

## ROMANIAN RESEARCHES REGARDING THE ANIME CULTURE'S EMARKET PRESENCE IN ROMANIA. RETROSPECTIVE OVERVIEW

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**Abstract:** *The Japanese animation-the anime, has expanded in the entire world, including Europe and our country. As the communications and the Internet developed, the contact between the public and the anime culture reaches new cultural dimensions, with aid of eMarketing.*

*We considered very important to compare the results of two online surveys, in these virtual spaces, in which the Romanian anime fans are interacting, to make a trend evolution of the potential buyers for the related products of this culture, who's presence as cultural phenomenon in Romania, we have several times analysed*

**Keywords:** *anime, trend, eMarketing, evolution, information theory*

### 1. Introduction

Studying the existence of the anime culture (Cazacu, 2016a, 2017a, 2017b, 2017c) and the evolution of the anime derivatives market (Cazacu, 2016b, 2016c), including eMarketing, we have developed a research model, for the validation of which a **test-based analysis** was made, consisting of **two surveys**, in the form of the **online** inquiry, by **distributing from a website**. The instrument used to make the surveys was the **questionnaire**.

For the first survey (Cazacu, 2016c), which lasted 8 days, was applied **the non-return probability sampling** ( $p$  = probability of selection,  $p \neq 0$ ), meaning that each respondent completed the questionnaire and subsequently came out of the sampling frame, without being able to return to the answers. It was allowed to maximize the product " $p \cdot q$ " to ensure the maximum number of components in the sample ( $e=0,047 \cong 0,05$ ): **n=422** respondents.(certainty of **95%**)

The second survey (Cazacu, 2018a), over 48 hours, intended to check the results obtained in the first one. An assessment of the **sampling frame** was carried out, using the official data quoted by the specialists for verification in order to determine the size of the **representative sample** (Krejcie și Morgan, 1970). The actual number of respondents was **N=268**.

I have used the official notations: **BE** = the sampling base, **N** = the number of the investigated population, **ga** = the degree of guarantee = 95%, **s** = the sampling index =  $0,297 \cong 0,3 = 268/900$ , assuming that **BE** = 900, maximum of the active users at a time, who are present on anime and entertainment discussion groups.

This can be verified because: there are currently 66 discussion groups, about 60 active and 10% being permanently online. These groups have variable sizes, from 25 to 2000 members, with the exception of the two large recognized groups: "*Anime is my world and your world*", with about 9,000 members, respectively "*Anime Romania*" with 20000 registered members. We appreciated a total of about 100,000 fans, members of these groups, of which at least 10% are active at each moment, so a number of **N** = 900 members permanently present on the discussion groups. The relationship between **BE** and the size of the sample, according to the official data (Cătoi, 2009, p. 498), in our case, is as follows:

BE	N	N medium/sample
850 900	265 269	267

**Table 1.** The representative sample

On the other hand, if the size of the representative sample were pre-calculated, we would appreciate, taking into account the sample index ( $0,297 > 0,05$ ), that the corrected sample size would have had the maximum value:

$$n_c = \frac{p * q}{\frac{e^2}{z^2} + \frac{p * q}{N}} = \frac{0,25}{\frac{0,05^2}{1,96^2} + \frac{0,25}{900}} = \frac{0,25}{0,00065 + 0,00027} \cong 272 \quad (2)$$

therefore, the sample of the 268 respondents is representative for **BE**, with a lower error margin than we expected ( $e=0,05$ ):  $268/272 = 0,98 > 0,95$  namely the error  $e=0,02 < 0,05$ .

The questions were mostly closed. The questionnaires started with questions regarding the familiarity of the respondents with the anime, they continued with those concerning the way of perception, the need to purchase and use anime products, ending with the description of the segment of respondents, in terms of age, biological type, life, level of education, etc.

