

May 2003

Tracking positioning developments – perceptual changes in hair colorant positioning in Eastern Europe

Sara Dolnicar

University of Wollongong, s.dolnicar@uq.edu.au

Follow this and additional works at: <https://ro.uow.edu.au/commpapers>



Part of the [Business Commons](#), and the [Social and Behavioral Sciences Commons](#)

Recommended Citation

Dolnicar, Sara: Tracking positioning developments – perceptual changes in hair colorant positioning in Eastern Europe 2003.
<https://ro.uow.edu.au/commpapers/255>

Tracking positioning developments – perceptual changes in hair colorant positioning in Eastern Europe

Abstract

Typically, changes in the perception of brand images are tracked on an attribute-to attribute basis. In reality, however, it is not a single attribute but a combination of multiple attributes that constitute brand image. Accounting for this multi-facetness of brand perception, a framework for tracking changes thereof is proposed that can be used in addition to simple attribute comparison approaches. It provides insight into changes over time in a more holistic manner, tracking shifts of associations of specific brands with generic perceptual positions. The framework consists of (1) computation of a data-driven generic perceptual positions, (2) characterization of generic perceptual positions, (3) testing of distribution changes and (4) validation of results.

Disciplines

Business | Social and Behavioral Sciences

Publication Details

This paper was originally published as: Dolnicar, S, Tracking Positioning Developments - Perceptual Changes in Hair Colourant Positioning in Eastern Europe, CD Proceedings of the 32nd European Marketing Academy Conference (EMAC), Glasgow, Scotland, 20-23rd May 2003.

Tracking positioning developments – perceptual changes in hair colorant positioning in Eastern Europe

Sara Dolnicar¹

*School of Management, Marketing and Employment Relations
University of Wollongong*

Possible Tracks:

Marketing Strategy and Management,
Marketing Research

Acknowledgment

This research project was supported by the Austrian Science Foundation (FWF) under Grant SFB#010 ('Adaptive Information Systems and Modelling in Economics and Management Science') and partially conducted during Sara Dolnicar's appointment at the Institute for Tourism and Leisure Studies at the Vienna University of Economics and Business Administration.

¹ Sara Dolnicar, School of Management, Marketing and Employment Relations, University of Wollongong, Wollongong, NSW 2522, Australia, Telephone: (61 2) 4221 3862, Fax: (61 2) 4221 4154, sara_dolnicar@uow.edu.au

Tracking positioning developments – perceptual changes in hair colorant positioning in Eastern Europe

Abstract

Typically, changes in the perception of brand images are tracked on an attribute-to attribute basis. In reality, however, it is not a single attribute but a combination of multiple attributes that constitute brand image. Accounting for this multi-facetness of brand perception, a framework for tracking changes thereof is proposed that can be used in addition to simple attribute comparison approaches. It provides insight into changes over time in a more holistic manner, tracking shifts of associations of specific brands with generic perceptual positions.

The framework consists of (1) computation of a data-driven generic perceptual positions, (2) characterization of generic perceptual positions, (3) testing of distribution changes and (4) validation of results.

Introduction

Positioning has become a standard concept in strategic marketing. Recently the concept of perceptions-based market segmentation (PBMS, Mazanec & Strasser, 2000; Buchta, Dolnicar & Reutterer, 2000) has been introduced that takes advantage of the three-way structure of typical brand image data to investigate market structure. PBMS enables researchers to simultaneously deduct market insight about brand positioning, market segmentation and competition. The main strength of this approach therefore is that all strategic marketing components are accounted for at the same time, avoiding the need to sequentially investigate the matter, an approach that leads to conditional decisions. If, for instance, the market is first segmented, all positioning solutions following the segmentation task are dependent on the initial segmentation.

This paper extends the PBMS approach to track perceptual changes over time in a more holistic and integrated manner than it is typically the case: changes in single attributes are tested, usually ignoring the heterogeneity of underlying market segments one the one hand, and *a priori* (Mazanec, 2000) segment changes are monitored, whereas *a posteriori* (Mazanec, 2000: or *post-hoc*, Wedel & Kamakura, 1998) segments are typically investigated at one single point of time only (Baumann, 2000).

The managerial advantages of tracking integrated perceptual positions (implicitly accounting for heterogeneity of market segments) include (1) validation of single data-driven segment/positioning solutions that become the basis of entire marketing plans, (2) increased insight into the changes encountered in the marketplace, (3) provision of a sound basis for forecasting, (4) applicability to typical multi-period brand image data (non-panel format).

The aim of this article is to propose a framework for tracking brand image position changes, implicitly accounting for heterogeneity in the consumer population. The framework is illustrated using hair-colorant brand image data over two consecutive years.

