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The perceived vs. chronological age – the role of the age perceived by senior consumers in the assessment of the quality of packaging

The abstract

The objective of this article is to show the effects of the disparity between the seniors' (people over 55) real age and the age perceived by them. The disparity between the age measured by the date of birth and the psychophysical condition, along with the way in which consumers perceive their own age results in the fact that the chronologically understood age is no longer a sufficient criterion for identifying a group of target consumers. Companies should adapt their way of communicating with senior consumers in such a way that they can build a rapport with the representatives of this consumer group. Since one of the elements of this communication is packaging, the intention of the researchers was to verify empirically the significance of packaging for seniors. It has been assumed that there are differences in the assessment of packaging related to the real vs. perceived age of senior consumers. Moreover, consumers suffering from various disabilities resulting from age may have different problems with packages.

The key words: packaging, seniors, buying behavior

The introduction

Packaging is a marketing communication tool which plays a key role in the process of making purchasing decisions and at the same time it is hardly recognizable by means of traditional marketing methods. Declaratively consumers perceive the role of packaging as unimportant and in many cases as an unnecessary expense. On the other hand, it has turned out that the companies' expenditure for packaging is rising and it is comparable to or even higher than that for advertising. [Chaneta 2010]. In the face of the broad range of products on the shop shelves, consumers are influenced by the attractiveness of the package. The issues related to the influence of packaging on the purchasing decisions have been studied by, among others: Pilditch, Nickels and Jolson, Butkeviciene, Stavinskien and Rutelione, Masten, Stewart, Hansen, Dickson and Sawyer, Bech-Larsen. Some researchers also points to the key significance of this marketing tool for particular shop formats [Arnold, Krancioch, 2011], or categories of products – food or cosmetics [Clement 2007, Barberi, Almanza 2006, Nestorowicz 2012, Mishra and Jain 2012].

The value of a package is determined by the role it plays not only during the process of buying, but also before and after the purchase, influencing consumer satisfaction, or the lack of it, The functions of packaging should be addressed to the target market of the product. The target group of seniors and their specific needs related to packages are very interesting from this point of view. Elderly consumers, who experience a number of limitations connected with their age, but at the same time feel younger than their chronological age, expect packages which will make them autonomous and still young consumers. [Doyle 2008].

Seniors are a group of consumers, which is constantly growing in number in the developed countries. According to forecasts for the European countries the share of people over 65 will increase from the level of 15% (2004) to 21% (2025). The share of the oldest part of population will be: in Italy (25.7%), Sweden (25.4%), Germany (24.6%), Switzerland (27.1%) and Finland (25.2%) [Długosz 2006].

The role of packages in marketing

Packaging is a modern tool of integrated marketing, known since the 70s of the 20th century. A package is a silent seller [Stewart, 1995], or a shelf seller [Silayoi, Speece, 2004]. Among all the promotion tools available at the point of sale, a package is still the major factor influencing the buying decision of a consumer. Kotler and Keller [2013] define it as “a five-minute advertisement of a product”, which helps consumers to get through the information

overload of a point of sale, full of products and promotions. An effective package guarantees that the product will be noticed by a consumer and will induce them to buy it. The value of packaging is also created by the consumer's emotions evoked by its attractive design [Vilnai – Yavetz and Koren 2013].

So far packaging has been presented in marketing works in a variety of contexts:

- packaging as a marketing mix tool (in the expanded 7P formula),
- packaging in relation to the product, price, distribution and promotion,
- functions and values of packaging in relation to consumers' needs,
- packaging in the product strategy,
- packaging in the promotion strategy (an advertising character, sales promotion carrier, brand image element),
- packaging and its design a source of emotions for consumers,
- packaging as an information and education platform for consumers.

In a number of markets where the core product does not determine the competitive advantage, packaging may create a substantial competitive advantage, becoming an independent marketing tool. A more interesting analysis of the role of packaging in marketing is based on the evaluation of the relationships between packaging and the particular tools of the marketing mix in its traditional formula (4Ps):

- packaging and product,
- packaging and price,
- packaging and distribution (place),
- packaging and promotion.