The data analysis used tools specific to MsExcel and SPSS (Cazacu, 2016d, 2018a). In order to characterize the variation, we used indicators such as *frequency distribution* and *percentages*, *standard deviation* for data span, *frequency histogram*, statistical descriptors such as the *Skewness coefficient*, the *Kurtosis coefficient*, and for the central trend assessment, we have calculated the mode, the media or the median, depending upon the measurement scale. The data were further subjected to an econometric analysis (Cazacu, 2017b), referring to the results of the first survey, and completed by the information theory (Cazacu, 2018b) by measuring the influences and the interdependencies between the influence factors in the decision-making process.

## 2. Data used (survey 1, survey 2, OTAKU, gender manifestations: NIJIKON)

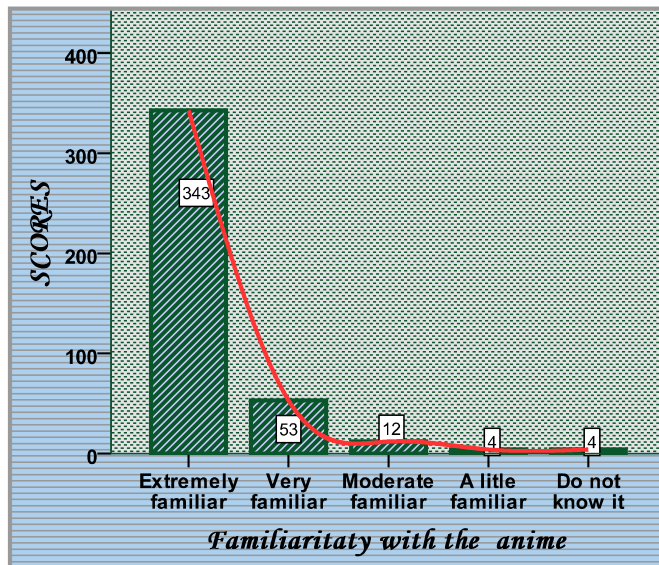
### 2.1 Data provided by the online surveys

The data were provided by the answers obtained in the two questionnaires. We have selected a few of these results for two reasons: the first was the preference for this kind of animation, for the derivative products, gender events, and the second reason was to characterize the target group, both in order to identify the current level of the eMarketing of this subculture products, and justify the encouragement for the gender market in Romania.

a) Out of the 12 responses obtained from the 422 respondents, in the first questionnaire, we mention:

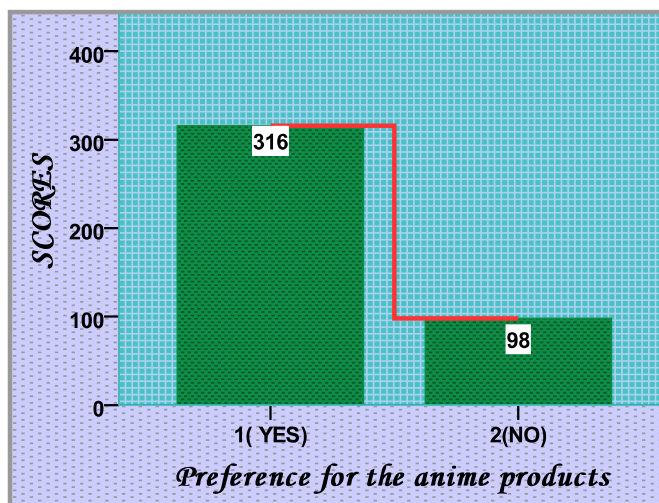
#### ► *The familiarity with the anime notion*

Scale segments: (extremely familiar)5: 4: 3: 2: 1(I do not know); average appreciation:  $1939/416 = 4,66 > 4$  (favorable image) (Figure 1)



**Figure 1.** Familiarity with the anime culture(Survey 1, CCI4)

► **The anime-derived products.** In this item, a nominal dichotomous scale was used: 1=preferred anime-derived products; 2=do not prefer these products. The result is predominantly in the favor of the anime derivatives. Preference is given to the affirmative answers: 316 vs. 98. The media calculation gives us the next result:  $2 * 316 + 1 * 98 = 1,76 > 1,5$  (Figure 2)



