

## THE DETERMINATION OF THE IMPACT OF EMOTIONAL ADVERTISING APPEALS ON WILLINGNESS TO RECYCLE

 Viktorija Grigaliunaite<sup>1</sup>, PhD;  Ausra Pažeraite<sup>2</sup>, PhD, Assoc. Prof.;  
 Mantautas Rackauskas<sup>3</sup>, PhD

<sup>1, 2, 3</sup>Vytautas Magnus University

**Abstract.** The importance of recycling is undeniable for the circular economy and it is one of the main strategies for waste minimization. Therefore, effectively performed encouragement of recycling becomes urgent. Social advertising that promotes recycling is one of the methods to encourage society to reach higher levels of recycling. Thus, it is of interest to determine whether a negative appeal (fear) or a positive appeal (joy) makes a bigger impact on willingness to recycle. Yet, this has rarely been studied directly. Therefore, the scientific problem solved in the article is: how does joy and fear advertising appeals impact willingness to recycle? This paper aims to determine the impact of joy and fear advertising appeals on willingness to recycle. To reach the aim of the article, the implicit association test and questionnaire survey were provided. The analysis of research results revealed that the fear appeal advertisement for recycling seems more interesting, but the implication can be made that a bigger impact on the attitude toward recycling and willingness to act is made by joy appeal advertisement which is preferred unconsciously.

**Keywords:** advertising appeal, emotional appeal, willingness to recycle, attitude toward recycling.

**JEL code:** M30, M31, M37

### Introduction

An enormous amount of waste is generated each year. By the year 2050, global municipal solid waste generation is expected to have increased by roughly 70 percent to 3.4 billion metric tons (Statista, 2022). Nevertheless, there is an idiom "one man's trash is another man's treasure". Sweden identified an opportunity and started a recycling revolution, turning waste into energy and making it a multi-million-dollar industry (Blue Ocean, 2022). Waste-to-energy and recycling are compatible and complementary in the circular economy (Van Caneghem J., 2019). Hence, recycling is one of the keywords for the circular economy (Diaz-Lopez C. et al., 2021) and the primary strategy for waste minimization (Li Y., Yang D., Liu Y., 2021). Consumers, on the other hand, are often held hostage to unsustainable consumption habits due to ineffective promotion (Gangale F., Mengolini A., Onyeji I., 2013). Therefore, effectively performed encouragement of recycling becomes urgent.

Research shows that public involvement and behavior change are inseparable from the success of the transition to a circular economy (Eurobarometer, 2017). Social advertising promoting recycling is one of the means to encourage society to reach higher levels of recycling. Usually, advertising message framing is divided into positive and negative (Li Y., Yang D., Liu Y., 2021). Positive frames also called gain frames emphasize the positive behavioral outcomes of fulfilling with the encouraged behavior, while negative frames also called loss frames stress the adverse behavioral outcomes of nonfulfillment with the encouraged behavior (Isa N. M. et al., 2017). If the object of the advertisement is recycling, then accordingly, there can be those advertisements that highlight the positive consequences of recycling and those presenting the problems of failure to recycle (Lord K. L., Putrevu, S., 1998). The message framing effect is expressed with chosen advertising appeal. Advertising appeals can be broadly categorized into rational and emotional ones (Kim C., Jeon H. G., Lee K. C., 2020). Emotional appeals used in advertising can be further classified into positive (joy, pride, love, etc.) and negative (fear, shame, sadness, etc.) based on what emotion is being tried to stir up with the advertising (Grigaliunaite V., Pileliene L., 2016). Naturally, advertisements that