The strongest is the relationship between packaging and product. [Mruk 2012]. The package is meant to inform about the product, its qualities and characteristics. In the case of food products it informs about their taste, fragrance or ingredients. As for other types of products, a package may stress the modernity, high quality, or reliability of the product, or it may show the product features which are meant to meet the needs of a particular market segment.

The relationship between packaging and price refers to the share of the package in the final price of the product. A consumer does not see the package cost in the price of the product they buy, and the price informs them about the quality and quantity of the product. Downsizing may shape the way consumers perceive a product and thus influence their purchasing decision. [Ordabayeva and Chanton 2013]. The practical aspects of the product price and the package cost are interesting as subject of research, but at the same time they make designing packages very difficult. On the one hand, consumers want functional and attractive packages, which substantially increase the final price of the product. On the other – the high price discourages a number of customers from buying a product.

As for distribution, the function of packaging is purely practical. It is supposed to facilitate transport and exposition, should be adapted to the means of transport, as well as the height and the width of shop shelves.

Packaging is also an element of promotion, through which the product communicates with the market. Therefore, packaging is an effective source of information about the product, with the purpose of shaping and stimulating consumers' needs, as well as inducing an intention and a desire of purchase. Packaging may function as an independent promotional tool, or it may support other promotional activities (packaging as a character in a TV commercial, or sales promotion tool).

Effective packaging helps the product to stand out in the information overload in a point of sale, where hundreds of products are displayed, with advertisements and shop promotions. Such packaging is a guarantee that a product will be noticed by a consumer and it

will induce a consumer to buy the product. There has been substantial research conducted in the recent years on the influence of the packaging design on the purchase decision [Labrecque and Milne 2011, Silayoi and Speece 2007, Butkeviciene, Stravinskiene and Rutelione 2008, Kuvykaite, Dovaliene and Navickiene 2009]. However, no agreement has been reached as to what the packaging design is and what is its role in the purchasing process.

Packaging design creates a consumer's feelings and emotions, it is an abstract message about the attractiveness and the perceived quality of the product, which are a basis for evaluating the price level of the product. The packaging design is always addressed to a particular target market, the needs and expectations of which should be taken into account in the packaging designing process. Products for children will be packaged differently from those meant for older consumers, because these two target markets differ in their needs, attitudes and preferences.

The segment of senior consumers and its features

In the face of the ageing population the segment of elderly consumers is becoming an attractive target market for a number of companies, brands and products. [Kohlbacher, Sudbury, Hofmeister 2011]. However, this trend is not accompanied by the intensification in scientific research. According to Leyhausen and Vossen [2011], 75% of advertising agencies do not divide the 50+ market into more specific segments. The recent research shows that the segment of seniors is heterogeneous, with difficult to define criteria of membership, because the age and the professional activity are insufficient. Ageing is a process which takes place in three dimensions: physical, psychological and social [Reisenwitz and Ivel 2007]. The physical aspects of the old age are related to the worsening body condition, weaker hearing and seeing and limited mobility. From the psychological point of view, ageing entails a decrease in intellectual abilities, referring to cognitive processes (thinking, imagination, memory, the speed of information processing). Cognitive abilities of consumers over 60 are on average 30% lower than those of young people [Evanschitzky, Woisetschlager 2008]. The social dimension of the old age means a person's limited activity in various social roles (the higher intensity of family relations, the loss of professional links due to retirement). The smaller role of an elderly person in making purchase decisions is related to their decreased financial status. In the majority of countries retirement means lower income.

The age may also be analyzed have the context of emotions (the age a consumer perceives themselves to be), i.e. the age which results from the emotional state of a consumer.