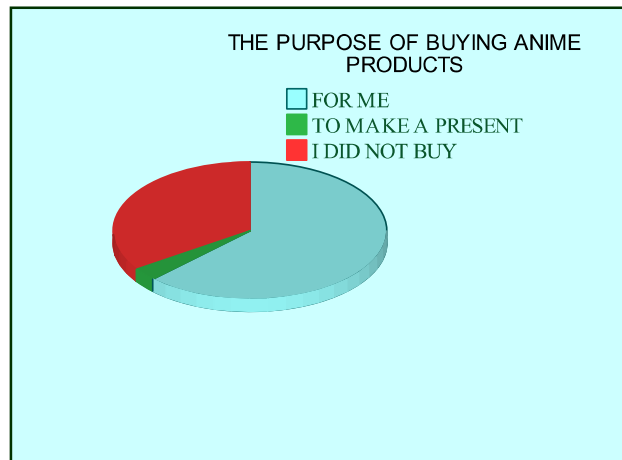
**Figure 2.** Preference for the anime products (Survey 1, CCI4)

b) The results obtained from the first survey are confirmed and completed by the results of the second survey. From the responses to the 14 questions of the questionnaire, to which 268 respondents registered in 48 hours, we mention:

► **For what purpose did you buy the goods mentioned in the previous question (anime derivatives)**

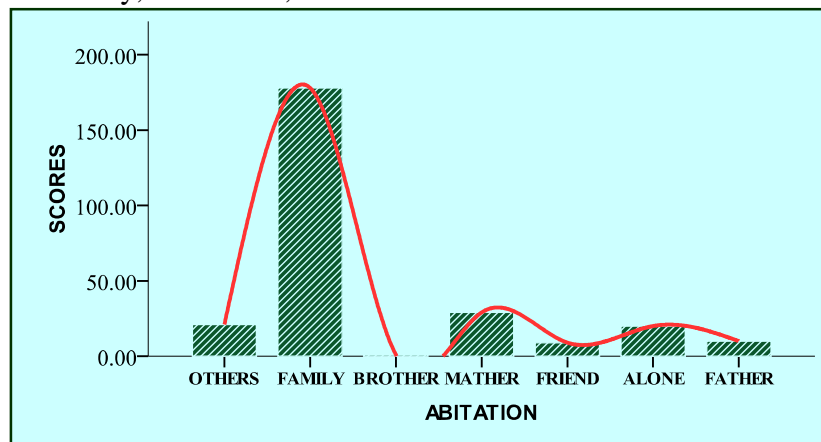
The resulting predominant motivation was "for personal use" in the proportion of **62,5%**. (Figure 3)

► **How do you live?** The score distribution is asymmetric, the highest is the family score, the main reason being the age, the level of education, etc. (Figure 4)



**Figure 3.** Preference for the anime products (Survey 2, JRLS 13)

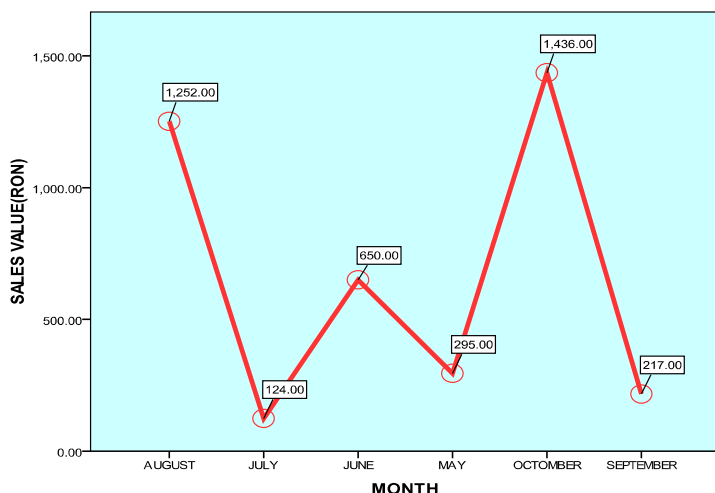
Most of respondents are young people, aged between 14 and 25-30 years, at high school, university, or masters, who live with their families.



