Why are buyers loyal? Exploring the role of psychographics on loyalty performance and market structure of brands

Polymeros Chrysochou
Athanasios Krystallis
Cam Rungie, University of South Australia

Available at: https://works.bepress.com/chrysochou/21/
Why are buyers loyal? Exploring the role of psychographics on loyalty performance and market structure of brands

Polymeros Chrysochou & Athanasios Krystallis, MAPP, Aarhus School of Business
Cam Rungie, Ehrenberg-Bass Institute, University of South Australia

Abstract
Research on brand loyalty from the repeat purchase approach has extensively aimed at describing the structure of the market and defining loyalty patterns. Various models, such as the NDB-Dirichlet, have been used successfully to describe patterns and structure of the markets. A drawback of such models is their inability to incorporate the way buyers' characteristics and psychographics influence the overall market structure and loyalty performance in repeat purchase occasions. Moreover, measuring the type and magnitude of buyer-related effects on brand loyalty could provide additional valuable information to brand managers. This paper aims to provide an approach of estimating the effect of psychographics on loyalty performance and market structure of brands through revealed preference data.

Keywords: Brand loyalty; Juster probability scale; Repeated binary logit

Track: Marketing Research and Research Methodology
1. Introduction

Research on brand loyalty from the repeat purchase approach has extensively aimed at describing the structure of the market and defining loyalty patterns. Various models, such as the Dirichlet-NBD model, have been applied and proved to explain reasonably well patterns and regularities of repeat purchase behaviour, as well as the overall market structure of brands (Ehrenberg et al., 2004). A criticism to these models is their inability to identify and explain the actual causes of loyalty. On the other hand, brand managers are anxious in getting a deeper understanding of such determinants that will further help in obtaining higher “loyalty” from their buyers.

On the basis of such determinants, the concept of polarization has been used to explain the loyalty structure of brands based on various product attributes (Chrysochou and Giraud, 2007; Fader and Schmittlein, 1993; Jarvis and Goodman, 2005). This stream of research considers that a product category is formed of subcategories according to product attributes, and therefore each subcategory obtains different attribute-based loyalty levels. Implications from this type of approach have been relatively useful for exploring the effect of various product attributes on repeat purchase.

A drawback of the above mentioned approach has been said to allow only the use of extrinsic (e.g. brand name, price) or even intrinsic (e.g. organoleptic characteristics) product attributes as determinants of repeat purchase. In other words, they lack in their ability to incorporate buyers’ characteristics for interpreting repeat purchase. The reason to this is that such studies are based on scanner data that do not allow for further exploring of such hypotheses. One way of overcoming this weakness has been provided by the use of Juster Probability Scale (JPS) estimates (Wright and MacRae, 2007; Wright et al., 2002). This scale has been shown to be a reliable alternative way of estimating brand performance measures through revealed preference data. Based on this approach, various demographic and psychographic characteristics could be used to explore repeat purchase. For instance, Uncles and Lee (2006) explored the impact of socio-demographic differences (i.e. age) in obtaining loyalty behaviour.

The present study goes one step further by measuring the impact of psychographics on brand repeat purchase. To achieve this, the Repeated Binary Logit (RBL) model is used (Runnie and Laurent, 2005). The RBL is an extension to the traditional logistic regression that is constructed from the Negative Binomial Distribution, on which a generalized linear model estimates the impact of covariates (for a detailed review of the model see Runnie and Laurent, 2005).

Aim of this paper is to provide an approach of estimating the effect of various psychographics on the market structure and loyalty performance of brands through revealed preference data. The fresh milk category was selected as an exemplary one for the aims of the present study. Psychographics tested are product category involvement, familiarity and variety seeking, as well as buyers’ overall loyalty proneness. Such measures are hypothesised to have a potential influence on brand loyalty behaviour. Moreover, as buyers become more health conscious in their dietary choices (Grunert and Wills, 2007), extrinsic food brand attributes related to health (i.e. freshness and low caloric content) that may have an impact on repeat purchase behaviour are further investigated.