<sup>1</sup> Tel.: + 370 37 327856; fax: + 370 37 327857. Email address: viktorija.grigaliunaite@vdu.lt

highlight the positive consequences of recycling may be associated with positive appeal, while advertisements presenting the problems of failure to recycle may be associated with the negative appeal (but not necessarily). Moreover, content analysis of existing social advertisements supports this implication as fear and joy appeals are the ones usually used in advertisements aimed to enhance recycling levels in society. Nevertheless, most research works (Isa N. M. et al., 2017; Li Y., Yang D., Liu Y., 2021) are aimed to determine the impact of advertising framing on attitudes and/or behavior toward recycling, but do not concentrate on the impact of advertising appeal (and emotion that they stir up) on the attitudes and/or behavior toward recycling. Thus, it is of interest to determine whether a negative frame expressed with a negative appeal (fear) or a positive frame expressed with a positive appeal (joy) makes a bigger impact on willingness to recycle. Yet, this has rarely been studied directly. Therefore, the scientific problem solved in the article is: how does joy and fear advertising appeals impact willingness to recycle?

This paper aims to determine the impact of joy and fear advertising appeals on willingness to recycle. Three tasks were set to reach the aim of the article.

- 1) To determine and compare the implicit and explicit attitudes towards recycling advertisements with fear and joy appeals.
- 2) To determine the impact of attitude towards advertisements with fear and joy appeals on attitude toward the recycling.
- 3) To determine the impact of attitude towards advertisements with fear and joy appeals on willingness to recycle.

To reach the aim of the article, the implicit association test and questionnaire survey were provided. Descriptive statistical analysis, structural equation modelling (SEM) using partial least squares (PLS) path modelling methodology, and multi-group analysis (PLS-MGA) were applied for statistical analysis of survey data.

## **Research results and discussion**

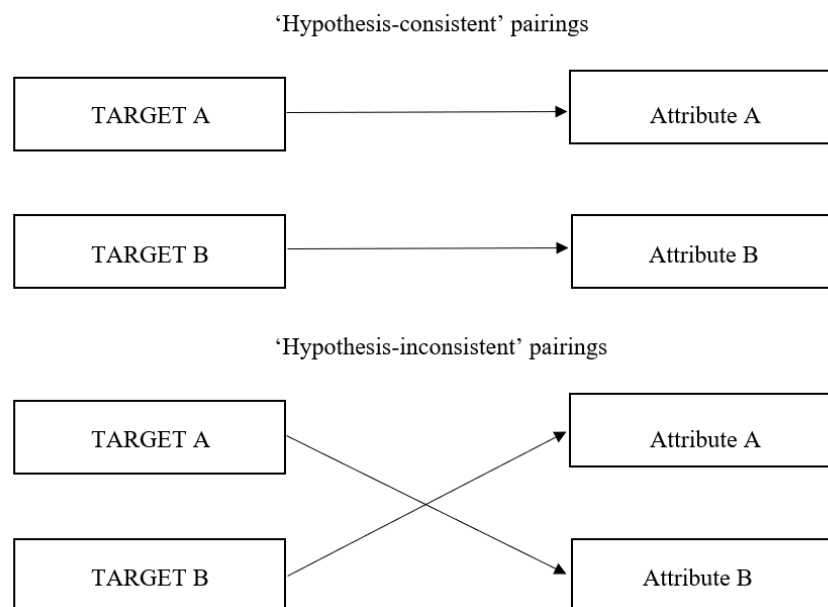
### **1. Methodology of the research**

Grigaliunaite V., Pileliene L. (2017) revealed that an advertisement's induced feelings toward it influence attitude toward advertisement, which in turn influence attitude toward the object being advertised, which in turn influence behavioral outcomes. Following this approach, research is designed to measure attitude toward advertisements (implicit and explicit) with joy and fear appeals, attitude toward recycling, and willingness to recycle. Accordingly, Implicit Association Test and questionnaire research are applied. Implicit-Association Test (IAT) is used to measure the strength of implicit associations between provided concepts. The strength of an association is measured by the standardized mean difference score (D Score) of the 'hypothesis-inconsistent' pairings and 'hypothesis-consistent' pairings; the higher the D Score the stronger is the association between the 'hypothesis-consistent' pairings, while negative D Scores suggest a stronger association between the 'hypothesis-inconsistent' pairings (Greenwald A. G., Nosek B. A., Banaji M. R., 2003). The comparison of 'hypothesis-inconsistent' and 'hypothesis-consistent' pairings is provided in Figure 1. For the analysis, Inquisit's Picture IAT by Millisecond Software was applied.