**Figure 4.** Characteristics of the respondents

## 2.2 Data provided by sales of OTAKU SHOP (Figure 5)

As an example of the interest shown by the Romanian consumer towards the anime culture products, it has been studied the sales of a Constanta company, dealing with the marketing of these products within a certain time frame, namely over a six-month period. The data gathered showed that the most profitable months for the firm were August and October.



**Figure 5.** Sales of Otaku Shop(Cazacu, 2016b)

### 2.3 Data provided berom gender events - NIJIKON ROMANIA

We present some specific informations relative to each year, starting with the first Nijikon convention in Romania(2007), until 2015, regarding: the total number of participants, the total number of entrepreneurs of the various products put up for sale, and the leased spaces for these events

In addition, the participants, mostly young, opted for the continuation of such events in Romania, which gives the opportunity to meet and evolve (the cosplay phenomenon) to Romanian fans and not only: were invited and attended many representatives from England, America, etc.

	2007	2008	2009	2010	2011	2012	2013	2014	2015
<b>VISITORS</b>	1500	2300	2700	3000	3100	3000	3500	3000	2700
<b>SELLERS</b>	16	20	22	24	26	24	26	20	24
<b>RENTED SURFACE</b>	400	1200	1200	1200	1200	1200	3000	2700	3600

**Table. 2** Official informations relative to the NIJIKON Convention (Cazacu, 2016b)

### 2. Tools used in data series processing (SPSS, econometrics, information theory)

The processing of the obtained data was done in different ways: using SPSS tools and methods, using specific formulas and methods of econometrics, and finally, the informational statistics (Mihăiță, 2016) with its characteristic formulas and methods, the last of them in order to evaluate the mutual influences of the factors , as well as their impact on the anime fan's decision-making process.

#### a) Quantitative analysis using SPSS

The results of both surveys led to **similar conclusions**. It is about establishing the *central trend*, highlighting the modal group, for example, in the first survey, calculating the number of respondents who consider the "*extremely familiar*" anime, that is: 82,45% of the answers, 343 respondents of 422 participants. Similarly, in the second survey, the *familiarity with*

*anime*, that is the information among media entertainment consumers about this type of culture, again in our attention, provided us a result of 97% of respondents, who form the modal group, the central trend indicator, in case.

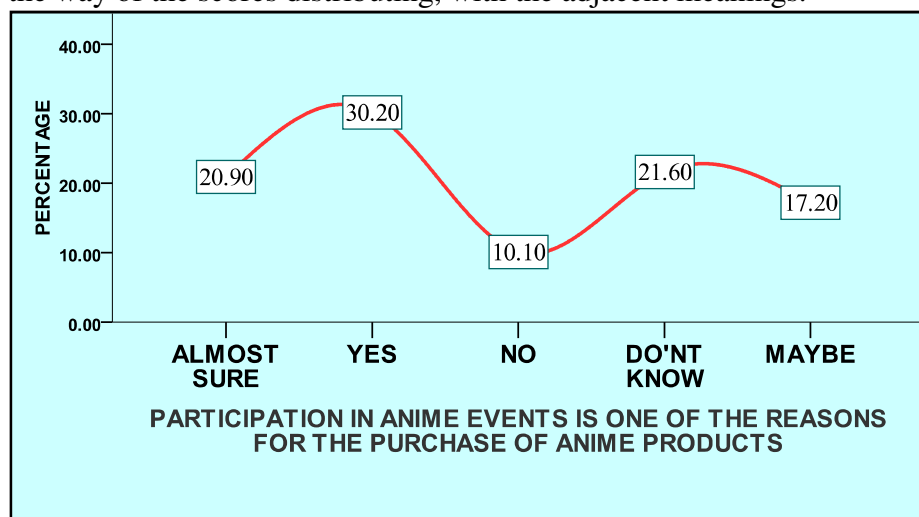
Regarding the adjectives attributed to the anime design, the characterization of the variation, according to the level of measurement made at this item using the nominal scale, led to the calculation of some indicators such as the frequency distribution and the percentages. The majority of the scores are above 100, so we can say that the positive appreciation prevails, creating a favorable image. The average score is 220,71 and is somewhere between the positions corresponding to the adjectives: "educational" and "wonderful". The adjective "interesting" has a maximum score of 368, representing also the *modal* value, and the statistical significance of the difference between groups;  $\chi^2$ - test demonstrates an uniform increase to that score, with two insignificant numerical exceptions, associated with the adjectives "weak" and "inferior".