2. Method and Data

For the purpose of the study, a survey is conducted on a convenience sample (N=257) drawn in the metropolitan area of Attika, Greece, in 2007. Market structure (i.e. the top 20 brands) of the fresh milk category is analysed through JPS. Furthermore, the brands measured are categorized according to two health brand related cues, namely “freshness” and “low
caloric content”. Same way of analysis is followed for both attribute categories. In the next step, the Juster estimates are used as inputs to derive theoretical Dirichlet predictions of brand performance. For this purpose, the DIRICHLET excel spreadsheets is used (Kearns et al., 1998).

The description of each brand and the extracted market descriptive results as depicted from the Juster estimates are shown Table 1. In brief, the market can be characterized as a repertoire market, with an average penetration of 11.8% and purchase frequency of 2.5 times for the selected period of 4 weeks.

Table 1 Brand description and market structure analysis

<table>
<thead>
<tr>
<th>Brand</th>
<th>Healthiness</th>
<th>Freshness</th>
<th>Market Share</th>
<th>Purchase Frequency</th>
<th>Penetration</th>
<th>Repeat Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk 4</td>
<td>Light</td>
<td>Fresh</td>
<td>17.89</td>
<td>6.10</td>
<td>28.70</td>
<td>72.1</td>
</tr>
<tr>
<td>Milk 3</td>
<td>Full Fat</td>
<td>Fresh</td>
<td>14.32</td>
<td>5.44</td>
<td>25.76</td>
<td>59.3</td>
</tr>
<tr>
<td>Milk 1</td>
<td>Full Fat</td>
<td>Fresh</td>
<td>12.59</td>
<td>4.70</td>
<td>26.21</td>
<td>70.8</td>
</tr>
<tr>
<td>Milk 2</td>
<td>Light</td>
<td>Fresh</td>
<td>8.56</td>
<td>4.06</td>
<td>20.62</td>
<td>67.5</td>
</tr>
<tr>
<td>Milk 13</td>
<td>Light</td>
<td>Long Life</td>
<td>6.33</td>
<td>4.73</td>
<td>13.11</td>
<td>65.6</td>
</tr>
<tr>
<td>Milk 12</td>
<td>Full Fat</td>
<td>Long Life</td>
<td>5.56</td>
<td>3.63</td>
<td>14.97</td>
<td>64.8</td>
</tr>
<tr>
<td>Milk 5</td>
<td>Full Fat</td>
<td>Fresh</td>
<td>3.26</td>
<td>2.65</td>
<td>12.03</td>
<td>74.5</td>
</tr>
<tr>
<td>Milk 11</td>
<td>Full Fat</td>
<td>Fresh</td>
<td>3.06</td>
<td>5.70</td>
<td>5.25</td>
<td>62.4</td>
</tr>
<tr>
<td>Milk 16</td>
<td>Full Fat</td>
<td>Fresh</td>
<td>3.06</td>
<td>3.56</td>
<td>8.42</td>
<td>62.4</td>
</tr>
<tr>
<td>Milk 9</td>
<td>Full Fat</td>
<td>Fresh</td>
<td>2.76</td>
<td>3.39</td>
<td>7.97</td>
<td>60.4</td>
</tr>
<tr>
<td>Milk 18</td>
<td>Light</td>
<td>Long Life</td>
<td>2.65</td>
<td>2.69</td>
<td>9.66</td>
<td>62.0</td>
</tr>
<tr>
<td>Milk 6</td>
<td>Light</td>
<td>Fresh</td>
<td>1.89</td>
<td>1.83</td>
<td>10.11</td>
<td>62.6</td>
</tr>
<tr>
<td>Milk 10</td>
<td>Light</td>
<td>Fresh</td>
<td>1.42</td>
<td>2.00</td>
<td>6.95</td>
<td>62.1</td>
</tr>
<tr>
<td>Milk 7</td>
<td>Full Fat</td>
<td>Fresh</td>
<td>1.37</td>
<td>1.99</td>
<td>6.72</td>
<td>61.2</td>
</tr>
<tr>
<td>Milk 17</td>
<td>Full Fat</td>
<td>Long Life</td>
<td>1.19</td>
<td>1.12</td>
<td>10.40</td>
<td>60.5</td>
</tr>
<tr>
<td>Milk 8</td>
<td>Light</td>
<td>Fresh</td>
<td>1.08</td>
<td>1.60</td>
<td>6.27</td>
<td>60.7</td>
</tr>
<tr>
<td>Milk 15</td>
<td>Light</td>
<td>Long Life</td>
<td>0.66</td>
<td>0.98</td>
<td>6.61</td>
<td>59.9</td>
</tr>
<tr>
<td>Milk 19</td>
<td>Full Fat</td>
<td>Long Life</td>
<td>0.52</td>
<td>1.08</td>
<td>4.75</td>
<td>59.8</td>
</tr>
<tr>
<td>Milk 14</td>
<td>Full Fat</td>
<td>Long Life</td>
<td>0.27</td>
<td>0.35</td>
<td>7.57</td>
<td>59.5</td>
</tr>
<tr>
<td>Milk 20</td>
<td>Full Fat</td>
<td>Long Life</td>
<td>0.11</td>
<td>0.29</td>
<td>3.73</td>
<td>59.3</td>
</tr>
<tr>
<td>Average brand</td>
<td></td>
<td></td>
<td>4.43</td>
<td>2.55</td>
<td>11.79</td>
<td>63.44</td>
</tr>
<tr>
<td>“Fresh” brands</td>
<td></td>
<td></td>
<td>68.20</td>
<td>9.15</td>
<td>72.95</td>
<td>90.09</td>
</tr>
<tr>
<td>“Light” brands</td>
<td></td>
<td></td>
<td>40.48</td>
<td>7.33</td>
<td>54.07</td>
<td>85.25</td>
</tr>
</tbody>
</table>

