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## ARTIFICIAL INTELLIGENCE AND THE EFFECTIVENESS OF MARKETING MESSAGES

**Summary:** *The lack of scientific research on whether there are, and if so, how big are the differences in the attitudes of population about the effects of artificial intelligence on increasing the effectiveness of marketing messages is a research problem. Descriptions of the strength of attitudes of different groups of respondents are broken down by gender, age, highest level of education and work status on whether does the use of artificial intelligence in marketing increases the effectiveness of marketing messages and explanations of reasoning for such strong attitudes represent goal and science contribution of this research.*

*Results of the research are positive, in other words, there is a general understanding among the respondents that artificial intelligence should be used in marketing to increase its effectiveness. The authors consider that over time there will be an increase of the understanding of the benefits in using artificial intelligence in marketing and overall business because increase of usage of artificial intelligence in business is also trending in Croatia.*

**Keywords:** *Artificial intelligence; effectiveness of marketing messages; Weight of evidence method*

**JEL classification:** *M31, C15*

### 1. Introduction

The use of artificial intelligence in marketing is a subject of research of numerous scientific articles. Davenport and associates researched the ways in which the application of artificial intelligence in marketing affects and will affect changes in marketing strategies and customer behavior in the future. Chintalapati and Pandey published a research paper in which they presented a broader review of scientific literature on the use of artificial intelligence in marketing. They identified five different areas of application in those research papers. By searching the database of scientific papers “Web of Science”, Labib analyzed 522 papers published in the period between years 2015. – 2023. in which subject of the research was usage of artificial intelligence in marketing. The results of his research are the identification of six clusters of subjects in these studies. Scientific contributions to all these scientific articles were of a theoretical nature. The only scientific article in the database of scientific papers Web of Science that referred to the empirical research of the behavior of the population that most often uses communication channels with bidders was the work of Arsenijević and Jović. The lack of sci-

entific research on whether there are, and if so, how big are the differences in the attitudes of the population about the affects of the application of artificial intelligence on increasing the effectiveness of marketing messages is a research gap. It is the attitudes about the application of artificial intelligence to increase the effectiveness of marketing messages that are the subject of research. The aim of research is to describe the strengths of the attitudes of all groups of respondents in their divisions according to gender, age, highest level of education and work status about the effects of the application of artificial intelligence on increasing the effectiveness of marketing messages and to explain why the strengths of these attitudes are that way.

### 2. Literature review

Golder and associates consider that the design of scientific research, which implies first a review of the scientific literature results in limited knowledge. In the scientific paper “Learning from Data: An Empirics-First Approach to Relevant Knowledge Generation” they offer a different “Empirics-first” approach. They consider that the col-

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lection of data and their appropriate processing enable more valuable analysis results that enable a neutral way of explaining and performing neutral scientific conclusions. They conclude that an “Empirics-first” approach allows scientists to focus attention on certain aspects of the data resulting in an interpretation of the data beyond the data itself (Golder, Dekimpe, An, Heerde, Kim, & Alba, 2022).

The authors of this paper support the “Empirics-First” approach in scientific research. The authors of this paper consider that, unfortunately, a huge number of scientific papers, especially in the field of economics, are written so that their authors can ensure the conditions for academic advancement, and not so that the results of the research they have conducted effectively expand scientific knowledge. Furthermore, in a small number of scientific papers in the field of economics, the conclusions have practical applicability.

The research conducted for the purposes of this paper was designed precisely with the “Empirics-First” approach in order to avoid drawing limited conclusions due to the theoretical framework that significantly directs the conclusion. The authors of this paper want to present how the “Empirics-First” approach enables practically applicable results of scientific research. In continuation they are the conclusions of several researches in the domain of artificial intelligence in marketing published in the Web of Science database in the last 5 years presented, which confirm that the “Theory-first” approach results in limited, insufficiently applicable scientific conclusions.