The brand image tracking framework

The framework suggested for tracking changes of brand perceptions in the marketplace over time consists of 4 steps:

1. Computation of a data-driven generic perceptual positions

Based on the empirical survey data, the perceptual information provided by the respondents with regard to every single brand is grouped. Any partitioning method for multidimensional data can be used to achieve this task. The groups resulting from this first step are generic perceptual positions, if three way data is used, as it is the case with typical brand image surveys.

2. Characterization of generic perceptual positions

Based on the agreement level to the segmentation base (Wedel & Kamakura, 1998) at each position, generic perceptual positions are identified.

3. Testing of distribution changes

Three changes in frequency distribution are of interest: (1) the change of assignments of brand to perceptual positions in general over the two consecutive years, (2) the change of the assignment of particular brands to specific perceptual positions and, finally, (3) the change of the distribution of each brand over the perceptual positions. Simple Chi square tests are computed on the respective contingency tables.

4. Validation of results

Validation of the outcome from this framework is very crucial for credibility and managerial usefulness because partitioning is an exploratory procedure and can thus render hundreds of different correct solutions. A simple validation procedure is repetition of steps 1 and 2 and evaluation of compliance with the initial solution. Repetition can be conducted with different numbers of generic perception groups or different algorithms. By comparing solutions and time changes a picture emerges from the exploratory approach that allows conclusions on the reliability of findings. Stable generic positions can be detected and detected changes over time verified.

The framework suggested is very flexible with regard to the single components: (1) any kind and number of variables can be used as a basis for grouping the multivariate perceptions, (2) any partitioning algorithm can be applied to group the image patterns into generic perceptual positions and (3) validation can be conducted using a wide variety of partitioning algorithms and numbers of groups.

Tracking perceptual changes in hair colorant positioning

Perceptual brand data is used to illustrate the framework. The data was provided by one of the major companies in the market of branded chemical industry (for reasons of confidentiality the brand names are not disclosed in this article). It includes six hair colorant brands marketed in Eastern Europe. These six brands are evaluated by 516 women in 2000 and 511 women in

2001 on 20 product attributes in a binary manner, resulting in a three-way data set with 6162 brand perceptions by 1027 different female respondents.

K-means clustering (as implemented in SPSS 11.0) was used at the **first stage** to derive generic perceptual positions. A six-cluster solution was chosen because it represented a reasonable compromise between size of positions and profiles of positions. The resulting position profiles are given in Figure 1.

