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CUSTOMER AGE AS A DETERMINANT OF PREFERENCES FOR INFORMATION SOURCES: EMPIRICAL ANALYSIS OF A CASE FROM CENTRAL EUROPE

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ABSTRACT. The issue of finding effective approaches to marketing communications has been the subject of interest for the academic community as well as marketing managers for several decades. This study presents the results of an empirical analysis concerning the preferences of more than 5,000 Central Europeans aimed at identifying the customers' preferred way of obtaining information depending on their age. The results of the analysis suggest that younger customers prefer online media, while middle-aged and older customers tend to prefer traditional information sources. The scientific contribution of the study is mainly in the results of cluster analysis, where we discover interesting mergers of customer clusters with a combination of preferentially similar age groups of customers. These newly discovered clusters can serve as a guide for more effective targeting of marketing communication to optimize the use of corporate resources and increase the overall competitiveness of companies operating in the Central European market.

Keywords: marketing communication, customer, efficiency, competitiveness, innovation.

Introduction

Since the advent of product marketing, businesses have faced the need to effectively optimize the use of resources to improve their competitiveness (Buch-Hansen, Wigger, 2010; Rust, Huang, 2014; Gupta et al, 2016). The twentieth century, i.e., the century in which media took on a multidimensional form, represents a milestone in the history of communication in its various forms (Shaw, 2009; Tadajewski, 2010). The first half of the century was characterized by a relatively dominant position of print forms of content sharing (Schildt, 2001). Print media represented an accessible and sufficiently illustrative way of content sharing between the sender and the recipient. Businesses that gradually encountered the pitfalls of the transition to the product concept of marketing in the thirties of the twentieth century used the press as a

communication channel to reach both potential and existing customers (Stallings, 1992; Keyes, 2014). Electronic forms of content sharing, represented at the time mainly by radio, were the domain of pioneers and innovators. Due to a limited number of target audience determined by the need for owning a physical radio receiver, this form of content sharing was unavailable to most markets. This largely determined the dynamics of the sector, and dynamic adaptation to trends was not necessary either on the side of content producers or on the part of target audience (Marssolek, 2001). The second half of the twentieth century was characterized by the continuous development of technologies; their availability became a significant acceleration factor for digitization and its applications in entrepreneurship (Morrish et al., 2020; Dimitrova, Smith, Andras, 2020). In any case, it was the last decade twentieth century, which in the context of the advent of the Internet in the nineties, brought a significant revolutionary phenomenon of e-communication. The phenomenon which, even after more than twenty years, does not lose its importance. (Peterson, Balasubramanian, Bronnenberg, 1997; Zhang, Dong, 2005; Ayanso, Lertwachara, Mokaya, 2015; Beke, Samu, 2018). All the above forms of content sharing have created certain patterns of behavior, with consumers divided into groups according to their age and preferring different forms of retrieving information (Cristóbal, Daries, Baldomar, 2015). At this point, we come to the key research problem of this study, with the basic assumption of existing diversity in the preferences for retrieving information across different age groups. This assumption is relatively well researched (Girard, Korgaonkar, Silverblatt, 2003; Davis, Lee, Yi, 2009; Chung, Rao, 2012; Liu et al., 2013); there is a relatively clear paradigm assuming that middle-aged and older target audience tend to use the media that are historically codified in practice. Younger target audience, on the other hand, prefer the media they consider natural, given their significant presence in their everyday lives from an early age (Hofstra, Corten, van Tubergen, 2016; Vijayalakshmi, Lin, Laczniak, 2018, Gavurova et al., 2020). The aim and ambition of the study is to shift this paradigm towards more sophisticated applications. The shift is expressed by the following research questions, specifically a basic one for the confirmation of the initial paradigm and an applied one for obtaining new knowledge:

-Is there a relationship between the age of a customer and his or her preferences for certain ways of obtaining information?

-Is it possible to identify common traits and patterns of behavior across generations based on the preferred ways of obtaining information for different age groups?

To achieve the main objective of the study, we will use a wide range of methodological apparatus to conduct an extensive empirical study of preferences on a research sample of a closed heterogeneous community of customers / users of a selected internet portal on the Central European market. Based on the confirmation of the initial paradigm, we will proceed to more sophisticated forms of analysis. Cluster analysis enables the identification and description of selected age groups' preferences with respect to the five basic type of media. Based on the historical tradition, media are distinguished as follows (Pollák, Dorčák, 2010):

- Daily press in paper form;
- Radio;
- Television;
- Daily press in electronic form;
- Internet search engines.

As for the structure of the paper, it is based on the traditional one, starting with an overview of the initial context based on the current state of knowledge in the issue. Subsequently, the objectives and methodological apparatus used in the study are presented, followed by the results of the study and their discussion. The key findings are visualized; in conclusion, the most important facts are summarized in order to identify the benefits/advance in knowledge for theory and business practice.