Although the group of elderly consumers is commonly defined as a homogeneous age segment, it is necessary to verify this opinion. Problems with defining the group of elderly consumers are mainly related to establishing the age limit: should it be based on chronology, or rather on the perceived age? The chronological age determines legal drinking of alcohol, the voting right, or the right to have a driving license. A much more interesting criterion is the age perceived and felt by consumers. This age determines the intensity with which a person reacts to the physical, psychological and social changes in their organisms [Barak and Schiffman 1981].

Understanding the influence of age on the consumers' behavior and needs may be the key to designing effective product packaging, which will be more willingly accepted and chosen by senior consumers.

Research methodology and hypotheses

In May 2013 a survey was conducted by means of the direct individual interview, on a sample of 221 respondents aged 55 and more. The method applied was purposive sampling. Table 1 shows the respondents' characteristic. In this survey we focused on the influence of age: both chronological and perceived, as well as of the intensity of the physical,

psychological and social changes experienced by seniors on their perception of the quality of packaging, its functionality and communicativeness.

Table 1. The respondents' characteristics

Criteria	Number of responses	Share (%)
Sex		
Woman	125	57
Man	96	43
Age		
55-64	92	42
65-74	78	35
75 and more	51	23

The Source: own elaboration based on research findings.

It was assumed that the negative changes in the perception, functioning of senses and weakened mobility are the reasons why elderly consumers need different packaging, more suitable for their worsening psychophysical condition.

Three theses were formulated:

- The lower the consumers' perception of their own condition (physical, psychological and social), the lower is their evaluation of the packages available on the market. The perceived age to a higher degree determines the needs of a senior consumer towards packaging, than their chronological age.
- The evaluation of the significance of packaging depends on the chronological or perceived age of the senior. The quality of packages is more highly assessed by the consumers who lower their age than those whose declared age is similar to the chronological one.
- The older a consumer is, the more frequently makes shopping mistakes, because of being misled by the package.

The research findings

In the survey we pointed to the differences between the perceived and chronological age. The mean age perceived by respondents was 58, with the standard deviation of 17.8 years. In the two selected age group the perceived age fell out of the range of the chronological age (table 2). This fact indicates that in the younger age groups respondents perceive themselves as much younger than they really are, whereas in the older age group the perceived and the chronological age belong to the same ranges.

Table 2. Perceived average age in different age groups

Age groups	Mean age	N	Standard deviation
55-64	46,8	91	11,8
65-74	59,6	78	15,4
75 and more	75,5	51	15,3
Total	58	220	17,9

Source: Own elaboration based on survey findings

It should be pointed out that 41% respondents declared their perceived age as below the senior age limit, i.e. 55. It has been noticed that with age the awareness of one's own age is growing.

Table 3. Perceived and chronological age – structure of responses

Chronological age	Perceived age				Total
	Up to 54	55-64	65-74	75 and more	
55-64	71,4%	25,3%	2,2%	1,1%	41%
65-74	26,9%	23,1%	42,3%	7,7%	36%

75 and more	9,8%	3,9%	21,6%	64,7%	23%
Total	41,4%	19,5%	20,9%	18,2%	100%

$R^2=0,702$, $p<0,01$

Source: Own elaboration based on survey findings

Representatives of different age groups differently assess their own psychophysical condition (table 4). The respondents evaluated their condition on the basis of a rank order scale, where 1 meant that they do not perceive a change and 5 – that they definitely perceive it. It can be noticed that a substantial decrease in the assessment level takes place at the age of 75 and more. In other words, at this age respondents more likely to accept their chronological and perceived age. The biggest changes in the assessment of one's condition referred to worse hearing, the general state of health and the decrease in the intensity of interpersonal contacts.