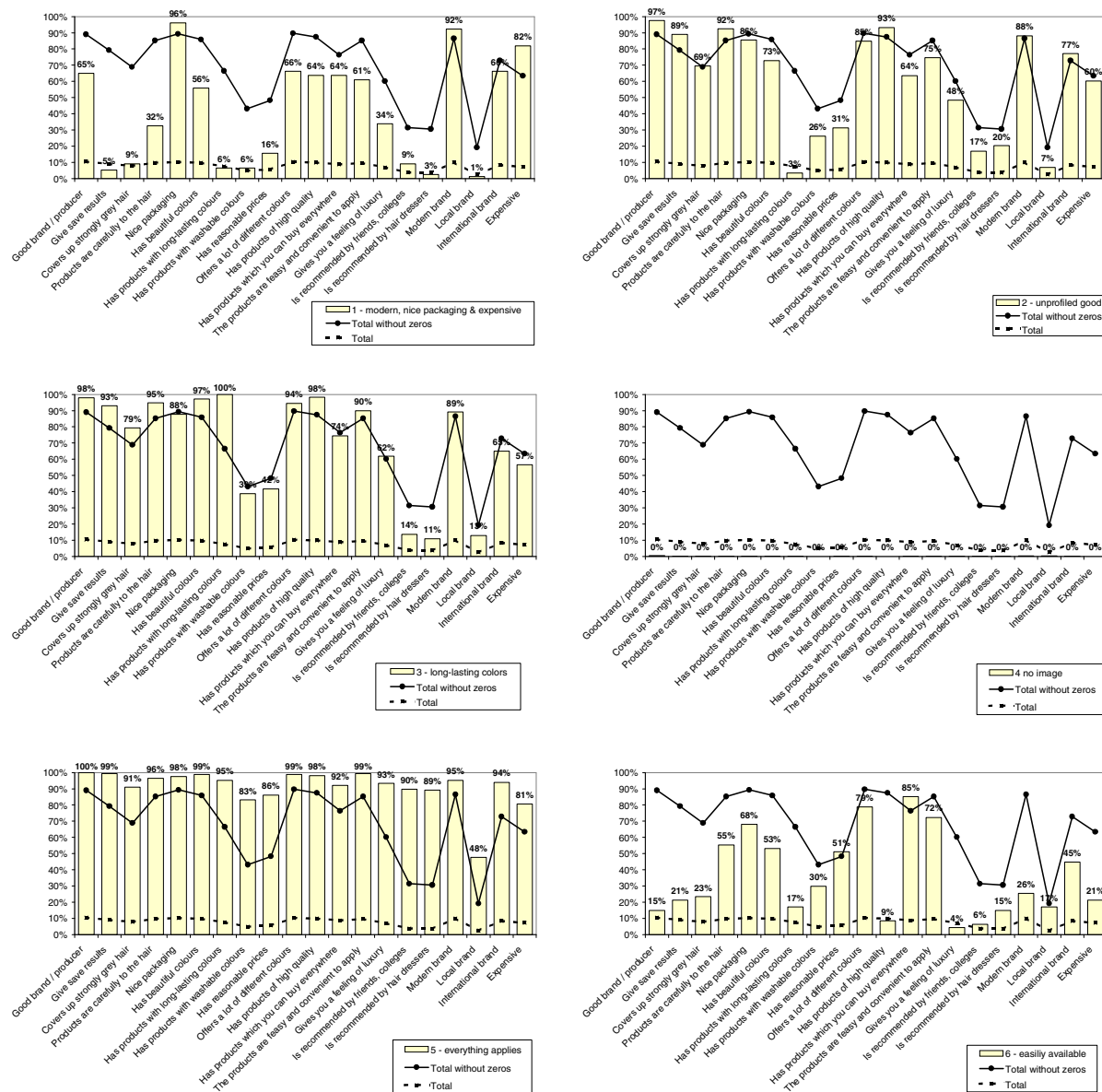


Figure 1: Outcome of steps 1 and 2 - generic perceptual hair-colorant positions

Position 4 is the typical position that contains all the zero vectors. Typically, when using PBMS, a large number of zero vectors is detected. This is partially due to the fact that respondents do not assign any of the attributes to a particular brand (the brand is thus perceived by them as having no image) or caused by missing data. In the latter case, the respondents did not even attempt to answer the question, which indicates that they do not know the brand and therefore, again, have not developed an image. With this kind of analysis, the large number of zero vectors does not distort the results, as they are all

collected in one single perceptual position. The remaining positions indicate existing brand image perceptions. So, position 4 is not interpreted. Perceptual position 1 is characterized (**step two**) by being modern and as well as having nice packaging: a very profiled position that includes 11 % of the brand profiles (one the zero-profiles are excluded). Position 2 (17 %) is generally perceived as good, but the precise reasons for this cannot be deducted. However, this perceptual position is not associated with long-lasting or washable colors, nor as reasonably priced. Position 3 (41 %) is perceived as high quality hair-colorant, where all the respondents agree that this image positions indicates long-lasting colors. Position 5 (24 %) is, similarly to position 4, possibly an answer tendency collection point. However, it could also mean agreement to all attributes, but before this position is chosen as target is should be further investigated, how high the proportion of answer tendencies is. Finally, position 6 (7 %) is characterized mainly by the ease of availability.

The Chi square tests on the contingency tables (**step three**) render significant results for the change of assignment to positions (p-value 0.005). The changes are illustrated in Figure 2. The number of brand perceptions assigned to the perceptual position 1 has strongly decreased, whereas position 6 has increased.