The presented study is elaborated within the comprehensive research of the issue of corporate reputation in the context of sustainability and improving competitiveness in a turbulent market environment.

1. Literature review

The initial precondition for the effectiveness of marketing communication is clear targeting of messages (Mohr, Nevin, 1990; Duncan, Moriarty, 1998; Costello, Reczek, 2020), while the extent to which targeting should be addressed can be questionable. Targeting is the domain of modern media; as for the mass media of the twentieth century, clear targeting has a form of widespread intervention of target segments as such (Narayanan, Manchanda, 2009; Jiménez-Marín, Galiano-Coronil, Tobar-Pesántez, 2021). At this point, we would like to point out a quote by Bill Crosby, who said that although he did not know the key to success, the guaranteed key to failure was to try to please everyone. If companies are trying to succeed in today's turbulent hypercompetitive environment, they need to manage resources effectively (Jarvis, Goodman, 2005; Cheng et al., 2009, Berman, Thelen, 2018, Mura, 2020), which applies not only to the resources necessary to produce products or services, but also the resources needed to secure business support processes (Weber, 2002). As it is not possible to reach every individual, target audience is determined by marketing segmentation. Kotler and Keller (2007) present three main sections and six basic steps in market segmentation. The following *Figure 1* illustrates these steps as follows:

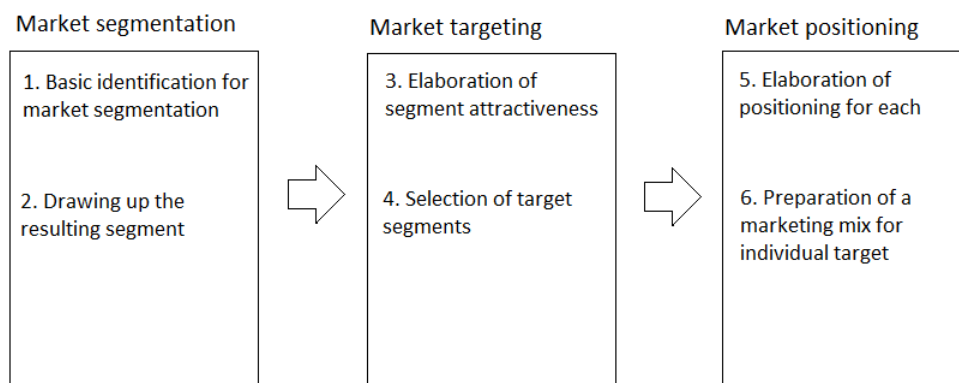


Figure 1. Six steps of market segmentation, targeting and positioning
Source: Kotler & Keller (2007)

Knowing the segment in which the company operates, as well as the direct or reference demand that are satisfied through its production is a prerequisite for profit (Martin, Wright, 1974; Athanassopoulos, 2000; Yankelovich, Meer, 2006). At the same time, the target groups of customers are very heterogeneous (Riefler, Diamantopoulos, Siguaw, 2012). Targeted marketing communication, unlike a broad reach marketing program, emphasizes the adaptation of marketing communication to the requirements of target customers, while it can be stated that the final form of a targeted marketing effort should be a tailor-made marketing communication mix (Rossi, McCulloch, Allenby, 1996; Chikweche, Lappeman, Egan, 2021). Both theory (Knight, 2000; Shth 2021) and practice codify the fact that any successful marketing strategy must be based on an analysis of the current state of the market and knowledge, followed by a survey of market opportunities, segmentation, targeting and, last but not least, the correct product placement. If everything is taken into account optimally, the company is highly likely to succeed in the market. This is the assumption on which the research on a formulated research