Similarly, in the second survey, regarding the anime fan's *perception*, there were 1.726 responses, the participants having the possibility, as in the first survey, of selecting multiple features. The maximum values recorded are favorable adjectives: the *median* is 134, being positioned between the "cultural" and the "smart" adjectives in the range [128; 140].

The *average score* is 123,3 and is positioned between the "cultural" and "wonderful" adjectives. We note that, although the circumstances are different, the adjective "wonderful" is positively highlighted and well represented in both cases.

The analysis continues with the results obtained for: the *importance of subtitling* (63,4% of the respondents, in the second survey, prefer the subtitled anime), the *preference for the derived products* of the anime culture (63,1% of the respondents in the second survey, bought such products) the *purpose of the acquisition* (62,5% in the second survey and 75% in the first, purchased anime products *a for personal use*), the *influence of participation in gender events* on the purchasing decision (68,3% of participants are interested in buying as a result of participating to an anime event). The score distribution is a normal symmetrical shape curve, with 99% accuracy. (Figure 6) For a better resolution on the result, we also applied the semantic difference method with the scale: **yes**= 5: 4: 3: 2: 1=**no**. The associated calculation is as follows:  $5 * 81 + 4 * 56 + 46 * 3 + 58 * 2 + 27 * 1 \cong 3,4 > 3$ .

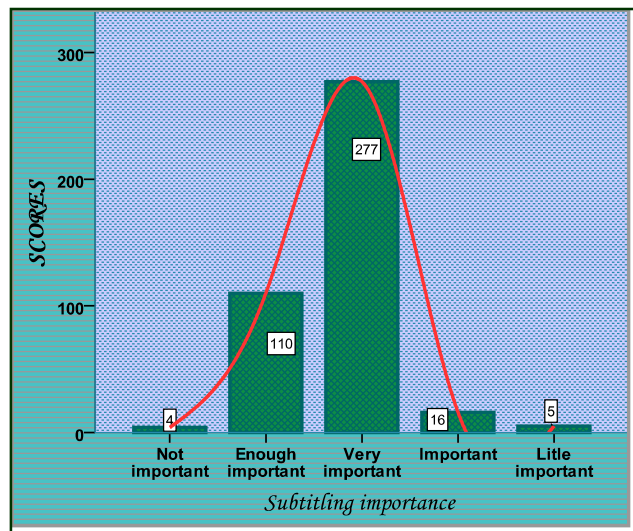
For the results of each item, in both surveys, was made the frequency histogram, using the statistical indicators corresponding to the form and the vaulting, in order to better understand the way of the scores distributing, with the adjacent meanings.



**Figure 6.** Acquisition of anime products as a result of participation in gender events (Survey 2)



The results of the subtitling preferences show the respondents' *attitude*, which considers the subtitling as very important: 97,8% in the first survey (Figure 7) and 79,8% in favor of subtitling (cumulative) in the second survey. Romanian is the preferred language (40.3%), which is the main trend of the results.