5 social advertisements with joy appeal promoting recycling (highlighting the positive consequences) and 5 social advertisements with fear appeal promoting recycling (highlighting the problems of failure to recycle) were chosen with the authors' permission and approved by marketing experts (experts were selected to be academics with a very specific field of expertise which is advertising). Target stimulus A was joy appeal advertisements, target stimulus B – fear appeal advertisements, attribute A – positive words

reflecting positive feelings, attribute B – negative words reflecting negative feelings. When doing the test, participants were instructed about the IAT procedure. They sat in front of the computer screen and had to classify the words and pictures (advertisements) by pressing one of two keyboard keys (the response keys were 'E' and 'I'). The experiment was held on 15-25 January 2022. Totally, 10 participants participated in the experiment (5 females). All their data were appropriate for the analysis. Participants were in the age group of 25-35 years.

For the questionnaire research, one out of five joy appeal advertisements promoting recycling and used for IAT and one out of five fear appeal advertisements promoting recycling and used for IAT were selected and approved by marketing experts (the same experts that approved advertisements for IAT) as the mostly characterizing joy and fear appeals.



**Source: Greenwald A. G., Nosek B. A., Banaji M. R., 2003**

**Fig. 1. The comparison of 'hypothesis-inconsistent' and 'hypothesis-consistent' pairings**

The questionnaire consisted of four main parts:

- Explicit attitude toward advertisement (semantic differential scale);
- Attitude toward recycling (semantic differential scale);
- Willingness to recycle (7-point Likert scale);
- Question whether respondents do recycle or not and demographic questions (nominal scale).

The questionnaire was presented on the specialized internet web page. Simple random sampling was applied. 100 appropriate answers were collected (margin of error 10%). The first 50 respondents were shown a joy appeal advertisement when filling the questionnaire, then the advertisement was changed into the one with fear appeal and the rest 50 respondents saw a fear appeal advertisement when filling the questionnaire. The questionnaire results were collected on February 2-16, 2022. After collecting the results, they were rescaled into a 0-100 points scale (for questions with semantic differential and Likert scale). Totally, 48 men and 52 women aged mostly between 18-40 years (89%) participated in the survey. 77% of respondents do not recycle, 21% do recycle and 2% of respondents sometimes recycle. MS EXCEL, IBM SPSS Statistics V.20, and SmartPLS software products were used for the statistical analysis of the questionnaire research results.

## 2. Research results

Results of IAT are presented below in Table 1. As it is seen, all D-score results are positive, allowing us to accept 'hypothesis-consistent' (target A with attribute A and target B with attribute B). This means that all the participants have an automatic preference for joy appeal advertisements when compared to fear appeal advertisements. Latter preference is strong for nine out of ten participants. Hence, the implication could be made that unconsciously seeing a joyful, positive future is preferred to seeing a negative, threatened future.