Table 4. Assessment of psychophysical condition by people from different chronological age groups

Assessment criteria	55-64		65-74		75 and more	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Lower physical condition	3,12	1,14	3,79	1,13	4,16	1,14
Lower mobility	2,70	1,18	3,29	1,08	4,02	1,36
Worse eye-sight	2,97	1,27	3,45	1,03	3,86	1,34
Worse hearing	1,90	1,21	3,04	1,28	3,65	1,48
Weaker taste	1,61	1,02	2,22	1,27	2,61	1,60
Higher stiffness of fingers	2,13	1,13	2,69	1,26	3,18	1,68
Difficulties in remembering information	2,26	1,27	2,53	1,26	3,43	1,37
Worse overall state of health	2,56	1,25	3,72	1,22	4,04	1,20
Lower intensity of interpersonal contacts	1,90	1,30	2,53	1,38	3,24	1,50
Mean in the group	2,35	1,20	3,03	1,21	3,58	1,41

Source: own elaboration based on survey findings

The variables presented in table 4, which are used for the evaluation of the perceived state of health, were a basis for defining the perceived state of health index. It has been obtained as a mean value of the presented opinions. The overall value of the index was 2.87, in the group of the youngest seniors – 2.35, for the people aged 65-74 – 3.03 and in the oldest group – 3.58. Differences in the perceived condition between sexes have also been noticed. The condition index is 2.75 for women and 3.03 for men. (the differences were statistically valid $F(2.219)=4.179$ for $p<0.05$).

The respondents were asked to assess the quality of packages of everyday products. The assessment was based on scale from 1 to 5, where 1 means definitely not, and 5 – definitely yes. The total mean value obtained was 3.78, with the standard deviation 1.04. The analysis led us to the following conclusions. Firstly, in the groups of younger seniors there are no substantial differences in the assessment of packaging in relation to the real or perceived age of a respondent. The means are similar in value and the deviations are not statistically valid. Secondly, a bigger difference can be noticed in the age group over 75. Finally, in all the

groups the mean value is over 3, which means that the respondents are rather dissatisfied with the packaging.

Table 5. Assess the quality of packages in relation to perceived and real age

Real age			
Age groups	Mean	Number of responses	Standard deviation
55-64	3,77	90	1,18
65-74	3,87	77	0,88
75 and more	3,67	51	0,99
Total	3,78	218	1,04
Perceived age			
Age groups	Mean	Number of responses	Standard deviation
Up to 54	3,79	89	1,14
55-64	3,90	42	1,12
65-74	3,85	46	0,89
More than 75 lat	3,58	40	0,84
Total	3,78	217	1,04

Source: Own elaboration based on survey findings

The major problems connected with packaging are: difficulties with opening packages, the size, weight, illegibility of information, or lack of important information, descriptions in foreign languages and similarity of packages. These issues are treated differently in various age groups of seniors (table 6). It should be pointed out that the respondents who feel younger more seldom point to the problems with packaging. (the mean below the medium value equal 3), except the illegibility of information, the completeness of information and the best before date. With age increases the number of complaints about packages. In the case of chronological age the biggest change is related to the difficulties with the weight of packages, whereas in the case of the perceived age, the criticism of the similarity of packages and illegibility of information increased the most.

Table 6.

Perceived and real age of seniors vs. problems with packaging

Perceived age	Up to 54 lat		55-64		65-74		over 75 lat	
	Mean	Stand. deviation	Mean	Stand. deviation	Mean	Stand. deviation	Mean	Stand. deviation
Difficult to open	2,82	1,32	3,05	1,45	2,89	1,12	3,33	1,25
Too big in relation to needs	2,68	1,33	3,00	1,32	2,76	1,27	3,15	1,49
Too heavy, hard to carry home	2,40	1,16	2,63	1,23	2,57	1,19	2,88	1,44
Illegible information (too small print)	3,73	1,25	4,09	1,19	4,13	0,98	4,40	0,96
Incomplete information (e.g. about ingredients)	3,11	1,24	3,65	1,27	2,93	1,32	3,45	1,41
Illegible best before date	3,97	1,12	3,86	1,37	3,76	1,34	4,00	1,11
Information in a foreign language unknown to me	2,85	1,34	3,21	1,37	2,96	1,11	3,45	1,34
Similar packages	2,36	1,19	2,75	1,13	2,72	1,03	3,13	1,26
Total	2,99	1,24	3,28	1,29	3,09	1,17	3,47	1,28