problem is based. As stated in the introduction, the basic research problem identified for the purposes of the presented study is the existence of diversity in preferences for the way to retrieve information across different age groups. In the context of the need for effective segmentation, in this case segmentation in terms of targeting marketing communication, a basic paradigm describing the existence of media preference based on the age of the customer is identified. Research by many authors describes the prerequisites for effective marketing communication in the Internet age (Peterson, Balasubramanian, Bronnenberg, 1997; Štefko, Dorčák, Pollák, 2011; Kalyanam, McIntyre, 2002; Gilmore, Gallagher, Scott, 2007; Reto, Rauschnabel, Hinsch, 2017; Pollák, Markovič, 2021); however, more sophisticated approaches to the issue of merging communication channels is limited. At first sight, the nature of the market, expressed in terms of customers' demographic profile, raises the fundamental question of experts from practice, namely the question of whether access through precise targeting of Internet tools is sufficient. The answer to this question is subsequently flat-rate diversified campaigns targeted at younger customers separately through the web, while middle-aged and older customers are addressed by means of traditional media. This approach, however, provides considerable scope for inefficiency. This applies especially to the case of "consistent" advertisers who, in order to prevent a possible segment failure, redundantly duplicate campaigns for all types of media. This approach can be seen, among other things, on the social and media platforms, where advertisers duplicate media content from television to platforms such as YouTube and the like. A combination of media is, of course, desirable (Batra, Keller, 2016); redundancy without deeper understanding less so. Given the relatively large amount of money that is spent globally on marketing communications every year (Graham, Frankenberger 2000; Markovitch, Huang, Ye, 2020), and of course the fact that all these resources are ultimately reflected in the final prices of products, it is appropriate to address the issue of finding effective approaches for possible mergers of target segments, especially when it comes to segmentation based on their media preferences. Since there is a relatively large number of segmentation criteria (Tollefson, Lessig, 1978; Boone, Roehm, 2002; Shannahan, 2016), for the purposes of the analysis, two fundamental ones, ie gender and age, were chosen to define the segments based on the customers' age. By describing the basic assumptions for the elaboration of the study, we can smoothly move on to the chapter where the aim of the study, procedures, as well as the used methodological apparatus necessary to meet the defined goal are described.

2. Methodological approach

The aim of the study is to identify and describe the diversity in the preferred ways of retrieving information across different age groups of customers. The initial research problem is formulated in two research questions as follows:

-Is there a relationship between the age of a customer and his or her preferences for certain ways of obtaining information?

-Is it possible to identify common traits and patterns of behavior across generations based on the preferred ways of obtaining information for different age groups?

The first research question represents the basic paradigm of the existence of different preferences in the ways of obtaining information. It is also a starting point for the implementation of more sophisticated analyses, which will be performed in order to answer the second research question. Therefore, we use statistical analysis to examine the relationship between age and the preferred method of obtaining information. The first step of the analysis is to formulate the Null Hypothesis H_0 and the alternative hypothesis H_1 . The hypotheses are formulated as follows:

H₀: We assume that there is no statistically significant relationship between the age of customers and their preferred way of obtaining information.

H₁: There is a statistically significant relationship between the age of the customers and their preferred way of obtaining information.

In the independence hypothesis, both variables are considered random variables and are therefore randomly selected from the population, assuming their complete independence. This means that the value of Var1 does not affect the conditional distribution of Var2. We have chosen Var1 = Age of customers and Var2 = Preferred method of obtaining information as variables, while if the null hypothesis is rejected, then Var2 will be a dependent variable on Var1.

As for the hypotheses, 5 different ways of obtaining information (for each of the ways on a five-point Likert scale from "Very often" to "Not at all") are tested. If the dependence of users' age on the preferred way of obtaining information is confirmed, the age category that prefers the given type of information retrieval will be determined.

The selected significance level α is 0.05.

The object of the research are customer preferences for information sources. As for the customers themselves, in our case they carry out their activities on the Central European market. From the marketing point of view, the Central European market represents a relatively specific catching-up market; in such a market, the element of competition is multiplied by the factor of lower purchasing power. There is literally competition between the entities of the supply side of the market for the available resources of customers, where even a small hesitation or inefficiency can possess relatively significant existential risks for companies.

The research sample consists of all customers who make their purchases in the researched area; due to the research possibilities of the authors of the study, this sample is extrapolated to a closed community / group of 5,000 users of the selected internet portal. This community was randomly selected and has elements of a heterogeneous nature representing the population, users within this community are represented in terms of gender and age to an acceptable extent. The subject of our research is therefore the customer age as a determinant of preferences for information sources Age is the key scale for the research. In terms of this parameter, we have chosen six age groups by expert estimation, namely:

- Under 25 years,
- 25 to 34 years,
- 35-44 years,
- 45-54 years,
- 55-64 years,
- 64 years and older.

The predisposition from the point of view of active use of all media under review, ie press (paper and electronic form separately), television, radio, and internet is also fulfilled. For the purposes of the research, the selected research sample is considered a population. For the purposes of the study, the entire research sample is addressed using the CAWI (Computer-assisted Web Interviewing) method. The structured questionnaire consists of a wide range of relevant questions, while key areas are asked through questions based on Likert scale. As for the actively participating respondents, their number $n = 1584$ is considered in the calculations. Given the extrapolated sample and the method of primary data collection, the sample can be considered highly active.