In the second part of the study, psychographics (covariates) are measured, following the aims of the study described above. The covariates used as examples are involvement in the product category (5-items; e.g. "I generally have a strong interest in this product category"; Beatty and Talpade, 1994); familiarity with the product category (3-items; e.g. "In general, I consider myself very familiar with the product category"; Oliver and Bearden, 1985); variety seeking within the product category (2-items; e.g. "I enjoy buying another brand of the product category just to get some variation in my purchases"; Jensen and Hansen, 2006); as well as overall buyer loyalty proneness (5-items, e.g. "I generally buy the same brands I have always bought"; Burton, 1998).
All covariates are measured on a 7-point Likert type scale (1 = totally agree to 7 = totally disagree). Descriptive statistics for each scale are as follows: involvement (M = 2.56, SD = 1.28, α = 0.899); familiarity (M = 2.87, SD = 1.24, α = 0.828); variety seeking (M = 5.17, SD = 1.29, α = 0.567), and loyalty proneness (M = 3.88, SD = 1.24, α = 0.919).

3. Results and Discussion

In the following tables, the RBL model results are presented. Table 2 includes the changes in market share when each covariate changes from one standard deviation below the mean to one standard deviation above the mean.

Table 2 Changes in market shares

<table>
<thead>
<tr>
<th>Brand</th>
<th>Market share</th>
<th>Involvement</th>
<th>Familiarity</th>
<th>Variety seeking</th>
<th>Loyalty proneness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk 04</td>
<td>17.89</td>
<td><strong>5.03</strong></td>
<td>3.25</td>
<td><strong>3.41</strong></td>
<td>-1.78</td>
</tr>
<tr>
<td>Milk 03</td>
<td>14.32</td>
<td>-0.03</td>
<td>-0.32</td>
<td><strong>-0.91</strong></td>
<td>3.53</td>
</tr>
<tr>
<td>Milk 01</td>
<td>12.59</td>
<td><strong>1.36</strong></td>
<td>3.03</td>
<td><strong>5.35</strong>*</td>
<td><strong>-3.68</strong>*</td>
</tr>
<tr>
<td>Milk 02</td>
<td>8.56</td>
<td>-4.17</td>
<td><strong>-2.81</strong></td>
<td><strong>-2.30</strong>*</td>
<td><strong>-0.31</strong></td>
</tr>
<tr>
<td>Milk 13</td>
<td>6.33</td>
<td>-3.36</td>
<td><strong>-3.68</strong></td>
<td><strong>3.58</strong>*</td>
<td><strong>-3.65</strong></td>
</tr>
<tr>