Chronological age			55-64		65-74		over 75 lat	
			Mean	Stand. deviation	Mean	Stand. deviation	Mean	Stand. deviation
Difficult to open			2,90	1,41	3,03	1,17	3,04	1,30
Too big in relation to needs			2,60	1,38	3,05	1,20	2,94	1,48
Too heavy, hard to carry home			2,30	1,19	2,75	1,10	2,73	1,46
Illegible information (too small print)			3,97	1,22	3,91	1,13	4,25	1,06
Incomplete information (e.g. about ingredients)			3,43	1,30	2,99	1,22	3,31	1,44
Illegible best before date			3,91	1,13	4,00	1,25	3,78	1,32
Information in a foreign language unknown to me			2,92	1,39	3,12	1,22	3,20	1,30
Similar packages			2,53	1,19	2,74	1,12	2,75	1,25
Total			3,07	1,28	3,20	1,18	3,25	1,32

Source: Own elaboration based on survey findings

Another subject of the survey were mistakes made while shopping (have you ever happened to buy a product which after bringing it home did not turn out to be the one you thought you had bought?) It has turned out that such mistakes did not happen often and their frequency rises with a consumer's age.

Research results and managerial implications

The conducted survey leads us to a number of interesting conclusions related to senior consumers. Firstly, it needs to be stressed that in the near future the significance of this group of consumers will be rising, so it is essential for managers from both production and trade companies to improve their knowledge about this group's needs, in order to more properly adapt packaging to these consumers' expectations. Moreover, the research findings presented in this article corroborate the assumed thesis that the group of senior consumers cannot be treated as homogeneous. The younger the group of seniors in terms of the birth date, the less they identify with their chronological age. It could be assumed that these seniors will not be interested in the packaging directly addressed to their age group. Secondly, it has been assumed that the lower is the consumers' assessment of their own condition (physical, psychological and social), the lower is their evaluation of the packaging available in the market. This would imply that they need special packaging which would more adequately meet their needs. When the perceived and the real age converge, seniors become more unanimous in their assessments. Therefore, the perceived age is a more valuable factor for defining the needs of senior consumers towards packaging.

It must be pointed out that the evaluation of the quality of packaging differs in relation to age. This fact is an implication for managers to pay more attention to the barriers connected with the consumers' age. The thesis that the quality of packaging is more highly assessed by consumers who lower their age than by those whose declared age is similar to the chronological one, has been corroborated. Companies which use packaging as a means of marketing communication with the market of seniors should focus on the quality and informative value of the packaging. With special care should be treated such issues as the quality of the information placed on the package, as well as the size of the package.

It is justified to claim that the technological progress which is taking place in the field of communication will also influence the relationship between companies and this group of consumers. Businesses which will not adapt to their expectations – in terms of the information placed, the weight, or the functional features – will have to face difficulties in winning the seniors' approval for their products.

Limitation and future research

As it is normally the case with a number of surveys conducted on purposefully selected groups, there are limitations in the interpretations of the findings. The present survey does not deal with all the problems connected with packaging – its features and preferences among seniors. It is worthwhile to continue research on packaging from the perspective of the perceived age and subjective health condition. In the future it would be reasonable to focus on such issues as: the expected information on packages, exposing the best before date, reducing the packages' own weight, and also a possibility reducing their size. It would be also worthwhile to consider using the shopping space for enhancing the effectiveness of packaging (magnifying glass for reading labels, shop display adapted to the seniors' needs, intelligent packaging).