For the purposes of the statistical analysis in the first of the research questions, we use a wide range of methodological apparatus. Since we work with two numerical cross-tabulated variables, we use a contingency table to identify their relationship. Corresponding contingency tables are created based on the data obtained from the questionnaires. To measure the strength

of the relationship in the contingency table, several coefficients are proposed that work similarly to the correlation coefficient. After creating the table, the coefficients are calculated. Specifically, these are the values of the Pearson chi-square test. This test is valid asymptotically, so it can be only used with a sufficient number of observations. Therefore, it is not necessary to test for normality, given the use of non-parametric testing, but the variables must be randomly selected and in sufficient numbers, which is met in our case. For the purposes of the statistical analysis in the second research question, in order to implement more sophisticated measurements, the method of Cluster analysis is used, which deals with how objects (statistical units) should be classified into groups so that there is as much similarity within the groups. At the same time, it shall be ensured that there are as many differences between the groups as possible. This type of analysis is particularly appropriate, as it is used directly in market segmentation, with consumer classification based on a combination of several variables. Variables, i.e. segmentation criteria, include gender, age, education, product experience, consumption size, frequency of consumption, etc. In the case of the study being presented, the segmentation criterion is age.

The data were processed in MS Office and Statistica software.

3. Conducting research and results

The empirical material has been subjected to a thorough statistical analysis. In order to answer the first research question, statistical analysis is performed. Since we work with two numerical cross-tabulated variables, we use a contingency table to identify their relationship. In the Statistica program, corresponding contingency tables are created from the empirical material. To measure the strength of the relationship in the contingency table, a chi-square test is used, the only assumption of which (apart from the rules related to sampling) is the rule that the expected frequencies must not be small $m_{ij} \geq 1$. We will check this rule in the *Table 1*. of expected frequencies as follows:

Table 1. Table of expected frequencies

Var1 (Age)	Var2 (Preferred way of obtaining information)					Line sum
	Daily Press (paper)	Daily Press (online)	Search engines	Radio	Television	
Up to 24 y.	309.222	118.8611	40.3333	11.91667	3.66667	484.000
25 to 34 y.	451.694	173.6256	58.9167	17.40720	5.35606	707.000
35-44 y.	152.694	58.6938	19.9167	5.88447	1.81061	239.000
45-54 y.	72.194	27.7506	9.4167	2.78220	0.85606	113.000
55-64 y.	24.917	9.5777	3.2500	0.96023	0.29545	39.000
65 y. and older	1.278	0.4912	0.1667	0.04924	0.01515	2.000
Overall	1012.000	389.0000	132.0000	39.00000	12.00000	1584.000

Source: *own compilation*

As the expected frequencies are less than 1 in some fields, the condition of using the chi-square test is violated. All other cases tested show the same violation. Given this fact, although the Pearson chi-square test provides the tested statistics greater than the chi-square with the respective degrees of freedom and a value much smaller than the selected significance level of 0.05, the hypothesis of variable independence cannot be rejected. If we neglected this rule, the test would confirm the dependence of the given variables, even though it would not occur there. Therefore, it is possible to move on to the analysis of derived tables created on the

basis of the original contingency tables by merging the low-occupancy categories in the individual selections. Subsequently, these combined contingency tables are tested and based on the calculated tests and coefficients, we will decide whether to accept or reject the selected hypotheses. In each of the tested cases, we merge the least represented category of 65 y and older in Var1. with a category of 55-64 y. The merged category is referred to as 55 y. and older. From the point of view of partial tables, in all tested cases, except for Var2 = Internet search engines, all categories were represented quite a lot. Therefore, a merger was not necessary. In Var2 = Internet search engines, we merged the low-represented "I don't use" category with the "I rarely use" category and the newly created category is called "Rarely or don't use at all". In this case, the condition for using the Pearson chi-square test is no longer violated, and thus the calculated statistics are applicable. It is thus possible to proceed to the calculation of statistics in order to verify the hypotheses shown in *Table 2*.

Table 2. Test of hypotheses.

	Information source	
	Chi-Square Value	P-Value
H _{1a} : Relationship between age and preferred method of obtaining information- Daily Press (paper)	58.22063	0.0000
H _{1b} : Relationship between age and preferred method of obtaining information- Daily Press (online)	72.56285	0.0000
H _{1c} : Relationship between age and preferred method of obtaining information- Search engines	96.50378	0.0000
H _{1d} : Relationship between age and preferred method of obtaining information- Radio	142.2523	0.0000
H _{1e} : Relationship between age and preferred method of obtaining information- Television	143.9419	0.0000

Source: *own compilation*

In all cases, the Pearson chi-square test provides a test statistic greater than chi-square with appropriate degrees of freedom and a p-value slightly lower than the selected significance level of 0.05. Therefore, at the selected significance level, the null hypothesis can be rejected, and the dependence hypothesis is accepted. This means that the hypothesis of the existence of a statistically significant relationship between the age of customers and their preferred method of obtaining information is confirmed. At the same time, we confirm the initial paradigm, which is a prerequisite for further, more sophisticated analyses. Before proceeding to their visualization and interpretation, it is necessary to comment on all the media used in terms of the observed customer interactions. On the basis of the measured interactions, it can be concluded that the most commonly used form of retrieving information within the youngest age group is working with Internet search engines, followed by television and websites. The situation is similar in the age group of under 34, which almost entirely follows the preferences of the youngest of the segments studied. The age group of under 44 prefers to retrieve information from television, which is followed by radio, search engines and websites. In the age category of under 54, electronic versions of daily newspapers are mostly preferred, with other ways of retrieving information being radio and television. In the age category of 55+, television and radio are the most frequently used sources of information in the order in which they are listed. These facts are clearly illustrated in the *Table 3*.