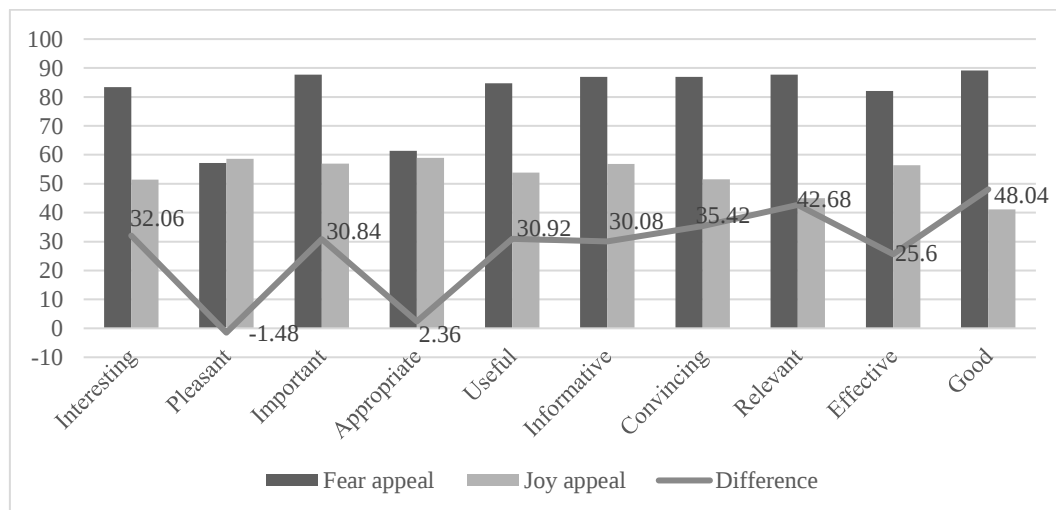
Table 1

**Results of implicit association test**

| No  | D-score | Preference                                                |
|-----|---------|-----------------------------------------------------------|
| 1.  | 0.65    | Strong automatic preference for joy appeal advertisements |
| 2.  | 0.72    | Strong automatic preference for joy appeal advertisements |
| 3.  | 1.59    | Strong automatic preference for joy appeal advertisements |
| 4.  | 0.95    | Strong automatic preference for joy appeal advertisements |
| 5.  | 0.87    | Strong automatic preference for joy appeal advertisements |
| 6.  | 1.11    | Strong automatic preference for joy appeal advertisements |
| 7.  | 0.05    | Little automatic preference for joy appeal advertisements |
| 8.  | 1.33    | Strong automatic preference for joy appeal advertisements |
| 9.  | 1.09    | Strong automatic preference for joy appeal advertisements |
| 10. | 1.11    | Strong automatic preference for joy appeal advertisements |

Source: authors' calculations

A comparison of explicit attitudes toward joy and fear appeal advertisements is provided in Figure 2.



Source: authors' calculations

**Fig. 2. Comparison of explicit attitude toward joy and fear appeal advertisements**

As it can be seen, fear appeal advertisement seems more interesting, important, useful, informative, convincing, relevant, effective, and good when compared to joy appeal advertisement. Joy appeal advertisement seems a little more pleasant, while fear appeal advertisement seems a little bit more appropriate, but the difference is very small. As it can be seen in Table 2, the difference in the attitude toward joy and fear appeal advertisements is statistically significant regarding adjectives: interesting,

important, useful, informative, convincing, relevant, effective, and good, while the difference is statistically non-significant regarding adjectives pleasant and appropriate. Hence, joy and fear appeal advertisements seem similarly appropriate and pleasant, while fear appeal advertisement seems more interesting, important, useful, informative, convincing, relevant, effective, and good.

