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## **The Structure of the French Retail Wine Market: A Duplication of Purchase Approach**

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### **Abstract**

**Purpose** - This study aims to validate the survey technique of retrospective recall and extend the duplication of purchase law to attributes in the French retail wine market.

**Design/Methodology/Approach** - Retrospective recall is used through a telephone survey of a representative sample of 300 French wine buyers. The attributes of brand, variety, region of origin (AOC) and price are investigated. The duplication of purchase law is used to identify any partitions among the attributes studied and postulations for these occurrences are made.

**Findings** - The duplication of purchase law holds for the main attributes investigated, It is, however, not possible to test this on brand due to consumers inability to recall. This suggests that brand has a low salience with French wine buyers. Certain partitions do indicate a terroir effect.

**Implications** - Greater insights into the structure of the French retail wine market are obtained. Certain discoveries can be logically explained whilst others call for further research. These findings exist as a call for replication in the French market using panel data.

**Keywords** - Duplication of Purchase, Retrospective Recall, Wine Attributes, France, Marketing

## 1. BACKGROUND

Three studies, (Keown and Casey 1995; Molla et al. 1998; Dall'Olmo Riley et al. 1999), demonstrate that the stream of early research on wine attributes started in Western Europe. Currently, much of the wine marketing research focused on buyer behaviour is emanating from 'new world' wine countries. In recent years, most extrinsic attribute research has emerged from the Australian market (Romaniuk and Dawes 2005; Jarvis 2006; Murphy 2006; Jarvis et al. 2007; Cohen 2010) The purpose of this research is to attempt to extend the application of the duplication of purchase law to wine attributes in a new market and in so doing further support this commonly accepted empirical generalisation.

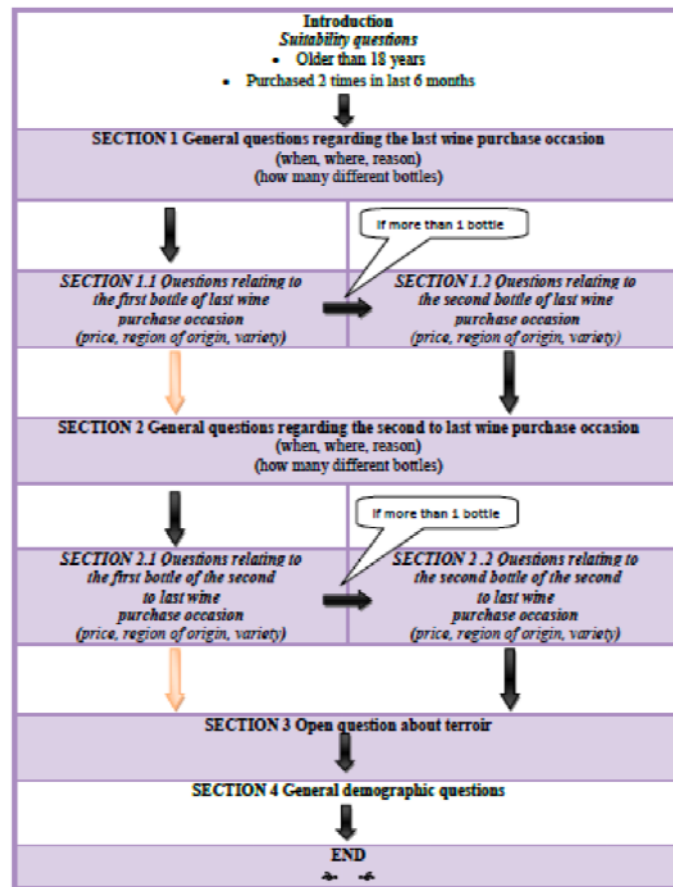
This research explores buying patterns in the French retail wine market, a complex and potentially highly fragmented product category. There are a host of methods that have been validated for application on wine attributes through the analysis of panel data (actual consumer purchase records). 'New world' wine markets are navigated by consumers using those attributes, making these studies attractive. In France, the 'old world' terroir-based system is primarily used to reach the consumer. There is a gap in the understanding of how French consumers behave over a period of time across multiple purchase occasions. In this research the attributes of brand, variety, region of origin and price are investigated. Can French consumers recall the attributes that comprise their recent bottled wine purchases? Furthermore, can applying the duplication of purchase law to these attributes provide additional insights into the role that terroir plays in buying behaviour?