Table 3. Test of hypotheses.

Age group	Preferred way of obtaining information
Under 25 y.	Search engines
25 to 34 y.	Search engines, Daily Press (paper)
35-44 y.	Television
45-54 y.	Daily Press (online)
55-64 y.	Radio, Television
64 y. and older	Television

Source: *own compilation*

If we look in more detail at *Figure 2*, parts a) to e), we will find that the preferred way of obtaining information is related to the age of users as follows:

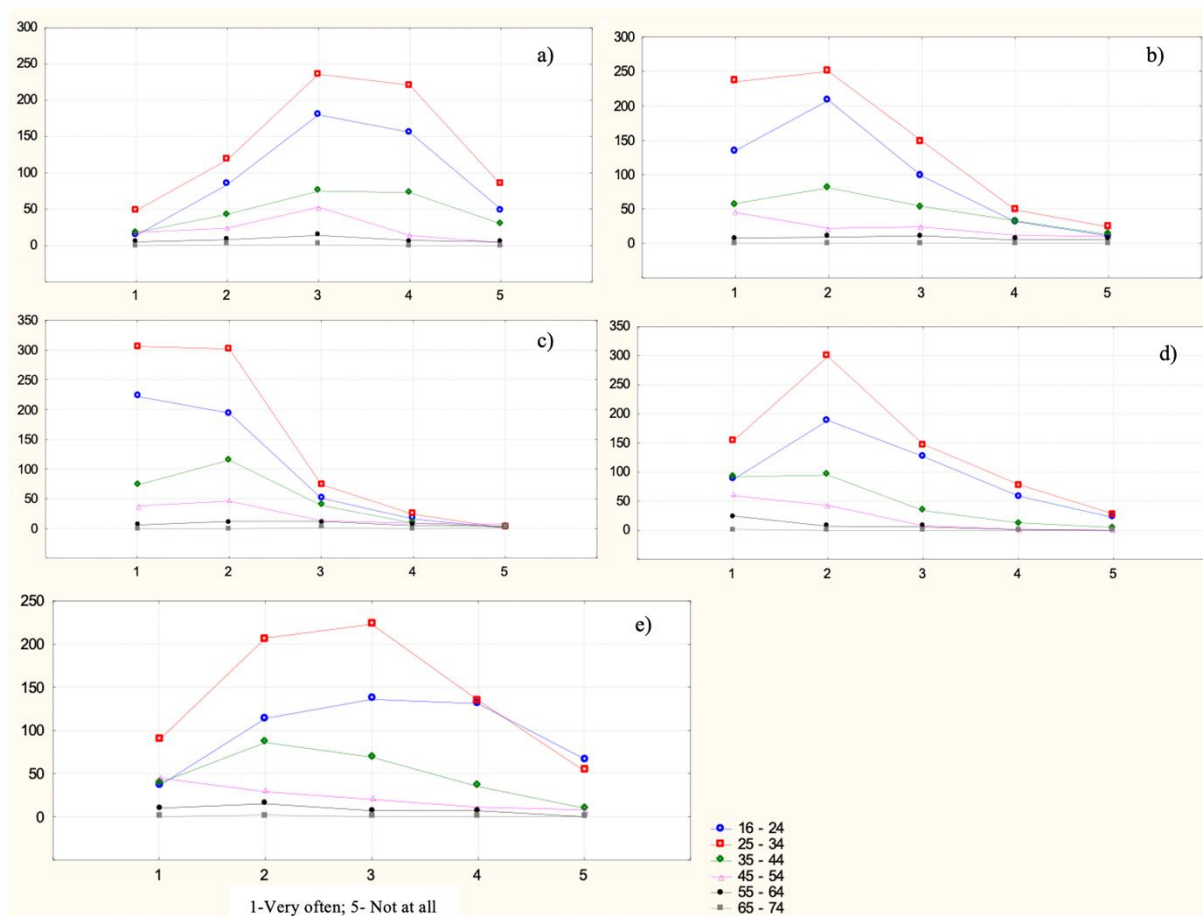


Figure 2. Graphical evaluation of context; a) Daily Press (paper), b) Daily Press (online), c) Search engines, d) Television, e) Radio.

