

STUDY OF FACTORS THAT INFLUENCE THE DECISION TO BUY ANIME RELATED PRODUCTS USING A NEW METHOD OF ANALYSIS

PhD Adrian Nicolae CAZACU,
Bucharest University of Economic Studies

Abstract: The present study promotes a method of analyzing the system formed by the influences that determine the evolution of cultural trends caused by changes in the international cultural market, eMarketing of new cultural products, products entering the Romanian market, as a result of cultural events mediated by through eMarketing, using online media such as "Facebook". We will use this method to analyze the extent to which knowledge of the Japanese style of animation called "anime" and participation in "anime"-themed conventions influences the decision of the consumer of mass-media entertainment products.

Keywords: anime, influences system, survey, informational gain, eMarketing, Infocalculus

INTRODUCTION

In the current context in which the technology is playing an increasingly important role in our lives, the mass-media offer is also becoming important. Access to information, today, does not only means watching news of general interest, it acquires new dimensions such as the possibility offered to the receiver (consumer) of information to get in touch with new cultures and new markets for exotic products.

Because of this fact, the "anime" culture and the market of "anime" products had a global impact. This market started to open in Romania as well, its products making their place in the section of the products intended for entertainment.

In Romania, the market for "anime" products is in a continuous development and transformation. From small online companies and private sellers promoting their products on **facebook** and **forum** groups, this market has developed through the participation of the exhibitors of "anime" specific products at the "anime" themed conventions.

In the last years, "anime" products such as manga comics have also entered bookstores, an eloquent example in this regard being the offer of Cărturești bookstores, but also of the various online stores such as eMAG.ro, which today has over 2000 anime related products, offering the consumer in our country multiple purchasing possibilities. Developing mainly in the online environment, initially received positively, mainly by the young segment of consumers (Mihăiță&Cazacu, 2018), this market has subsequently proved attractive for any age or biological gender, offering a very diverse range of products (Mihăiță&Cazacu, 2019), addressed to all categories of consumers (with the required age specifications, etc.)

The purpose of this study is to apply the information theory in the analysis of the market for the "anime" culture products, recently in Romania, using an application called INFO-CALCULUS, starting from the case studies conducted and published by the author.

The conclusions of the research, following the analysis of the obtained data in the two case studies - online surveys conducted by the author - using the tools of Onicescu

information statistics, as well as their processing using the INFO-CALCULUS application, show that the **perception** of the "anime" products is favorable and the need for "anime" related products is present in Romania.

Due to the fact that "anime" includes in addition to the defining elements, a multitude of elements from the universal culture, such as classical music often used for the soundtrack of the "anime" series, but sometimes also as a theme, the impact of opening this market is considered beneficial, both economically and culturally, and the "anime" culture can be considered an environment for the spread of *global culture*.¹

1. DATA IN THE CONTEXT

The attitude towards this form of culture, by encouraging the market of "anime" derivatives, determining the modification of other endogenous components, including **perception**, leads to the consumer's decision to purchase, as a result, increasing the market demand, as feedback, and, implicitly, encouraging the cultural identity of the fans.

For this purpose, can be used the results of the performed studies, following the percentage involvement, as real as possible, of each of these influences. for example, the affirmative answers relative to the different analyzed influences (Cazacu,2018).

One of the surveys conducted by the author, (**January, 2018**) addressed to a heterogeneous group of 268 people, for a period of only 2 days, during the winter holidays, a group that is part of the discussion groups related to the media entertainment.

The evolution of the **perception** from the point of view of the *interesting* character of the anime, can start from the information presented by the affirmative variants of the answers received from the survey participants, resulting in the percentages presented in Table 1 and 2(Cazacu,2018)

The **attitude** related to the products derived from the "anime" culture was followed and presented in the 5th item of the questionnaire, where **63.1% (169** of the participants) answered they have bought "anime" products.