Devenport and associates consider that artificial intelligence will significantly change marketing strategies and customer behavior. They problematize previous theoretical research because they only related to the levels of artificial intelligence that are used, the types of tasks that are solved by its application and whether the task is preformed by a robot in which artificial intelligence is embedded. Based on the results of the theoretical scientific research and extensive practical experience, they suggest the application of a multidimensional framework for precisely explaining the impact of artificial intelligence on business. They conclude that the application of artificial intelligence should improve the impact of artificial intelligence on business. They conclude that the application of artificial intelligence should improve the work of people, not replace their work. They suggest that the subject of future scientific research should be marketing strategies and customer behavior in the future. They continue that the results of those studies should offer the answers on how to protect customer privacy,

not to be biased and to conduct business ethically (Devenport, Guha, Grewal, & Bressgott, 2020). Yang and associates that development of artificial intelligence has significantly contributed to economic growth and thus the general social productivity. The application of artificial intelligence also influenced the work in marketing. The direct contribution of the application of artificial intelligence is manifested in more precise marketing, directed towards the desired market segments or completely personalized. Such way of working increased the effectiveness of marketing messages and reduced marketing costs. Yang and associates conclude that large amount of data allows marketers to work more easily and at the same time more effectively and cheaply. By applying artificial intelligence from a large amount of data, it is easy to identify the exact wishes of consumers, the optimal offer for them and finally a high-quality relationship between retailers and consumers (Yang, Li, Ni, & Li, 2021). Van Esch and Black state that digital marketing based on the use of artificial intelligence represents a “revolution” of marketing work. By applying artificial intelligence, companies shape the contents of marketing campaigns, target potential customers, reduce sales cost, manage customer experience, advertise and increase base of potential consumers using social media. Using the example of business organizations Red Ballon and Harley Davidson, they explained how artificial intelligence is used to automate digital advertising campaigns. However, the authors consider that the use of artificial intelligence in marketing is at an early stage of the life cycle marked by “conceptualizing, theorizing and researching the use and impact of artificial intelligence.” They expect a significant increase in the use of artificial intelligence in marketing. They point out the possible disadvantages of applying artificial intelligence in marketing. For example, in such way of marketing, the ethical questionability of the business may arise. Or, how marketing professionals will react when most of their work will be automated. Will they perceive it as a threat or will they react positively because they will not have to spend time preforming routine tasks but will be able to devote themselves to creative work? They conclude that precisely because the application of artificial intelligence in marketing is at an early stage, neither all the opportunities nor all the threats are known (Van Esch & Black, 2021). Jarek and Mazurek stated that the application of artificial intelligence has become and emerging trend. In many areas. Among others in science and economy. This also applies to marketing. The goal of their work was to investigate how and to what extent is artificial



intelligence used in marketing. They investigated the application in practice based on secondary data. They found that artificial intelligence is significantly used in operative practice in marketing. They concluded that artificial intelligence is used in all aspects of marketing. For example, for shaping the marketing mix, which increases the value of offers to consumers. Furthermore, artificial intelligence is also used to manage marketing processes. Finally, they proposed how to manage the improvement of competencies of marketing teams in the application of artificial intelligence (Jarek & Mazurek, 2020). Alansari and associates investigated the application of artificial intelligence in digital marketing. Their results showed that artificial intelligence is significantly used in digital marketing, although such a way of working represents a significant effort for digital marketers. They continue that such way of marketing has affected the complexity of maintaining business competitiveness. The goal of their research was to identify optimal strategies for using digital marketing to its full potential in order to achieve differentiation in relation to the competition in order to achieve the best possible business results (Alansari, Hamdan, & Alareeni, 2023). Wu and Monfort investigated the application of artificial intelligence to shape marketing strategies in 278 food business organizations. Using structural equation modeling and qualitative comparative fuzzy set analysis (FsQCA), they explain that there is a contribution to increasing marketing effectiveness when artificial intelligence is used. Furthermore, the research results explain that there are positive correlations of market orientation, marketing skills of employees, joint creation of consumer and business organization values with positive effects of marketing activities. Furthermore, they explained the cause-and-effect relationships, market orientation, marketing skills of employees, joint creation of value for consumers and business organizations with the development of artificial intelligence application in marketing strategies. Finally, the results of their research explain that market orientation, skills of employees, joint value creation of consumers and business organizations and the strategy of applying artificial intelligence in marketing are necessary and sufficient conditions for increasing business success (Wu & Monfort, 2022). Chintalapati & Pandey investigated digital transformation as a consequence of the increasing use of artificial intelligence by reviewing the scientific literature in 57 scientific papers. The findings of their research are that there have been major changes in the way of work in marketing. They identified five areas of marketing: “integrated digital mar-