The duplication of purchase law is utilised in this study to describe how consumers share their purchases across the levels of each principal attribute investigated. The duplication of purchase law is an empirical generalisation that uses the patterns of repeat purchase to identify the competitive structure of a market (Goodhardt et al. 1984). It suggests that penetration levels moderate the amount of sharing between competing brands (Ehrenberg 1988; Ehrenberg et al. 2004; Mansfield 2004). The aberrations, which occur when brands (or attribute levels) compete more or less than expected, are termed partitions (Wright et al. 1998; Ehrenberg et al. 2000). Duplication of purchase provides a means to look at 'consumer-buying based' patterns rather than market-based patterns (Ehrenberg 2000; Sharp 2009).

## 2. METHODOLOGY

A sample of 300 French wine buyers were contacted by the marketing research 'junior enterprise' of a Parisien business school. The sample recruited was geographically and demographically representative of France. The survey design was based on Murphy (2005) and translated into French. Each survey was collected via a telephone call center and took roughly 10 minutes. Respondents were not only surveyed about their recall of purchased bottled wine, but also general wine buying questions regarding motivations, nature of purchase and store type visited. Terroir was also investigated in terms of French consumers comprehension of this concept in an attempted continuation of prior work. Figure 1 below shows the order in which the survey was collected.

**Figure 1:** Flowchart of Telephone Survey



The method of retrospective recall as used by Romaniuk and Dawes (2005) and Murphy (2006) was applied. This approach was chosen because of funding constraints and inability to acquire loyalty card/panel data. Retailers are generally hesitant to share the individual buyer level purchase data acquired through their loyalty programs or the very expensive panel data purchased from a 3<sup>rd</sup> party provider such as AC Nielsen or GFK.

In a duplication of purchase table, the vertical column of attribute levels represent ‘the buyers of . . .’ and the horizontal row of attribute levels describes the ‘% who also bought . . .’. In the tables presented below, ‘b’ is the accepted shorthand representation of penetration. However,

the results presented in this paper are in the format of duplication of purchase (deviations) tables. Deviations of greater than or equal to +10% are highlighted in green, whereas deviations of greater than or equal to -10% are highlighted in red. A duplication of purchase (deviations) table is constructed by calculating the percent deviations of the observed from the expected duplications in the duplication table using the ‘D coefficient’, which represents the relationship between a brand’s duplication amongst another brand’s buyers, and its penetration amongst the broader population (Ehrenberg and Goodhardt 1970; Murphy 2006).

### 3. RESULTS

The ability to recall the attribute levels purchased varied. Of the 300 people surveyed, the sample size varied between 240-260 respondents depending on the attribute. This was not the case for brand. Most people could not recall the brand of the wine purchased and those that stated the brand often made mistakes and provided the region of origin (AOC) or variety. This is an interesting finding in itself. This would suggest that brand is not important to French wine buyers, as it appears to not be a salient attribute. There was, however, sufficient data to apply the duplication of purchase law to the other attributes collected.

The duplication of purchase law generally appears to hold for Variety. Table 1 below contains the duplication of purchase table (deviations) table for the attribute of Variety.