**Figure 7.** Subtitling importance (Survey 1)

The occupational field and the level of education complete the image obtained in the first survey, on the target group, in addition to gender and age characteristics. 74.6% of respondents do not work, being students or pupils (86.5%), between 14 and 25 years (97%)

#### b) Transforming data into informations

	Anime forum participants	Anime events participants / anime site users (A)	ANIME PRODUCTS		
			subtitled animes (b <sub>0</sub> )	anime derived products (b <sub>1</sub> )	TOTAL
1	Less than 25 years old (c <sub>0</sub> )	vizit	187	87	274
		purchase/prefer	178	281	459
	Total c <sub>0</sub>		365	368	733
	More than 25 years old (c <sub>1</sub> )	vizit	23	11	34
		purchase/prefer	22	35	57
	Total c <sub>1</sub>		45	46	91
1 TOTAL =824			410	414	824

**Table 2.** Results (author's research) (Survey 1)

In order to study the influence of factors on the observed data (Cazacu, 2017b), the specific method of the experiment 2<sup>3</sup> - the two-level factors was used, by creating the contingency table with three inputs. For this purpose, we selected three dichotomic questions about subtitling preference, preference for purchasing anime products, and age category relative to the 25 years threshold. The dependent variable **A** represents the respondent's *preference* for the anime products materialized in purchasing or viewing them, and the independent factor

**B**(the stimulus) are these products, divided in two categories, *subtitled* or not, and anime derived *products*. The second independent factor is the age of the respondent, represented by the variable **C**, which segments the set of responses according to the considered threshold(25 years). The triple input table includes the alternatives of variables **A**, **B**, **C** (Table 2). A repetition was simulated, using the same database and fill in the arithmetic "signs" that highlight interactions.

1	a	b	c	ab	ac	bc	abc	TOTALS	
+	+	+	+	+	+	+	+		
187	178	87	23	281	22	11	35	824	<b>T<sub>1</sub></b>
-	+	-	-	+	+	-	+		
187	178	87	23	281	22	11	35	208	<b>T<sub>a</sub></b>
-	-	+	-	+	-	+	+	4	<b>T<sub>b</sub></b>
-	-	-	+	-	+	+	+	-642	<b>T<sub>c</sub></b>
+	-	-	+	+	-	-	+	228	<b>T<sub>ab</sub></b>
+	-	+	-	-	+	-	+	-162	<b>T<sub>ac</sub></b>
+	+	-	-	-	-	+	+	-2	<b>T<sub>bc</sub></b>
-	+	+	+	-	-	-	+	-178	<b>T<sub>abc</sub></b>

**Table 3.** Table of interferences between variables

Thus, we can see how factor **C** (age) influences four subtotals, namely, **t<sub>c</sub>**, **t<sub>ac</sub>**, **t<sub>bc</sub>**, **t<sub>abc</sub>**, the effect of **C** being obtained by algebraic sum of the contributions, meaning that the contributions of the influenced factors will be positive, and the contributions of the others, unaffected by it, will be negative. The other environmental factors are represented by **T<sub>1</sub>** (Table 3). Comparing the calculated values of Fisher coefficients with the corresponding values (**F<sub>tab</sub>**), and considering the admissible error (5%), it is observed that, in most cases, significant differences were obtained, both at the level of the factors and their combinations, all values being greater than the tabled Fisher coefficient. The first-order **AB** interaction is positive and **F<sub>ab</sub>** = 8271,4 > **F<sub>ab</sub>** = 5,59, so this interaction is system-critical, which leads to the conclusion: **A**→ **B**, so **A** influences **B**, as a result, anime products are interested regardless of age; **B**→**A**, so buyers of any age are buying derivatives, although in different proportions, young people under 25 are preponderant.

### c) Data analysis using information statistics

The dimensions used in this analysis are: **information energy** and **information entropy** (Cazacu, 2018b), which characterize the variables influence for the decision-making process of the entertainment consumer.

X variable (age)	Y variable (anime products)		TOTAL
	Y <sub>1</sub> = subtitled	Y <sub>2</sub> =derived	
X <sub>1</sub> (age < 25 years)	365	368	733
X <sub>2</sub> (age > 25 years)	45	46	91
TOTAL	410	414	824

**Table 5.** Summarized results (Survey 1)

Thus, the segmentation variable will be considered **X** = "age", with two levels compared to the 25 years threshold, positioned horizontally, and the variables of interest, positioned vertically, which we analyze, will be **Y** = "anime products" ie the *preference for the subtitled products* (**Y<sub>1</sub>**) and the *preference for derived products* of this animation (**Y<sub>2</sub>**), all expressed in