keting, content marketing, experienced marketing, marketing operations and marketing research” and 19 “activity levers” that have seen changes due the usage of artificial intelligence. Using qualitative and quantitative methods, they ranked those 57 scientific papers based on “their coverage, impact, relevance and contributed guidelines, research contexts and scenarios”. After the research conclusions, they proposed plans for the future research on the digital transformation of business organizations initiated by the use of artificial intelligence in marketing (Chintalapati & Pandey, 2022). Using the method of systematic literature search, Labib analyzed 522 scientific papers on the use of artificial intelligence in marketing published in the period between 2015- 2023 in journals indexed in database of scientific papers Web of Science. He concluded that the analyzed works lack comprehensive reviews. By conducting a bibliometric analysis, he identified six areas of application of artificial intelligence in marketing:” psychosocial dynamics, dynamic market strategies enhanced by artificial intelligence for consumer services, artificial intelligence for decision making, artificial intelligence for value transformation and artificial intelligence for ethical marketing”. He also presented recommendations for future research in the domains of “context, method and theory” (Labib, 2024). Arsenijević and Jović conducted an empirical study on 60 subjects in which they analyzed subjects’ behaviors, habits and expectations in communication with salespeople. The results showed that the respondents believe that the biggest advantage of using the “chatbot” as an artificial intelligence tool in marketing is the quick availability of simple information. However, they also identified the consumers fear that they will get the wrong information through the “chatbot”. They concluded that business organizations should use “chatbot” as a communication channel with consumers, especially if they communicate with them often and if they intend to adapt to the lifestyle of young consumers (Arsenijević & Jovic, 2020).

### 3. Empirical research

There are the four subchapters in this chapter. The first one describes the empirical research model, that is, the way data was collected, described and processed. In the second subchapter, the statistical method Weight of Evidence is described, with application of which the goal of the research was achieved. The third subchapter includes a description of the researched data, in other words the respondents’ responses, graphically with his-

togram and numerical values of 13 parameters of descriptive statistics. The fourth subchapter includes the results of the analysis of respondents in their divisions according to gender, age, highest level of education and work status, which is the goal of research.

### 3.1 Empirical research model

The data on the basis of which the research was conducted are the answers to the surveys question "I believe that the use of artificial intelligence in marketing will result in more effective marketing messages." The research instrument is an online survey. The link to the online survey was sent to Libertas University undergraduate students in Business Economics at 664 e-mail addresses. In addition to the link, the e-mail message included the request to forward the link to family members and ask them to answer survey questions. The distribution of respondents' answers to the analyzed survey question is described graphically and numerically. The graphic description of the distribution refers to the histogram on which it is a plotted and the normal distribution curve. The numerical description of the distribution includes the values of 13 descriptive statistics parameters. All values from the chart and table are interpreted. The analysis of the attitudes of different groups of respondents are divided by gender, age, highest level of education and work status, whether the application of artificial intelligence increases the effectiveness of marketing messages was carried out using the statistical method Weight of Evidence. Explanations are offered for the groups of respondents within their divisions according to gender, age, highest level of education and work status that have extreme values, in other words highest positive values and the lowest positive values of the statistical parameter Weight of Evidence.