Bibliography

1. Arnold G., Krancioch S. (2011), "Current strategies in the retail industry for best-agers", [in:]: *The silver market phenomenon. Marketing and innovation in the aging society*, eds. F.Kohlbacher, C.Herstatt, Springer-Verlag Berlin Heideberg, pp.149-160.
2. Barak B., Schiffman L.G. (1981), "Cognitive age: a nonchronological age variable", *Advances in Consumer Research*, Vol. 8, pp. 602 – 606.
3. Barber N., Almanza B.A. (2006), "Influence of wine packaging on consumers' decision to purchase", *Journal of Foodservice Business Research*, Vol. 9, 4, pp.83-98.
4. Butkeviciene V., Stravinskiene J., Rutelione A. (2008), "Impact of consumer package communication on consumer decision making process", *Engineering Economics*, 1 (56) pp. 57-65, <http://search.ebscohost.com/>[21.11.2013]
5. Chaneta I. (2010), Marketing: packaging and branding, *Journal of Comprehensive Research*, Vol. 8, pp. 19-30, <http://search.ebscohost.com/> [21.11.2013]
6. Clement J. (2007), "Visual influence on in-store buying decisions: an eye-track experiment on the visual influence of packaging design", *Journal of marketing management*, Vol.23, No. 9-10, pp. 917-928.
7. Długosz Z. (2006), „Stan i perspektywy starzenia się w Europie w latach 2004-2025”, [w:] *Starość i starzenie się jako doświadczenie jednostek i zbiorowości ludzkich*, red: J.T.Kowaleski, P.Szukalski, Zakład Demografii UŁ, s. 429-439.
8. Doyle M. (2008), What packaging will consumers pay more?, *Beverage Industry*, October, Vol. 99, pp. 70-75, <http://search.ebscohost.com/>[21.11.2013]
9. Evanschitzky H., Woisetschlager D.M. (2008), "Too old to choose? The effects of age and age related constructs on consumer decision making", *Advances in Consumer Research*, Vol. 35, pp. 630 – 635.
10. Kohlbacher F., Sudbury L., Hofmeister A. (2011), "Using self – perceived and age list of values to study older consumer in 4 nations", *Advances in Consumer Research*, 2011, Vol. 39, pp. 341 – 346.
11. Kotler P., Keller K.L. (2013), *Marketing*, Rebis, s. 372.
12. Labrecque L.I., Milne G.R. (2011), "Exciting red and component blue: the importance of color in marketing", *Academy of Marketing Science*, Springer, pp.711 – 727.

13. Leyhausen F., Vossen A. (2011), "We could have known better – consumer – oriented marketing In Germany's ageing market", [in:] *From Gray to silver*, eds. S.Kunisch et al., Springer-Verlag Berlin Heidelberg, part D, pp. 175 – 184.
14. Mishra H.G, Jain D. (2012), "Impact of packaging In consumer decision making process of namkeen products", *Journal of Marketing Communication*, January – April, Vol7, nr 3, s.48 – 63.
15. Mruk H. (2012), *Marketing. Satysfakcja klienta I rozwój przedsiębiorstwa*, Wydawnictwo Naukowe PWN, Warszawa 2012, ss.102-132.
16. Nestorowicz R. (2012), „Narzędzia komunikacji marketingowej wspierające prozdrowotne wybory żywieniowe a zachowania nabywców”, *Handel wewnętrzny*, maj-czerwiec, tom I, s. 283 – 291.
17. Ordobayeva N., Chandon P. (2013), "Predicting and Managing Consumers' packaging size impressions", *Journal of Marketing*, Vol. 77, September, pp. 123 – 137.
18. Reisenwitz T., Iyel R. (2007), "Comparison of Younger and Old Baby Boomers: Investigating the Viability of Cohort Segmentation", *Journal of Consumer Marketing*, Vol.24, nr 4, s. 202-213.
19. Silayoi P., Speece M. (2007), "Importance of packaging attributes: a conjoint analysis approach", *European Journal of Marketing*, 41 (11/12), pp. 1495-1517.
20. Stewart B. (1995), *Packaging as an effective marketing tool*, Kogan Page-pira, pp.1 - 11.
21. Yavetz I., Koren R. (2013), "Cutting through the clutter: purchase intentions as a function of packing instrumentality, aesthetics, and symbolism", *The International Review of Retail, Distribution and Consumer Research*, Vol. 24, No. 4, pp. 394 – 417.