., Mansholt Graduate School, Wageningen University, Netherlands.

Wall M., Liefeld J. and Heslop L. A. (1991), Impact of country-of-origin cues on consumer judgments in multi-cue situations: a covariance analysis, *Journal of the Academy of Marketing Science*, 19, 2, 105-113.