**Table 1:** Duplication of Purchase (Deviations) for Variety

Variety	b	Cabernet Sauvignon	Merlot	Chardonnay	Syrah	Grenache	Sauvignon	Muscadet	Gamay	Pinot noir	Muscat	Cabernet franc	Riesling	Blended Red
Cabernet Sauvignon	<b>20</b>	<b>20</b>	<b>15</b>	<b>15</b>	<b>11</b>	<b>9</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>7</b>	<b>4</b>	<b>3</b>	<b>3</b>
Merlot	<b>15</b>	<b>21</b>		-2	-2	0	-6	0	1	-1	4	1	0	-2
Chardonnay	<b>15</b>	-1	-2		-6	-3	10	10	3	-1	-3	-1	-3	0
Syrah	<b>11</b>	-9	-2	-8		<b>14</b>	6	3	-3	9	-5	0	-3	-2
Grenache	<b>9</b>	-4	-1	-4	<b>17</b>		-3	8	-6	8	-1	1	1	-2
Sauvignon	<b>8</b>	-7	<b>-11</b>	<b>17</b>	8	-3		6	-2	6	-5	-3	-3	-2
Muscadet	<b>8</b>	-3	1	<b>17</b>	4	9	6		-2	-2	7	1	-3	-2
Gamay	<b>8</b>	-2	1	6	-4	-7	-2	-2		-2	-1	1	2	-2
Pinot noir	<b>8</b>	7	-3	-2	<b>13</b>	<b>10</b>	7	-2	-2		-1	6	-3	-2
Muscat	<b>7</b>	0	9	-6	-8	-2	-6	9	-1	-1		2	-3	3
Cabernet franc	<b>4</b>	-6	5	-3	0	1	-6	2	2	<b>11</b>	3		-3	-2
Riesling	<b>3</b>	<b>25</b>	-1	<b>-11</b>	-8	3	-6	-6	4	-6	-5	-3		-2
Blended Red	<b>3</b>	-2	<b>-11</b>	1	-8	-7	-6	-6	-6	-6	7	-3	-3	

(b represents penetration, this table shows the difference between the 'observed' and 'expected' duplications of a standard duplication table which exhibits the proportion of people who bought X who also bought Y)

The results for Variety with this method suggest some interesting partitions. There appear to be Cabernet Sauvignon and Merlot as well as Grenache and Syrah partitions as indicated by the greater than expected reciprocal sharing between these two groupings. Considering the grape varieties that are blended into some of the major regions of origin (AOCs) in France, one can suggest a potential terroir effect. The Cabernet Sauvignon and Merlot partition could be a result of Bordeaux wines. Likewise, the Grenache and Syrah partition could be linked to wines from the Cote du Rhone. There are other notable instances in

the more than expected sharing of Sauvignon Blanc and Muscadet with Chardonnay as well as Pinot Noir with Grenache and Syrah. There is a surprising result with Riesling sharing significantly more than expected with Cabernet Sauvignon, but this could be explained by the low penetration of Riesling in the data set because this represents a rather small number of people out of the sample size.

The duplication of purchase law generally appears to hold for Region of Origin (AOC). Table 2 below contains the duplication of purchase table (deviations) table for the attribute of Region of Origin (AOC).

**Table 2:** Duplication of Purchase (Deviations) for Region of Origin (AOC)

		Bordeaux	Alsace	Rhône	Languedoc-Roussillon	Beaujolais	Bourgogne	Provence	Loire	Sud-Ouest	Jura	Champagne	Corse	étrangers	Savoie
	<b>b</b>	<b>55</b>	<b>16</b>	<b>15</b>	<b>14</b>	<b>14</b>	<b>13</b>	<b>12</b>	<b>11</b>	<b>9</b>	<b>9</b>	<b>7</b>	<b>6</b>	<b>5</b>	<b>4</b>
Bordeaux	<b>55</b>		5	0	2	-1	-3	0	-3	1	2	1	-2	-1	0
Alsace	<b>16</b>	16		-2	-6	3	-3	-4	-6	0	9	-1	7	1	-1
Rhône	<b>15</b>	-1	-2		-6	-8	0	-4	9	-2	-6	-3	-5	3	2
Languedoc-Roussillon	<b>14</b>	7	-7	-6		-5	-4	-6	-1	-4	-6	-3	3	-2	-1
Beaujolais	<b>14</b>	-2	4	-8	-6		6	-1	-1	11	1	2	5	-1	-3
Bourgogne	<b>13</b>	-12	-3	0	-5	7		8	6	-1	5	0	1	2	-3
Provence	<b>12</b>	2	-6	-5	-8	-1	9		-5	-1	-6	4	1	-4	0
Loire	<b>11</b>	-15	-9	12	-1	-1	7	-6		3	0	-2	2	9	-3
Sud-Ouest	<b>9</b>	3	0	-3	-7	18	-1	-1	4		2	7	3	-4	5
Jura	<b>9</b>	14	17	-11	-11	2	7	-9	0	2		-1	-1	4	5
Champagne	<b>7</b>	9	-2	-6	-6	5	1	6	-3	8	-1		-5	-4	2
Corse	<b>6</b>	-13	16	-11	6	12	2	2	3	4	-1	-5		2	2
étrangers	<b>5</b>	-14	2	9	-4	-4	4	-9	18	-7	7	-5	2		-3
Savoie	<b>4</b>	1	-3	6	-2	-10	-9	-1	-8	10	10	3	4	-4	