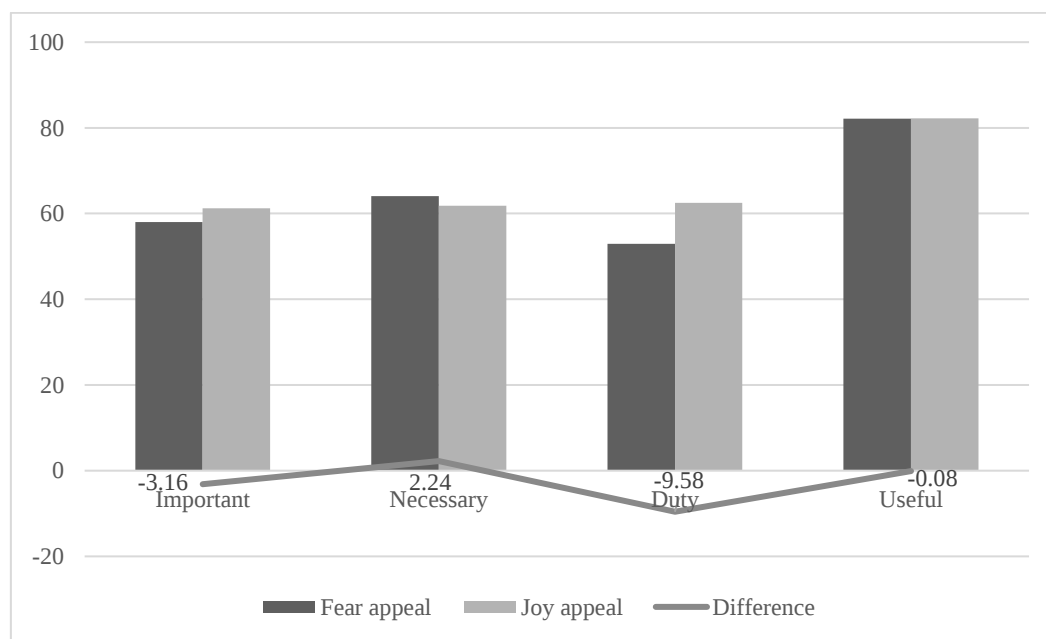
Table 2

**Results of Mann-Whitney test for comparing attitude toward joy and fear appeal advertisements**

| Criteria       | Interesting | Pleasant | Important | Appropriate | Useful | Informative | Convincing | Relevant | Effective | Good   |
|----------------|-------------|----------|-----------|-------------|--------|-------------|------------|----------|-----------|--------|
| Mann-Whitney U | 534.0       | 1116.5   | 408.5     | 1106.5      | 499.0  | 370.5       | 362.0      | 232.5    | 175.5     | 534.0  |
| Wilcoxon W     | 1809.0      | 2391.5   | 1683.5    | 2381.5      | 1774.0 | 1645.5      | 1637.0     | 1507.5   | 1450.5    | 1809.0 |
| Z              | -4.941      | -.921    | -5.806    | -.990       | -5.182 | -6.069      | -6.127     | -7.020   | -7.413    | -4.941 |
| p-value        | 0.000*      | 0.357    | 0.000*    | 0.322       | 0.000* | 0.000*      | 0.000*     | 0.000*   | 0.000*    | 0.000* |

Source: authors' calculations

A comparison of attitude toward recycling by joy and fear appeal advertisements is provided in Figure 3.



Source: authors' calculations

**Fig. 3. Comparison of attitude toward recycling by joy and fear appeal advertisements**

As it can be seen, those who saw the fear appeal advertisement think recycling is more necessary than those who saw the joy appeal advertisement, but those who saw joy appeal advertisement think recycling is more important and that recycling is a bigger duty than those who saw fear appeal advertisement. The opinion that recycling is useful does not differ for those who saw fear and for those who saw joy appeal advertisements. Nevertheless, as it is shown in Table 3, the differences in the attitude toward recycling of those who saw fear appeal advertisement and of those who saw joy appeal advertisement are statistically non-significant. Thus, it could be stated that attitude toward recycling is the same regardless of which advertisement (joy appeal or fear appeal) is seen.

Table 3

**Results of Mann-Whitney test for comparing attitude toward recycling**

| Criteria       | Important | Necessary | Duty   | Useful |
|----------------|-----------|-----------|--------|--------|
| Mann-Whitney U | 1170.0    | 1095.5    | 1178.0 | 1214.5 |
| Wilcoxon W     | 2445.0    | 2370.5    | 2453.0 | 2489.5 |
| Z              | -0.552    | -1.066    | -0.497 | -0.245 |
| p-value        | 0.581     | 0.287     | 0.619  | 0.806  |

**Source: authors' calculations**

The average evaluation of willingness to recycle of those who saw fear appeal advertisement is 50.66, while those who saw joy appeal advertisement – 57.56. But the difference in willingness to recycle by joy and fear appeal advertisements is statistically not significant (Mann Whitney U test=1248.500; Z=0.010; p-value=0.992).