#### Statistical method *Weight of Evidence*

Statistical method *Weight of Evidence* is used to calculate the value of the influence of each represented variable in the analyzed data set on selected target variable. In this research, the target variable refers to respondents' attitudes about the effects of using artificial intelligence on the effectiveness of marketing messages. The target variable has two values: *Does not increase the effectiveness of marketing messages* and *Increases the effectiveness of marketing messages*. The value of the target variable *Does not increase the effectiveness of marketing messages*

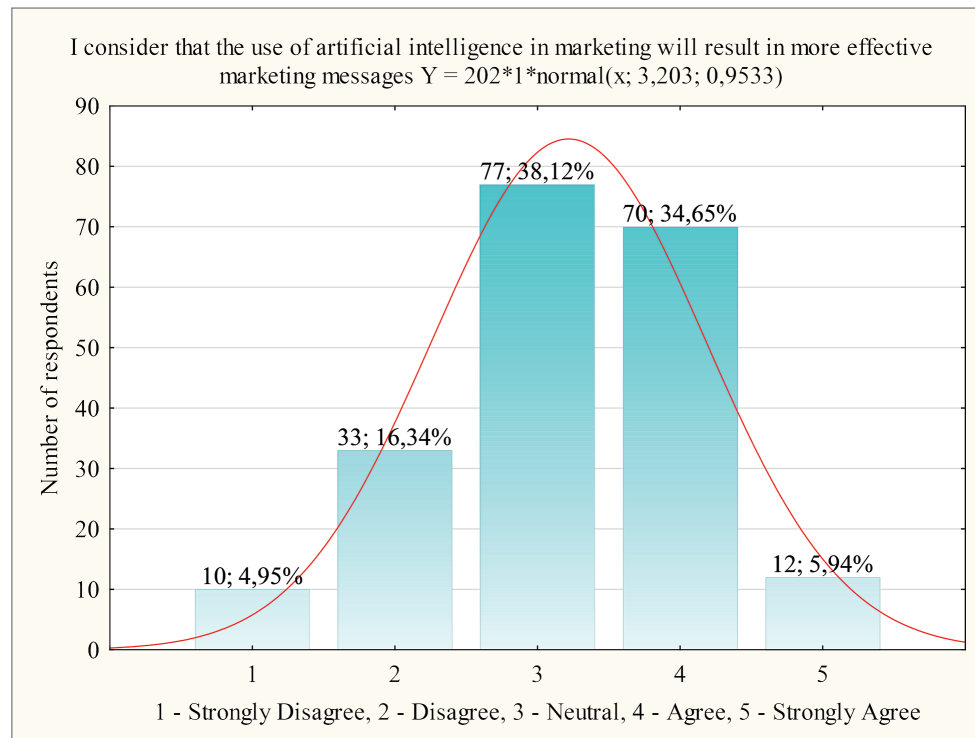
includes respondents answers to the survey question: *I consider that the use of artificial intelligence in marketing will result in more effective marketing messages* that have qualitative values: *Strongly Disagree*, *Disagree* and *Neutral*. The value of the target variable *Increases the effectiveness of marketing messages* includes responses to the same survey question that have qualitative values: *Agree* and *Strongly Agree*.

The values of the variable Weight of evidence for each represented group of respondents in distributions according to gender, age, highest level of education and employment status are calculated according to the formula:  $WoE = \ln\left(\frac{Pdmp}{NPdmp}\right)$ . Each calculated value represents the natural logarithm of the percentage ratio between the value of the variable *Pdmp*, which refers to the target variable *Increases the effectiveness of marketing messages*, and the variable *NPdmp*, which refers to the target variable *Does not increase the effectiveness of marketing messages*. The calculated values of the Weight of Evidence variables represent the values of the natural logarithms of the ratio. Therefore, relevant conclusions about the attitudes of groups of respondents can be drawn on the basis of smaller samples.

### 3.2 Description of the distribution of respondents' answers

The research sample is Libertas University students and their families. 202 respondents participated in the research. The distribution of responses to the survey question: *I consider that the use of artificial intelligence in marketing will result in more effective marketing messages* is shown in graph 1. The graph also shows a normal distribution curve whose equation is  $Y = 202 \text{ normal}(x; 3.2030; 0.9533)$ . The values of the statistical parameters *Mean* = 3.2030 and *Standard deviation* = 0.9533 represent the arguments of the function used to draw the curve.