<td>Milk 12</td>
<td>5.56</td>
<td><strong>3.73</strong></td>
<td><strong>-5.19</strong>*</td>
<td><strong>-0.37</strong></td>
<td><strong>-1.50</strong></td>
</tr>
<tr>
<td>Milk 05</td>
<td>3.26</td>
<td>0.20</td>
<td>0.33</td>
<td><strong>-0.75</strong>*</td>
<td><strong>1.77</strong>*</td>
</tr>
<tr>
<td>Milk 11</td>
<td>3.06</td>
<td>1.37</td>
<td>1.66</td>
<td><strong>1.73</strong></td>
<td><strong>-2.64</strong></td>
</tr>
<tr>
<td>Milk 16</td>
<td>3.06</td>
<td>-1.87</td>
<td>1.60</td>
<td><strong>3.40</strong>*</td>
<td><strong>-2.42</strong></td>
</tr>
<tr>
<td>Milk 09</td>
<td>2.76</td>
<td>-0.93</td>
<td><strong>-0.70</strong></td>
<td><strong>-0.99</strong></td>
<td><strong>-0.12</strong></td>
</tr>
<tr>
<td>Milk 18</td>
<td>2.65</td>
<td>-1.12</td>
<td>0.24</td>
<td><strong>-0.94</strong>*</td>
<td><strong>0.82</strong></td>
</tr>
<tr>
<td>Milk 06</td>
<td>1.89</td>
<td>0.95</td>
<td>-1.05</td>
<td><strong>-0.47</strong></td>
<td><strong>0.24</strong></td>
</tr>
<tr>
<td>Milk 10</td>
<td>1.42</td>
<td>0.35</td>
<td><strong>-0.90</strong></td>
<td><strong>-2.12</strong></td>
<td><strong>2.55</strong></td>
</tr>
<tr>
<td>Milk 07</td>
<td>1.37</td>
<td>-0.59</td>
<td>-0.82</td>
<td><strong>-1.77</strong>*</td>
<td><strong>2.16</strong>*</td>
</tr>
<tr>
<td>Milk 17</td>
<td>1.19</td>
<td><strong>3.15</strong>*</td>
<td><strong>3.00</strong></td>
<td><strong>-0.34</strong></td>
<td><strong>-0.53</strong></td>
</tr>
<tr>
<td>Milk 08</td>
<td>1.08</td>
<td><strong>-0.91</strong></td>
<td><strong>-0.99</strong>*</td>
<td><strong>-1.60</strong></td>
<td>1.09</td>
</tr>
<tr>
<td>Milk 15</td>
<td>0.66</td>
<td>-0.66</td>
<td>2.18</td>
<td>-1.07</td>
<td>0.47</td>
</tr>
<tr>
<td>Milk 19</td>
<td>0.52</td>
<td>-0.99</td>
<td>-0.36</td>
<td>-0.77</td>
<td>-0.10</td>
</tr>
<tr>
<td>Milk 14</td>
<td>0.27</td>
<td>0.39</td>
<td>1.54</td>
<td><strong>0.14</strong>*</td>
<td><strong>0.27</strong></td>
</tr>
<tr>
<td>Milk 20</td>
<td>0.11</td>
<td>-20.07</td>
<td>0.05</td>
<td><strong>0.84</strong></td>
<td><strong>-1.94</strong>*</td>
</tr>
<tr>
<td>Fresh</td>
<td>68.20</td>
<td>-4.30</td>
<td>-4.42</td>
<td>-5.78</td>
<td>1.26</td>
</tr>
<tr>
<td>Light</td>
<td>40.48</td>
<td>-0.92</td>
<td>-1.74</td>
<td><strong>-2.62</strong>*</td>
<td><strong>6.06</strong></td>
</tr>
</tbody>
</table>