(b represents penetration, this table shows the difference between the ‘observed’ and ‘expected’ duplications of a standard duplication table which exhibits the proportion of people who bought X who also bought Y)

It is clear that with a penetration of 55%, Bordeaux wines dominate the French retail market. The high market position for wines from Alsace is surprising. Alsace’s much more than expected sharing with Bordeaux wines is hard to explain since one AOC is known primarily for its white wine and the other for its red wine. From a different perspective, this result is a great example of why using the duplication of purchase method is valuable in order to obtain previously unknown insights. There is a modest partition between wines from Sud-Ouest and Beaujolais. There are other examples of AOCs that share more or less than expected with each other. Each of these positive interactions must be considered in light of geographic proximity and terroir that could possibly suggest similarly tasting wines. For example, Jura and Savoie have higher than expected sharing and thus demonstrate this geographic adjacency influence. This appears to exist more with wine from eastern appellations in France. This subject requires further research and would be worthy of investigating in conjunction with the taste preferences of consumers.

The duplication of purchase law generally appears to hold for Price. Table 3 below contains the duplication of purchase table (deviations) table for the attribute of Price.

**Table 3:** Duplication of Purchase (Deviations) for Price

	<b>b</b>	less than €4	€4 - €8	€8 - €12	€12 - €16	€16 - €20	€20 upward
less than €4	<b>17</b>		12	-16	1	-7	-6
€4 - €8	<b>57</b>	3		6	-1	-3	-1
€8 - €12	<b>46</b>	-6	8		7	1	0
€12 - €16	<b>20</b>	1	-2	17		-4	-4
€16 - €20	<b>16</b>	-8	-11	3	-5		15
€20 upward	<b>26</b>	-4	-2	0	-3	9	

(b represents penetration, this table shows the difference between the 'observed' and 'expected' duplications of a standard duplication table which exhibits the proportion of people who bought X who also bought Y)

There is no evidence of clear partitions based upon price, as there are no significant examples of reciprocal sharing. However, as found by Romaniuk and Dawes (2005) and Murphy (2006) in Australia, there is evidence of greater than expected sharing between adjacent price tiers. The Australian market based upon price was more partitioned in the research of Cohen (2010). However, he used loyalty card obtained panel data, which afforded drastically increased sample size, smaller price tiers and verifiable price declarations. It could be postulated that, when using the retrospective recall method, consumers could be more likely to provide false information for price as opposed to some of the other attributes. It would be of interest to obtain panel data for analysis and at the same time conduct a retrospective recall survey with a sample of those panellists in order to measure how reliable their ability to recall actually is.

#### 4. LIMITATIONS & FUTURE RESEARCH

Whilst it is clear that there are limitations of retrospective recall and prior research in Australia has suggested the superiority of panel data, the value of using this data collection method as a prospecting technique is clear. Application of additional methods of deciphering buyer behaviour on the current data set is planned. Obtaining panel data in order to work with a more significant sample size and mitigate some of the limitations that exist from the currently applied data collection methods is the next stage of this research.

#### 5. IMPLICATIONS & CONCLUSIONS

This research focused on three issues for the French wine market: establishing whether retrospective recall is an appropriate data collection technique; verifying if the duplication of purchase law holds and demonstrating the potential value of taking an attribute-based approach to understanding market structure.

The duplication of purchase law does hold for variety, region of origin and price. The duplication of purchase law does not hold for brand. The sharing of purchases among variety and region of origin provides valuable marketing insights. There are partitions in both of these attributes that appear to indicate the effect of terroir in purchase behaviour and taste preferences. This study proves that there is value in extending this stream of research in France.



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