10 respondents answered the survey question with the level of agreement *Strongly Disagree*, which represents 4.95% of the total number of respondents. The same question was answered by 33, or 16.34% of the total number of respondents with answer *Disagree*. In response to the survey question, most of the respondents chose *Neutral*. There were 77 of them, which represents 38.12% of the total number of respondents. The answer *Agree* was chosen by 70 respondents, that is, 34.65% of the total number of respondents. Surprisingly for the authors, only 12 respondents, which represent 5.94% of the total number of



Source: Research and processing by the author

Graph 1. Distribution of respondents' answers to the question: I consider that the use of artificial intelligence in marketing will result in more effective marketing messages

respondents, chose *Strongly Agree* as an answer to the analyzed survey question.

The values of the descriptive statistics parameters that describe the distribution of respondents' answers to the survey question: *I consider that the use of artificial intelligence in marketing will result in more effective marketing messages* are shown in Table 1. The value of the statistical parameter *Total number of respondents* = 202, which means that the research participated 202 respondents answered the survey question. Because the value of the statistical parameter *Minimum* = 1, and the value of the statistical parameter *Maximum* = 5, the respondents answered all levels of agreement between *Strongly Disagree* and *Strongly Agree* to the analyzed survey question. For this reason, the value of the statistical parameter *Range* = 4, which means that all levels of agreement are represented among the answers.

The value of the statistical parameter *Median* is = 3. This means that the distribution of answers is such that 50% of the answers with the smallest numerical values with which the respondents answered the survey question are the answers *Strongly Disagree*, *Disagree* and *Neutral*. The other 50% of answers, which in the distribution of answers include those with the highest numerical values, are represented by the answers *Neu-*

Table 1. Values of the descriptive statistics of the distribution of respondents' answers to the survey question: *I consider that the use of artificial intelligence in marketing will result in more effective marketing messages*

Descriptive statistics parameter	Value
Valid N	202
Minimum	1
Maximum	5
Range	4
Median	3
Mode	3
Frequency of Mode	77
Mean	3,2030
Variance	0,9088
Standard deviation	0,9533
Coefficient of variation	29,76 %
Skewness	-0,3475
Kurtosis	-0,2022

Source: Research and processing by the author

*tral*, *Agree* and *I Strongly Agree*. The statistical parameter *Mode* has the value = 3. This means that the majority of respondents answered the analyzed survey question with the answer *Neu-*  
*tral*. This is how 77 respondents answered, which

is indicated by the value of the statistical parameter *Frequency of Mode*. The statistical parameter **Mean** has a value = 3.2030, which means that in response to the analyzed survey question, slightly more respondents chose the answers *Agree* and *Strongly Agree* compared to those who chose the answers *Strongly Disagree* and *Disagree*. The statistical parameter *Variance* has a value = 0.9088, and the statistical parameter *Standard Deviation* has a value = 0.9533. Those two statistical parameters represent the absolute values of the deviation from the mean of the response distribution. A clearer, relative, measure of the variability of the distribution of responses to the survey question I believe that the use of artificial intelligence in marketing will result in more effective marketing messages is indicated by the value of the statistical parameter *Coefficient of variation*. This statistical parameter has a value of = 29.76%, which means that the variability of the response is moderate. The statistical parameter *Asymmetry coefficient* has a value = -0.3475. This value means that the asymmetry of the distribution of answers to the analyzed survey question is medium strong and that more respondents chose the answers *Agree* and *Strongly Agree* compared to those who chose the answers *Strongly Disagree* and *Disagree*. The statistical parameter *Coefficient of roundness* has a value = -0.2022. Because this value is negative, the distribution of responses to the analyzed survey question is sharper compared to the roundness of the curve of a normal, or Gaussian, distribution.

### 3.3 Analysis and interpretation of respondents' attitudes

The calculated values of the variable *Weight of evidence* for each group of respondents in the four observed divisions are presented in tables so that they are sorted from the largest to the smallest, that is, from the group of respondents that has the most pronounced opinion that the use of artificial intelligence in marketing will result in more effective marketing messages.

Table 2 shows the values of the strength of the attitude of women and men to the question: *I consider that the use of artificial intelligence in marketing will result in more effective marketing messages*. Both respondents believe that the use of artificial intelligence in marketing will result in more effective marketing messages. Among female respondents, this attitude is more pronounced compared to the strength of this attitude among male respondents.