Source: *own data*

By describing the basic characteristics, it is possible to move on to more sophisticated analyses, the next chapter focuses on illustrating and interpreting the relationships identified by means of the cluster analysis for each of the selected information sources. The objects of analysis are grouped so that the maximum similarity, as well as differences between the groups are ensured within the groups. Individual information sources are visualized based on preferences in *Figure 3*.

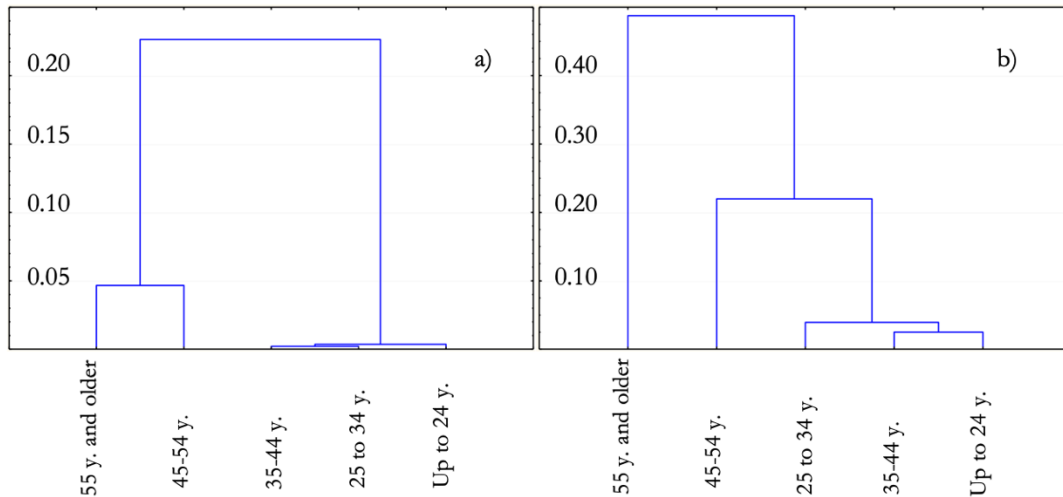


Figure 3. Cluster analysis- Daily Press; a) paper, b) online.

Legend: axis x- Combined age category; axis y- Joint distance

Source: *own data*

The individual age categories are grouped on the basis of how often they obtain information from the daily press, distinguishing whether it is daily press in traditional paper form or in electronic form. As seen from the schemes, the acceptance of the hypothesis of age dependence and preferred form of information retrieval were correct. The users in the category of under 44 are most similar to each other, while the age groups of 45-54 also show certain similarity. The age category of 55+ created by merging sparsely represented categories of 55-64 and 65+ also show certain similarity, regardless of the preferred form of the daily press. If we look at the schemes in more detail, we can notice more significant differences between the groups preferring the daily press in electronic form. Users under the age of 24 and users in the age category of 35-44 show the greatest similarity. This finding is quite interesting, especially when considering that the age categories of 25-34 and 35-44 show almost identical features of similarity preferences in the case of daily newspapers in the paper form. As for significantly different features, they can be noticed in both information sources in the age category of 45+, while in terms of traditional newspapers, it is possible to clearly identify 2 different clusters, namely the off-line cluster, which is represented by customers at the age of 45+ and the online cluster, which consists of users in categories of under 44 years. We believe that this fact must be taken into account when planning marketing communication campaigns.

As for the Internet search engines, which are a phenomenon of the Internet age, the situation is as follows in *Figure 4*.

In the case of the cluster analysis of preferences for Internet search engines as an information source, we came across several interesting findings. The first is the relatively large spacing between links, the largest in terms of all the information sources examined. At the same time, the grouping of preferentially similar age groups is also interesting. As far as the most similar groups are concerned, the two youngest age groups are quite predictable, namely the age group of under 24 years and the age group of 25-34. Slightly surprising is the degree of similarity between these groups and the age group of 45-54. Although there was not enough empirical material available to analyze the relationship in detail, we consider this fact to be worth of further investigation. The age group of 55+ is the most diverse group within the sample, and in this case, the question of the effectiveness of search engine targeting for this age group should be analysed.

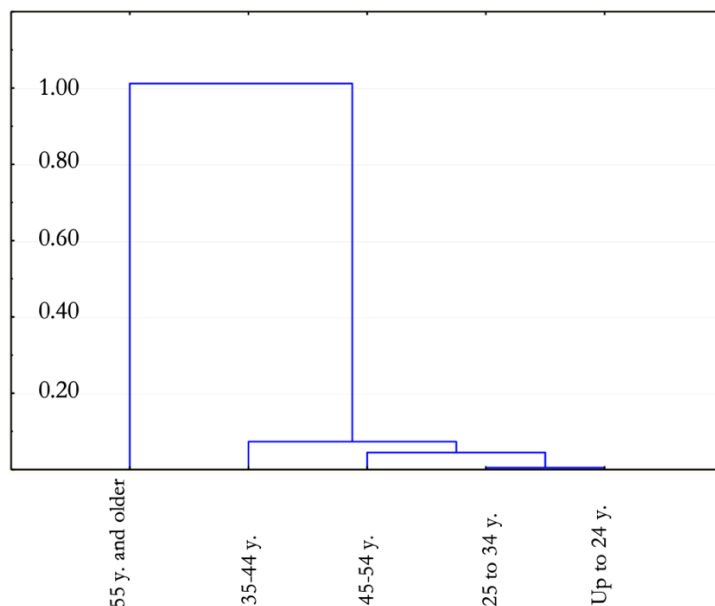


Figure 4. Cluster analysis- Search engines.