Table 5, by the absolute frequencies of the recorded responses, during the study. The information transfer can be appreciated either by using the information energy ( $E$ ) or the informational entropy ( $H$ ). We notice the inverse proportionality between the two entities: the information energy and the informational entropy. For example, for the characterization of the states of the variable  $Y$  and of the states  $Y_1$  and  $Y_2$  respectively, we have evaluated the amounts of information associated with each of them, calculated in bits, which led us to the "information distribution"  $DI(Y)$ :

$$I(Y_i) = -\log_2 p(Y_i) \Rightarrow \begin{aligned} I(Y_1) &= -\log_2 \frac{410}{824} = 1,007 \\ I(Y_2) &= -\log_2 \frac{414}{824} = 0,993 \end{aligned} \quad DI(X): \begin{pmatrix} I(Y_1) & I(Y_2) \\ p(Y_1) & p(Y_2) \end{pmatrix}$$

with average:

$$(3) \quad \overline{DI(Y)} = M(DI(Y)) = \sum_{j=1}^2 I(Y_j) \cdot p(Y_j) = -\sum_{j=1}^2 p(Y_j) \cdot \log_2 p(Y_j) = \\ = H(Y) = 0,4975 \cdot 1,007 + 0,5024 \cdot 0,993 = 0,501 + 0,499 = 1$$

which represents the "informational entropy" of the  $Y$  variable, or the degree of "disorder" or "disorganization" of the studied variable.

The characterization of the variable from the information point of view, was equally achieved by means of another dimension, namely: "informational energy Onicescu", which formula, for the  $Y$  variable is:

$$(4) \quad E(Y) = \sum_{i=1}^m p^2(Y_i) = \sum_{i=1}^2 p^2(Y_i) = p^2(Y_1) + p^2(Y_2) = \left(\frac{410}{824}\right)^2 + \left(\frac{414}{824}\right)^2 = 0,500011 \approx 0,5$$

We have studied the influences of the sizes involved in the research results, both with each other and about their decisional importance for the marketing of the anime culture products. By calculating the entropy of each variable under the influence of the other's alternatives, it was found that if the result is large, the transmitted energy is small and the variable is not significant for the decision, and for each other. În mod analog, am analizat și rezultatele celui de-al doilea sondaj:

X variable (age)	Y variable (anime products)		TOTAL
	$Y_1$ =purchase	$Y_2$ =knowing anime	
$X_1 \leq 26$ years	$260 \cdot 63.1\% = 164$	$260 \cdot 97\% = 252$	416
$X_2 > 26$ years	$8 \cdot 63.1\% = 5$	$8 \cdot 97\% = 8$	13
TOTAL	169	260	429

Table 6. Summarized results (Survey 2)

The segmentation variable will be considered  $X$ = the age, with two levels compared to the limit of 26 years, and the variables of interest  $Y$ =the anime products, the **preference for the derived products**( $Y_1$ ), respectively the **familiarity** with its style of animation( $Y_2$ ), expressed by the absolute frequencies of the recorded replies during the survey. The amount of information due to the alternative  $Y_i$  of the variable  $Y$ , will be the following:

$$I(Y_i) = -\log_2 p(Y_i) \Rightarrow \begin{aligned} I(Y_1) &= -\log_2 \frac{169}{429} = -\log_2 0,39 = 1,344 \\ I(Y_2) &= -\log_2 \frac{260}{429} = -\log_2 0,60 = 0,723 \end{aligned}$$

(5)

The *average* of „informational distribution” this time, is, for the same variable  $Y$ :

$$(6) \quad \overline{DI(Y)} = M(DI(Y)) = \sum_{j=1}^2 I(Y_j) \cdot p(Y_j) = -\sum_{j=1}^2 p(Y_j) \cdot \log_2 p(Y_j) = H(Y) = 0,967$$

which represents what the specialists in the field defined as the “*informational entropy*” of the variable  $Y$ , or the degree of “*disorder*”/ “*disorganization*” of the anime products variable, noted with  $H(Y)$ .