Table 2. Values of the strength of attitude of each group from the distribution of respondents according to the gender of the question: *I consider that the use of artificial intelligence in marketing will result in more effective marketing messages*

Weight of Evidence value	Gender
0,8465	Female
0,1535	Male

Source: Research and processing by the author

The authors consider that the reason for this fact is that women, in general, make more purchasing decisions than men, so they are more interested in marketing messages and their effectiveness than men. Furthermore, women use social networks more than men, so they had more opportunities to testify about the effectiveness of marketing messages based on data from social networks.

Table 3 shows the values of the strength of the attitude of each group from the distribution of respondents by age to the question: *I believe that the use of artificial intelligence in marketing will result in more effective marketing messages*. All respondents believe that the use of artificial intelligence in marketing will result in more effective marketing messages. The youngest respondents have the most pronounced attitude about this, while the oldest respondents have the least pronounced attitude about this fact, almost neutral. It is evident from the distribution that there is a negative correlation between the age of the respondents and the strength of the attitude that the use of artificial intelligence in marketing will result in more effective marketing messages.

Table 3. Values of the strength of attitude of each group from the distribution of respondents according to the age of the question: *I consider that the use of artificial intelligence in marketing will result in more effective marketing messages*

Weight of Evidence value	Age
0,3812	18 - 25
0,1832	26 - 35
0,1782	36 - 45
0,1535	46 - 55
0,0891	56 - 65
0,0149	65 +

Source: Research and processing by the author

The authors believe that the explanation for this correlation is that the young respondents are



mostly in the educational process or have recently completed it, so during their education they had the opportunity to learn about artificial intelligence and its possibilities. With increasing age, respondents had fewer opportunities to acquire knowledge about the possibilities of using artificial intelligence in business, so in the older groups of respondents, the number of respondents who believe that the use of artificial intelligence will result in more effective marketing messages is almost equal to the number of respondents who believe that it will not or have a neutral attitude.

*Table 4. Values of the strength of attitude of each group from the distribution of respondents according to the working status of the question: I consider that the use of artificial intelligence in marketing will result in more effective marketing messages*

Weight of Evidence value	Working status
0,6238	Employed
0,2376	Pupil (student)
0,0495	Part time employee
0,0446	Unemployed
0,0446	A pensioner

Source: Research and processing by the author

Table 4 shows the values of the strength of the attitude of each group from the distribution of respondents according to work status to the question: I believe that the use of artificial intelligence in marketing will result in more effective marketing messages. All respondents believe that the use of artificial intelligence in marketing will result in more effective marketing messages. Employed respondents have the most pronounced attitude about this, while retired, unemployed and occasionally employed respondents have the least pronounced attitude about this fact.

The authors consider that the explanation for such a division of opinions is that the employees had more opportunities to become familiar with artificial intelligence and its possibilities, as Croatian business organizations use it more and more in their operations over time. For students, the explanation is the same as for the distribution of the strength of attitudes by age. Part-time employees, the unemployed and retired people had little or no opportunity to become familiar with artificial intelligence and its possibilities, which is why in the groups of respondents who work occasionally or do not work at all because they are unemployed or retired, the number of respondents who believe that the use of artificial intelligence will result in more effective marketing

messages almost equal to the number of respondents who believe that they will not.

Table 5 shows the values of the strength of the attitude of each group from the distribution of respondents according to the highest level of education to the question: I believe that the use of artificial intelligence in marketing will result in more effective marketing messages. All respondents believe that the use of artificial intelligence in marketing will result in more effective marketing messages. The respondents with a high school diploma have the most pronounced opinion on this, and the least expressed opinion on this fact, almost neutral, is among those with a PhD. It is evident from the distribution that there is a negative correlation between the highest level of education and the strength of the attitude that the use of artificial intelligence in marketing will result in more effective marketing messages.