Legend: axis x- Combined age category; axis y- Joint distance

Source: *own data*

On the other hand, there is a high level of targeting for this form of promotion, so if a pay-per-click format is available, the effectiveness of these means will be at an acceptable level. If you choose impression-based promotion formats, the 55+ age group is more likely to not notice this form of promotion. Regarding traditional promotional formats or traditional information sources with the character of mass communication media, in our research, we pay attention to both radio and television. These formats represent the backbone of media communication in the second half of the twentieth century. In terms of their effectiveness, we are currently facing two basic problems, the first being the steady decline of audience, and the second one the relatively high costs of this type of marketing communication. In the case of television in particular, we are entering a sphere where only the biggest players in their field can afford to promote their messages on the national level. On the other hand, both television and radio are predominantly passive-aggressive media, where relatively low effort or passivity is enough from the point of view of the recipient of the message to make them a 'victim' of this form of media communication. The previous forms of information dissemination, on the other hand, require an active approach on the side of the user. The situation of traditional media in the market is analysed as follows in *Figure 5*.

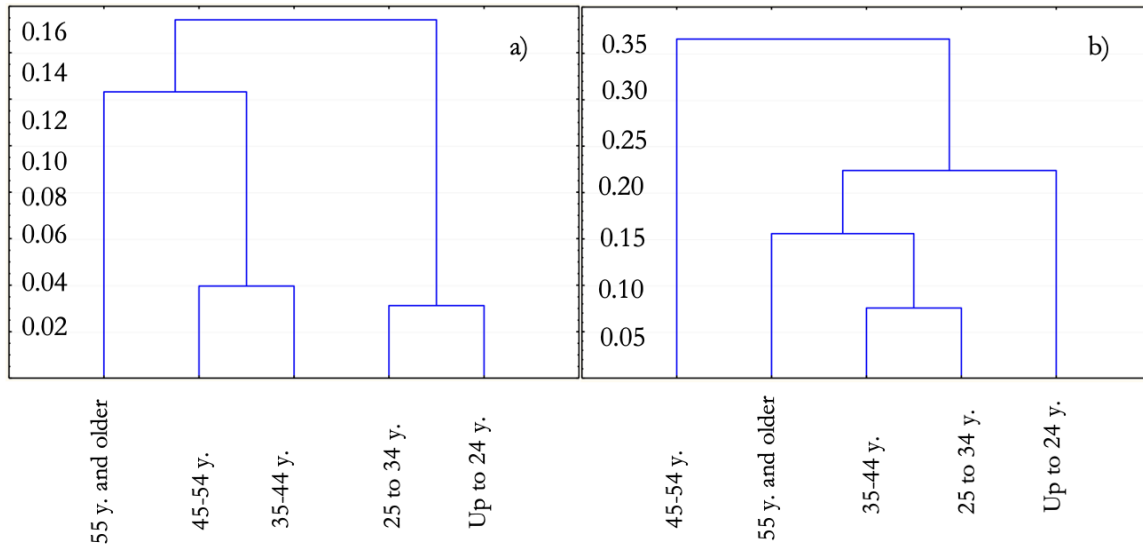


Figure 5. Cluster analysis- Traditional mass media; a) Television, b) Radio.