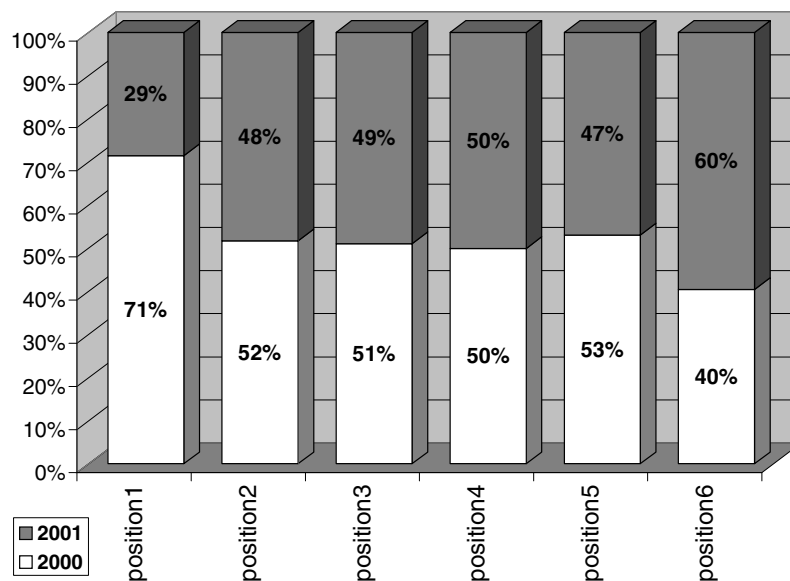


Figure 2: Outcome of step 3 - generic position size changes from 2000 to 2001

The Chi square test of changes of brand assignment within single positions renders significant differences at position 5 (p-value 0.047). The major shift is detected in brand D, which was assigned to perceptual position 5 three times as often in the year 2000 than it was in 2001. The strong shift in brand D is also confirmed when testing distribution changes on brand basis only. A strong shift from profiled positions to position 4 (the “no image”-position) can be detected, where brand D completely disappears from perceptual position one and dramatically decreases at positions 2 and 5.

Finally, in **step 4**, validation is conducted by computing a ten-position solution on the basis of the same data and crosstabulating results. As can be seen from Table 1 (dark shaded cells), positions 1, 4, 5 and 6 consist of the same brand profiles, indicating stable image positions that can be repeatedly revealed.

Table 1: Step 4 - crosstabulation of two independent partitioning solutions

Six cluster solution						
	1	2	3	4	5	6

Ten cluster solution	1				5446		
	2	66	5				
	3		1			154	
	4	2	16	8	7		
	5	7	1		1		37
	6		28	60			
	7				14		1
	8		8	5		5	9
	9	1	23	89		5	
	10	1	36	124		2	

The test for perceptual position changes over the one-year period of time renders highly significant results (p-value 0.000). As in the initial solution, the perceptual position indicating “nice packaging, modern & expensive” is strongly decreasing (distribution over years: 72 % in 2000, 28 % in 2001), and the “easily available” position is increasing (37% 2000, 63 % 2001). Additionally, other positions, which resulted from splitting up groupings of brand images from the six-position solution, are found to significantly change over time, but these insights are not relevant for the validation purpose of step 4.

Conclusions

A framework for tracking changes in perceptual positions (both generic perceptual positions as well as association of specific brands to these positions) over time has been proposed and illustrated using hair-colorant consumer survey data from the Eastern European market.

The framework consists of (1) computation of a data-driven generic perceptual positions, (2) characterization of generic perceptual positions, (3) testing of distribution changes and (4) validation of results. The framework is flexible regarding methodological approaches preferred at each step: any partitioning algorithm may be used in step 1 and either different numbers of groups or different algorithms or both can be used at the validation stage.

The main advantage of this procedure for management making strategic marketing decision on the basis of market structure analysis is that perceptual positions are treated as an integrated and holistic concept rather than focusing on single attribute changes over multiple periods of time for each brand. Furthermore, this framework allows for (1) validation of single data-driven segment/positioning solutions (higher external validity of the solution chosen as basis for the marketing planning process), it provides (2) increased insight into the changes encountered in the marketplace (more market structure information), as well as (3) a more integrated and thus more sound basis for forecasting, and (4) can be applied to the typical data format available in branded industries: multi-period brand image data with a different representative respondent sample each period.

This latter point also leads to the main limitation of the approach suggested: the insecurity arising from sampling at consecutive periods of time. If representative samples are not sufficient to exclude intervening variable effects, the tracking instrument proposed measures sampling mistakes and not changes over time. Precise surveying thus represents a crucial pre-requisite for this framework.

Further work will focus on systematically elaborating the possible definitions of market segments underlying this concept. The simplest possibility is to define segments by looking at the generic position the favorite brand is located at. More complex and possibly more

insightful options include analysis of patterns of brand assignments to specific perceptual position.

References

- Baumann, R. (2000). *Marktsegmentierung in den Sozial- und Wirtschaftswissenschaften: eine Metaanalyse der Zielsetzungen und Zugänge*. Diploma thesis at Vienna University of Economics and Management Science. Vienna.
- Buchta, C., Dolnicar, S. & Reutterer, T. (2000) *A nonparametric approach to perceptions-based market segmentation: applications*. Series: Interdisciplinary Studies in Economics and Management, Volume II. Springer-Verlag, Berlin.
- Mazanec, J. and Strasser, H. (2000). *A Nonparametric Approach to Perceptions-Based Market Segmentation: Foundations*. Springer: Berlin.
- Mazanec, J. (2000). Market Segmentation. In: Jafari, J. (ed.), *Encyclopedia of Tourism*. London: Routledge.
- Wedel, M. & W. Kamakura (1998) *Market Segmentation - Conceptual and Methodological Foundations*. Boston: Kluwer Academic Publishers.