Structural equations representing the analysed model are as follow (analysed in general and in the case of each different appeal advertisement):

- 1) *Attitude toward recycling* =  $\beta_{20} + \beta_{21}\text{Attitude toward advertisement} + \zeta_2$  ;
- 2) *Willingness to recycle* =  $\beta_{30} + \beta_{31}\text{Attitude toward advertisement} + \beta_{32}\text{Attitude toward recycling} + \zeta_3$ .

First, the evaluation of the reflective measurement model is applied. To reach individual indicator reliability, two outer loadings for attitude toward the advertisement that are lower than 0.7 are eliminated ("appropriate" and "pleasant"). All the rest outer loadings are above the threshold value of 0.7 and statistically significant, thus reliable. In discriminant validity assessment, all manifest variables' loadings of their corresponding latent variables are higher than its' cross-loadings and based on Fornell-Larcker criterion values discriminant validity is established. For the evaluation of internal consistency, measures of Cronbach's Alpha and composite reliability are applied. As it can be seen in Table 4, the values of the latter measures are above the threshold value of 0.7, hence internal consistency is approved.

Table 4

**Measures of Cronbach's Alpha, composite reliability, average variance extracted, and coefficient of determination**

| Variable                      | Cronbach's Alpha | Composite reliability | Average variance extracted | Coefficient of determination |
|-------------------------------|------------------|-----------------------|----------------------------|------------------------------|
| Attitude toward advertisement | 0.981            | 0.983                 | 0.865                      | -                            |
| Attitude toward recycling     | 0.939            | 0.957                 | 0.849                      | 0.161                        |
| Willingness to recycle        | -                | -                     | -                          | 0.907                        |

**Source: authors' calculations**

The values of average variance extracted are above the threshold value of 0.5, revealing that convergent validity is established. Second, for the evaluation of the structural model variance inflation factor and coefficients of determination are assessed. The variance inflation factor is above the threshold value of 5 for predictor variables, thus signifying no problems of multicollinearity. Coefficients of determination are

above 16% for "attitude toward recycling". Hence the percent of explained variance is quite low, nevertheless, bearing in mind that only one variable predicting "attitude toward recycling" is analysed, while this specific phenomenon of consumer behavior is very complex, hence the percent of explained variance is acceptable by the aim of the research. Coefficients of determination are above 90% for "willingness to recycle", which is substantial.

Analysing path coefficients and total effects at the general model, it can be seen that attitude toward advertisement has a direct positive statistically significant influence on the attitude toward recycling. Attitude toward recycling has a direct positive statistically significant influence on the willingness to recycle as well. Nevertheless, the direct influence of the attitude toward advertisement on the willingness to recycle is statistically non-significant, while the total influence of the attitude toward advertisement on the willingness to recycle is positive and statistically significant, meaning that attitude toward advertisement influences willingness to recycle indirectly by the mediation of attitude toward recycling (Table 5).

Table 5

**Path coefficients and total effects at the general model**

| Variables                                                  | Path coefficient | p-value | Total effect | p-value |
|------------------------------------------------------------|------------------|---------|--------------|---------|
| Attitude toward advertisement -> Attitude toward recycling | 0.401            | 0.000*  | 0.401        | 0.000*  |
| Attitude toward advertisement -> Willingness to recycle    | -0.043           | 0.203   | 0.346        | 0.000*  |
| Attitude toward recycling -> Willingness to recycle        | 0.969            | 0.000*  | 0.969        | 0.000*  |

**Source: authors' calculations**

Path coefficients and total effects of models by advertisements are provided in Table 6. As it can be seen, regarding fear appeal advertisement the only statistically significant influence is the influence of attitude toward recycling on the willingness to recycle.