Note: * p < 0.05; ** p < 0.01; *** p < 0.001

In Table 3, the changes on repeat rates are presented and interpreted accordingly. For example, for Milk 4 involvement has a significant negative effect on market share of 5.03% and on repeat rate for 22.4%. In other words, the less involved buyers are in the product category (i.e. as involvement decreases from one standard deviation below the mean to one standard deviation above the mean) the market share and repeat rate of Milk 4 will increase significantly (i.e. from 2.25% below the mean to 2.25% above the mean, that is from 15.64% to 20.14%).
Some general conclusions could be drawn for the category. Overall, each covariate - and especially variety seeking and loyalty proneness - has a significant effect on market share and repeat rate on a substantial number of brands, indicating the accuracy of their selection as exemplary psychographics with an impact on loyalty behaviour. Loyalty proneness and variety seeking have inverse effects on market share and repeat rate, something expected as those covariates are negatively correlated ($r = -0.489; p = 0.000$) and are personality traits of opposite nature.

### Table 3 Changes in repeat rate

<table>
<thead>
<tr>
<th>Brand</th>
<th>Repeat Rate</th>
<th>Involvement</th>
<th>Familiarity</th>
<th>Variety seeking</th>
<th>Loyalty proneness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk 05</td>
<td>74.5</td>
<td>2.28</td>
<td>2.42</td>
<td>19.54***</td>
<td>-8.68**</td>
</tr>
<tr>
<td>Milk 04</td>
<td>72.1</td>
<td>22.40**</td>
<td>9.39</td>
<td>21.25**</td>
<td>12.08</td>
</tr>
<tr>
<td>Milk 01</td>
<td>70.8</td>
<td>15.55*</td>
<td>10.71</td>
<td>38.82***</td>
<td>-26.75***</td>
</tr>
<tr>
<td>Milk 02</td>
<td>67.5</td>
<td>-8.53</td>
<td>-19.21*</td>
<td>12.41***</td>
<td>-13.35*</td>
</tr>
<tr>
<td>Milk 13</td>
<td>65.6</td>
<td>-8.87</td>
<td>-28.11***</td>
<td>36.50***</td>
<td>-23.61*</td>
</tr>
<tr>
<td>Milk 12</td>
<td>64.8</td>
<td>25.24*</td>
<td>-40.39***</td>
<td>15.42*</td>
<td>-11.91</td>
</tr>
<tr>
<td>Milk 06</td>
<td>62.6</td>
<td>4.84</td>
<td>-8.62</td>
<td>14.43*</td>
<td>-13.75*</td>
</tr>
<tr>
<td>Milk 11</td>
<td>62.4</td>
<td>22.55</td>
<td>18.72</td>
<td>26.75**</td>
<td>-34.55</td>
</tr>
<tr>
<td>Milk 16</td>
<td>62.4</td>
<td>-6.64</td>
<td>15.60</td>
<td>51.46***</td>
<td>-26.91**</td>
</tr>
<tr>
<td>Milk 10</td>
<td>62.1</td>
<td>1.08</td>
<td>-22.65*</td>
<td>-3.52**</td>
<td>13.99**</td>
</tr>
<tr>
<td>Milk 18</td>
<td>62.0</td>
<td>7.12</td>
<td>0.96</td>
<td>17.52***</td>
<td>-7.71</td>
</tr>
<tr>
<td>Milk 07</td>
<td>61.2</td>
<td>-11.55</td>
<td>-12.24</td>
<td>3.82***</td>
<td>5.98***</td>
</tr>
<tr>
<td>Milk 08</td>
<td>60.7</td>
<td>-16.19*</td>
<td>-20.90***</td>
<td>-3.85**</td>
<td>2.88</td>
</tr>
<tr>
<td>Milk 17</td>
<td>60.5</td>
<td>33.96***</td>
<td>21.51**</td>
<td>16.69*</td>
<td>-14.89</td>
</tr>
<tr>
<td>Milk 09</td>
<td>60.4</td>
<td>-7.32</td>
<td>-19.20*</td>
<td>12.11**</td>
<td>-8.83</td>
</tr>
<tr>
<td>Milk 15</td>
<td>59.9</td>
<td>-3.82</td>
<td>9.79</td>
<td>4.43</td>
<td>-5.25</td>
</tr>
<tr>
<td>Milk 19</td>
<td>59.8</td>
<td>-7.52</td>
<td>-8.56</td>
<td>-1.82</td>
<td>0.69</td>
</tr>
<tr>
<td>Milk 14</td>
<td>59.5</td>
<td>10.14</td>
<td>4.49</td>
<td>27.40***</td>
<td>-12.63**</td>
</tr>
<tr>
<td>Milk 03</td>
<td>59.3</td>
<td>8.90</td>
<td>0.45</td>
<td>12.30*</td>
<td>8.30</td>
</tr>
<tr>
<td>Milk 20</td>
<td>59.3</td>
<td>-20.70</td>
<td>3.09</td>
<td>26.78*</td>
<td>-18.05***</td>
</tr>
<tr>
<td>Fresh</td>
<td>90.09</td>
<td>4.06</td>
<td>-0.95</td>
<td>-3.09</td>
<td>0.88</td>
</tr>
<tr>
<td>Light</td>
<td>85.25</td>
<td>3.61</td>
<td>0.41</td>
<td>7.81***</td>
<td>-1.68*</td>
</tr>
</tbody>
</table>