The characterization of the informational amount due to the variable  $Y$  representing the anime products, having two alternatives, realised using the “*informational energy Onicescu*”, the energy of the set is:

$$(7) \quad E(Y) = \sum_{i=1}^m p^2(Y_i) = \sum_{i=1}^2 p^2(Y_i) = p^2(Y_1) + p^2(Y_2) = \left(\frac{169}{429}\right)^2 + \left(\frac{260}{429}\right)^2 = 0,522$$

where:  $m$  = number of columns, respectively states of variable  $Y$ , its two alternatives.

Comparing the results from (3)+(4) formulas with (6)+(7) formulas, we observe the great similarity between them, even if the two alternatives of  $Y$  are not the same.

### 3. Some conclusions and their significance

- Familiarity with the notion of anime has shown the prevalence of those “*familiarized*” with this type of animation, among the consumers of mass media entertainment, in **82,45%**, in the first survey, respectively **97%**, in the second .
- The anime buyer's attitude is identified by the qualities that characterize a “*favorable attitude*”, in which the adjective “*wonderful*” prevails in both surveys. The *attitude* is completed by the importance of the subtitling, thus the localization of the anime, in the proportion of approximately **97,8%**.
- The identification of the preference for the anime related products, obtained in the carried out investigations, led to an average of affirmative answers:  $(76,3+63,1)/2=69,7\% \approx \mathbf{68\%}$ .
- The motivation for purchasing such products revealed **75%** of the “*personal use*” as the primary reason in the first survey and **62,6%** in the second.
- The decisional importance for the marketing phenomenon of the “*anime products*” and “*age*” variables, analyzed using the informational statistics, demonstrates that the first one, present in both surveys, possesses superior information energy, has influence on the system and thus, on the buyer's decision.

#### ▪ Prognosis of the trend based on the results obtained through research

Let us consider the percentage of those who buy anime products, regardless of motivation, for themselves or for other purposes, by evaluating the scores recorded in the two surveys.

Survey number	Number of anime products buyers	Buyers' percentage in total respondents	Total
1	321	78,3%	410
2	175	65,5%	267

**Table 7.** Results for potential buyers of anime products, corresponding to each survey

Taking into account the number of people permanently present on the entertainment discussion groups and making a **trend for the potential buyers of the anime products**, we have the following result:

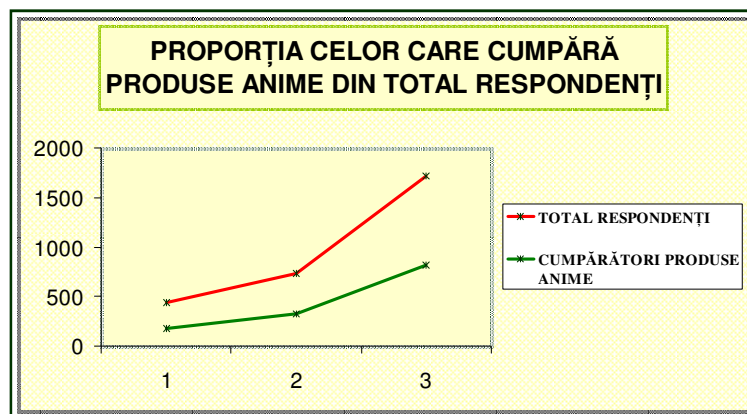
Number of anime products buyers	Buyers' percentage in total respondents	Total
821,2797203 $\approx$ 821	91%	900

**Table 8.** Trend and percentage

We applied the TREND- function using the MICROSOFT EXCEL program. In conclusion, for the totals and percentages of the buyers, registered or evaluated in the trend, we appreciate the following evolution:

Buyers' percentage in total respondents	Total
65,5%	267
78,3%	410
91%	900

**Table 9.** Trend of the potential buyers of the anime products in Romania



**Figure 8.** The trend variation of the potential buyers of the anime products

**Final conclusion (research model feedback): Identification of the need** for the anime culture related products; there is an increasing trend of buying anime products fans, relative to the number of people permanently active in the discussion groups.

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