Table 6

**Path coefficients and total effects at models by advertisements**

| Variables                                                  | Fear appeal advertisement |         |              |         | Joy appeal advertisement |         |              |         |
|------------------------------------------------------------|---------------------------|---------|--------------|---------|--------------------------|---------|--------------|---------|
|                                                            | Path coefficient          | p-value | Total effect | p-value | Path coefficient         | p-value | Total effect | p-value |
| Attitude toward advertisement -> Attitude toward recycling | -0.303                    | 0.223   | -0.303       | 0.223   | 0.923                    | 0.000*  | 0.923        | 0.000*  |
| Attitude toward advertisement -> Willingness to recycle    | -0.069                    | 0.397   | -0.351       | 0.210   | 0.465                    | 0.000*  | 0.944        | 0.000*  |
| Attitude toward recycling -> Willingness to recycle        | 0.931                     | 0.000*  | 0.931        | 0.000*  | 0.519                    | 0.000*  | 0.519        | 0.000*  |

**Source: authors' calculations**

Neither the influence of attitude toward the advertisement on attitude toward recycling nor attitude toward the advertisement influence on willingness to recycle are statistically significant (direct and total). However, regarding joy appeal advertisement all direct and total influences are statistically significant. Attitude toward advertisement has a substantial positive direct statistically significant influence on attitude

toward recycling; attitude toward advertisement also has a positive direct and indirect (mediated by attitude toward recycling) statistically significant influence on willingness to recycle; attitude toward recycling has a positive direct statistically significant influence on willingness to recycle.

All the differences between path coefficients and total effects between fear and joy appeal advertisements are statistically significant.

Thus, it can be stated that joy appeal advertisement has a bigger impact on attitude toward recycling and willingness to recycle when compared to fear appeal advertisement. This substantiates the results of IAT that revealed that unconsciously seeing a joyful, positive future is preferred to seeing a negative, threatened future, even though consciously fear appeal advertisement is evaluated as more interesting, important, useful, informative, convincing, relevant, effective, and good. Hence, seeing a fear appeal advertisement for recycling is more interesting, but implication can be made that a bigger impact on willingness to act is made by joy appeal advertisement which unconsciously is preferred.

These results are in alignment with the studies (Isa N. M. et al., 2017) stating that positive frames emphasizing the positive behavioral outcomes are more likely to be effective in the case of recycling. This research is adding up to the field by revealing that not only positive framing but also positive appeal (combined with positive framing) makes a better chance to impact attitude and positive behavioral outcomes toward recycling.

The limitation of this research is the relatively small sample size. Thus, for future research, the sample size can be enlarged and a wider emotional appeal range can be analysed.

### **Conclusions, proposals, recommendations**

- 1) Choosing the right advertising elements, including advertising appeal, can be crucial when seeking to influence behavioral outcomes regarding recycling. This research allows determining that implicit attitude or automatic preference is for joy appeal advertisements when compared to fear appeal advertisements about recycling. It could be stated that unconsciously people may be seeking a positive future, thus accordingly seeing a joyful, positive future is preferred to seeing a negative, threatened one.
- 2) Consciously fear appeal advertisements are seen as more interesting and effective most likely because they seem more emotional than joy appeal advertisements. Nevertheless, attitude toward recycling and willingness to recycle do not differ for those who see joy appeal advertisements and for those who see fear appeal advertisements. The implication can be made that thinking that fear appeal advertisement is more effective does not convert to actions, it is just a fast-emotional response to very emotional negative appeal advertising.
- 3) The analysis of the research results revealed that regarding fear appeal advertisement the only significant influence is the influence of attitude toward recycling on the willingness to recycle. Neither the influence of attitude toward the advertisement on attitude toward recycling nor attitude toward the advertisement influence on willingness to recycle is significant. However, regarding joy appeal advertisement, attitude toward advertisement has a substantial influence on attitude toward recycling; attitude toward advertisement also influences willingness to recycle; attitude toward recycling influences willingness to recycle. Thus, joy appeal advertisement has a bigger impact on attitude toward recycling and willingness to recycle when compared to fear appeal advertisement. The fear appeal advertisement for recycling seems more interesting, but the implication can be made that a bigger impact on the attitude toward recycling and willingness to act is made by joy appeal advertisement which is preferred unconsciously.

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