*Table 5. Values of the strength of attitude of each group from the distribution of respondents according to the highest level of education: I consider that the use of artificial intelligence in marketing will result in more effective marketing messages*

Weight of Evidence value	The highest level of education
0,4802	High School
0,3020	Bachelor
0,2129	Master
0,0050	Doctoral Degree

Source: Research and processing by the author

The authors consider that the explanation for this correlation is that respondents whose highest level of education is high school, precisely because of the lowest level of education, that is, a lower level of business competence, believe more in the use of technology in general, including artificial intelligence, in relation to the work of people. The most educated respondents have greater business competences, which are why they rely on their competences in their professional work, because they believe that the application of technology does not solve problems, but only enables faster implementation of man-made solutions.

## 4. Conclusion

Using the Weight of Evidence statistical method, it was determined that all respondents believe that the use of artificial intelligence in marketing will result in more effective marketing mes-



sages. Because trends in business show that artificial intelligence is being used more and more, including for the business function of marketing, the results of this research that there is a general understanding of the benefits of using artificial intelligence in marketing represent a positive fact. However, among respondents who are older, have the highest level of education and who work occasionally or do not work at all because they are unemployed or retired, the strength of this attitude is slightly expressed. Among these groups, the attitude that the use of artificial intelligence in marketing will result in more effective marketing messages is almost neutral.

Descriptions of the strength of attitudes of different groups of respondents divided by gender, age, highest level of education and work status, whether the use of artificial intelligence in marketing increases the effectiveness of marketing messages and explanations of the reasons for such strengths of these attitudes represent the goal

and scientific contribution of this research. The results of the research are positive, that is, there is a general understanding among the respondents that artificial intelligence should be used in marketing. The authors consider that with the passage of time, the understanding of the benefits of using artificial intelligence in marketing and in the overall business will increase, as the trend in Croatia is also to increase the use of artificial intelligence in business.

The limitation of this research refers to its conclusions, which were derived based on the processing of data from a small sample. Furthermore, the sample is not random. The respondents of the research were Libertas University students and their family members, mostly from Zagreb. The guidelines for future research refer to the determination of a larger sample of respondents from different environments, which will increase its representativeness, so the conclusions will be scientifically more relevant.

## Literature

- Alansari, A. K., Hamdan, A., & Alareeni, B. (2023). How Artificial Intelligence Revolutionizing Digital Marketing. *Impact of Artificial Intelligence, and the Fourth Industrial Revolution on Business Success* (pp. 187-198). Cham : Springer Nature.
- Arsenijevic, U., & Jovic, M. (2020, 7 24). Artificial intelligence marketing: Chatbots. *International Conference on Artificial Intelligence Applications and Innovations*, pp. 19 - 22.
- Chintalapati, S., & Pandey, S. K. (2022, 1). Artificial intelligence in marketing: A systematic literature review. *International Journal of Market Research, Volume 64 Issue1 Page 38-68*, pp. 38 - 68.
- Davenport, T., Guha, A., Grewal, D., & Bressgott, T. (2020, 1). How artificial intelligence will change the future of marketing. *Journal of the Academy of Marketing Science, Volume 48, Issue 1*, pp. 24 - 42.
- Golder, P., Dekimpe, M., An, J., Heerde, H. v., Kim, D., & Alba, J. (2022, 9 13). Learning from Data: An Empirics-First Approach to Relevant Knowledge Generation. *Journal of Marketing, Volume 87, Issue 3*, pp. 319-336.
- Jarek, K., & Mazurek, G. (2020, 05 8). Marketing and Artificial Intelligence. *Central European Business Review Volume 8, Issue 2*, pp. 46 - 55.
- Labib, E. (2024, 12 31). Artificial intelligence in marketing: exploring current and future trends. *Cogent Business & Management, Volume 11, Issue 1*.
- van Esch, P., & Black, B. J. (2021, 8 24). Artificial Intelligence (AI): Revolutionizing Digital Marketing. *Australasian Marketing Journal Volume 29, Issue 3*, pp. 199 - 203.
- Wu, C.-W., & Monfort, A. (2022, 10 17). Role of artificial intelligence in marketing strategies and performance. *Psychology & Marketing Volume 40, Issue 3*, pp. 484 - 496.
- Yang, X., Li, H., Ni, L., & Li, T. (2021, 8 8). Application of Artificial Intelligence in Precision Marketing. *Journal of Organizational and End User Computing Volume 33 Issue 4*, pp. 209 - 219.