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

The impact of each covariate on market share - and especially that of variety seeking and loyalty proneness - is not consistent across brands. This means that each brand behaves differently within the category. However, some patterns can be identified in the case of involvement, where as buyers become less involved with the fresh milk category the market share of certain brands (i.e. those that are influenced significantly by involvement) becomes higher (with the exception of milk 8); and in the case of familiarity, where as buyers become less familiar with the fresh milk category the market share of certain brands (i.e. those that are influenced significantly by familiarity) becomes lower (with the exception of milk 17).
In the case of repeat rate, the impact of the covariates seems to be more consistent across brands. Involvement and variety seeking have a negative effect, whereas familiarity has a positive effect. This could be interpreted as follows: the less involved and variety seekers buyers of the category are, the more loyal they will become to certain brands (exceptions: milk 8 for involvement and milks 8 and 10 for variety seeking). On the contrary, the less familiar buyers of the category are, the less loyal they will become to certain brands (exception: milk 17). Moreover, loyalty proneness exhibits particularly consistent results, since its effect across 8 out of 10 significant brands is the same (i.e. the less loyal, the lower the repeat purchase rate). Therefore, the more loyalty-prone buyers are towards a brand, the higher loyalty levels this brand will obtain. However, there are two exceptions (milks 7 and 10), which could still be explained by the fact that the category presents a high concentration rate. For instance, top-5 brands acquire market share of almost 60% of the category, leaving most of the remaining 15 brands - among which milks 7 and 10 - with very small market shares. Therefore, the less loyalty-prone the consumers are, the higher the possibility to become loyal towards these two small brands will be.

When it comes to attribute-based sub-categories (fresh and light milk brands), results are also quite interesting (see last two lines in Tables 2 and 3). In the case of fresh brands, psychographics don’t have a significant impact either on the market share or on the repeat rate. In the case of light brands, the covariates that have a significant impact are variety seeking and loyalty proneness. The results suggest that the more variety seekers, or less loyalty prone, consumers are the market share of light brands will increase. On the other hand, the less variety seekers, or more loyalty prone, consumers are the repeat rate of light brands will increase.

4. Conclusion

In this paper, a way of measuring the effect of buyers’ psychographics on repeat purchase behaviour is presented. From a theoretical perspective, this approach provides an alternative and rather straightforward way of measuring the impact that buyers’ personality traits have on the market structure of product categories. From a managerial perspective, this approach provides further insight to brand managers about their customers’ loyalty behaviour. In this respect, it allows for drawing marketing strategies based on characteristics of consumers that may have a greater impact on their brands’ performance.

Limitations of the present study also exist that pose recommendations for further research. First of all, there is a need of bringing in more product categories so that to explore the consistency, if any, of each covariate’s impact on repeat purchase behaviour. Moreover, the assumption of un-segmented market, which the Dirichlet model rests on (Fader and Schmittlein, 1993), could be further explored, as the effect of each covariate might differ across segments. Therefore, future research based on this approach could investigate the role of psychographics on different segments, especially among brand and category target groups.
References