Legend: axis x- Combined age category; axis y- Joint distance

Source: *own data*

In the case of traditional mass media, such as daily newspapers in paper form, relatively small connection distances are recorded. It is particularly the case of television, where the distances are minimal. It is evident that television as a mass medium requiring the passive participation of a consumer of media content, still plays the role of a relevant source of information. It is not only the passive nature of the viewer's participation, but also the tradition of a certain exclusivity of the content that is presented in such a form. From the point of view of the similarity of the features in the preferences, the target segments analyzed are expected to be arranged in age-related blocks. Nevertheless, even there can be seen a generational difference, where the age group of under 34 represents a specific group, while the block of customers from the age of 35 is more similar to the 45+ category in terms of their preferences. This finding is quite interesting; at the same time, it is possible to state with a certain degree of abstraction that for targeted content in the age category of under 35, television as an information source is already on the verge of efficiency. However, for the category of 35+, it still plays the role of a mainstream information source, and it is not very different whether the content is targeted at the category of 35-44 or 45-54. For the age group of 55+, television is a clearly preferred information source. According to the results of the empirical analysis, the least preferred source is radio as the oldest electronic mass media. In this case, age group clusters are evenly distributed. In terms of their preferences, the categories of 25-34 and 35-44 are the most similar to each other. An interesting finding is the fact that in terms of their preferences, these clusters are more similar to the oldest group of customers than to the age group of under 24 years of age. A special group in this case is represented by a cluster of 45-54 years, where the connection distance is the longest one. Even in this case, we see that the acceptance of the hypothesis of the existing relationship between age and the preferred form of retrieving information was correct. It is also possible to answer the second research question, where based on the analyzed data and their subsequent interpretation, it can be stated that there are common features and patterns of behavior across generations in terms of the preferred ways of obtaining information. At this point, it is possible to formulate the results of the study.

Conclusion

The objective of the paper was to identify and describe the differences in the preferred ways of retrieving information across different age groups of customers. By analyzing the preferences of more than 5,000 customers, it was possible to answer both research questions and thus achieve the stated research objective of the study. Using the statistical analysis, it was possible to confirm the existence of a relationship between an individual's age and his or her preferences in terms of preferred ways of obtaining information. This initial paradigm was confirmed for all examined information sources, specifically newspapers (both in printed and online form), Internet search engines, television, and radio. Regarding the patterns of behavior of individual groups of customers in terms of their preferred sources of information, it can be stated that there is a generational difference between the preferences of customers over and under 45 years. Specifically, it applies to the daily press, regardless of its form. In terms of online formats, both search engines and online newspapers, the age group of 55+ group differs significantly in terms of its preferences from the rest of the age groups being analysed. Both radio and television show a relatively even distribution of preferences across the analyzed target groups, but even in this case, it is possible to notice certain patterns of behavior. This is mainly due to the similarity in the preferences of the age groups of under 35 and over 35 years; with a certain degree of abstraction, it can be stated that addressing the audience of under 34 years of age through television reaches the limits of resource efficiency. A similar case occurs in the age group of 55+ in the case of preferring search engines; therefore, investing in pay-per-view promotion without a deeper specification of a specific age category can very easily miss the target. However, if a content producer switches to pay-per-click and makes the extra effort of specifying an exact age-restricted segment, they can achieve relatively high marketing communication effectiveness, even with a lower number of customers. Regarding the combination of information sources for different segments, the formats of search engines and newspapers in printed form appear to be effective for the age category of 25-34, or the most unsuitable combination for the age category of 55+ turns out to be search engines and electronic form of the daily press.

The analysis of this issue has provided empirical material that might contribute to the advance of knowledge in the issue. The added value of the study is mainly in the graphical processing of the results of the cluster analysis. By combining age groups of customers that are similar to each other in terms of their preferences, we can see relatively interesting mergers of customer clusters. These newly discovered clusters can serve as a means of more effectively targeting the marketing communication to optimize the use of corporate resources, as well as to increase the overall competitiveness of companies operating in the Central European market.

Limitations and possible scope for future research

Despite the considerable efforts of the authors, it is possible to identify certain limitations in the presented research. These are mainly based on the regional nature of the data. From the point of view of marketing, the Central European market represents a relatively specific catch-up market. However, we believe that the degree of competition to which the market is specific creates conditions that do not reduce the ability of the data to generalize results. Active market behavior patterns, where both sides try to maximize their benefits, may, in our opinion, be relatively accurate and applicable even in developed markets, where the sides of the market have partially satisfied the most necessary needs and market exchanges take place with greater freedom. Regarding the limitations in data processing and presentation, it should be noted that the intention of the authors was to individually identify the degree of agreement

in each selected age group in view of the monitored parameters, preferred information sources: i) Daily Press (paper), ii) Daily Press (online), iii) Search engines, iv) Television, v) Radio. In order to exclude the influence of other factors, cluster analysis is in this case thus used as a tool for graphical illustration of differences in user preferences rather than a data processing tool. This limitation is considered both in the presentation of the results as well as in the formulation of general conclusions.

Regarding the issue as such, we can state that we are living in a time of accelerated digitization. Emerging markets are slowly catching up with developed markets. The perspective of the approximation of the Central European digital market towards developed digital markets will be a particularly interesting area for future research. Especially as we take into account the assumption of the conjunction of preferences for obtaining information across generations. The combination of these variables creates a considerably unexplored area worthy of targeted academic research. At the same time, the presented study is developed within the framework of comprehensive research on the issue of corporate reputation in the context of sustainability and increasing competitiveness in a turbulent market environment. The issue of sustainability in relation to business and business management as such is at the center of the mainstream thematic axes of management science.

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