Table 1. Purchasing "anime" products **motivated** by participating in anime-themed events

ALMOST SURE	YES	MAYBE	DO NOT KNOW	NO
56	81	46	58	27
20,9%	30,2%	17,2%	21,6%	10,1%

Table 2. **Intention** to purchase "anime" products as a result of participating to the "anime" events

VERY INTERESTED	ENOUGH INTERESAT	LITTLE INTERESTED	DO NOT KNOW	I AM NOT INTERESTED
84	86	24	70	3
31,5%	32,2%	9%	26,2%	1,1%

¹ Fabienne Darling WOLF a prezentat noțiunea de „*cultură globală*” în 2014, ca fiind o cultură prezentă pe întreg mapamondul, *de la Est la Vest*, promovată prin intermediul noii *media transnațională*.

These data, along with the percentage of those who buy these products, reflect the attitude of the consumer. They are synthesized as it follows:

Table 3. Resume of the numerical data

INFLUENCES	ALTERNATIVE ANSWERS	NUMBER	PERCENT
MOTIVATION (AS A RESULT OF PARTICIPATION IN "ANIME" RELATED EVENTS)	yes	180	68%
	no	88	32%
INTENTION OF BUYING (AS A RESULT OF PARTICIPATION IN ANIME RELATED EVENTS)	yes	194	73%
	no	74	36%
KNOWLEDGE OF "ANIME"	yes	260	97%
	no	8	3%

The results are included in a specific 2^3 type experiment table, having as protagonists three factor variables, each of them with two alternatives, affirmative and negative. These three factors are: the **motivation**, as an effect of participation in "anime" themed events, the **intention** to acquire genre products, following participation in such events, or as a result, and the last but not least, the **knowledge** of "anime".

All these variables are considered by the field specialists (Veblen, 2009) "**endogenous influences**", which lead to and form the consumer's decision. From these variables, we selected the **intention** of buying as being determined (so dependent) by the other two factors. The other two influences, the **knowledge** and the **motivation**, are determinant for the **intention** of buying. The 2^3 experiment table, with two horizontal inputs (determining factors) and one vertical output (determined factor) uses for simplification some notations:

- Factor C/ variable X= **ANIME KNOWLEDGE**
- Factor A/ variable Z= **MOTIVATION** (AS RESULT OF THE ANIME EVENTS PARTICIPATION)
- Factor B/ variable Y= **BUYING INTENTION**

Table 4. Interaction of the cultural and artistic perception influences with the consumer decision

X(C)		Z(A)		Y(B)	
				NO	YES
NO	8	NO	3	1	2
		YES	5	2	3
YES	260	NO	83	3	80
		YES	177	5	172

3. RESULTS OF THE INFOCALCULUS APPLICATION (Cazacu, 2020)

Figure1. Influence of the anime knowledge and the anime events over the consumer buying intention

EXAMPLE: X(C)= ANIME KNOWLEDGE Y(B)=INTENTION OF BUYING Z(A)= MOTIVATION		INFLUENCES INTERACTIONS				Total	NOTES:	
			NOT Y (B1)	YES Y (B2)			NOT Z=Z°; NOT X=X°; NOT Y=Y°;	
X (C)	Z (A)	Y°	Y¹					
	Z°	1	2		3			
X°	Z¹	2	3		5			
	Total X°	3	5		8			
	Z°	3	80		83			
X¹	Z¹	5	172		177			
	Total X¹	8	252		260			
	TOTAL	11	257		268			

AI(Z/Y) = E(Z/Y) - E(Z)		AI= INFORMATIONAL CONTRIBUTION Δ-INFORMATIONAL GAIN				Δ(Z,X,Y) = (E(Z,X,Y)) _a - E _a (Z)	
Δ(X/Z)	Δ(Z/X)	AI(Z/X)	AI(Z/Y)	Z from X,Y	Δ(Z,X,Y)	I(X/Y¹,Z¹)-Ea(X)	I(Z/X¹,Y¹)-Ea(Z)
0%	0%	0%	0%	0%	0%	-0,28	0,00
Δ(X/Z)	Δ(Z/X)	Z from X	Z from Y	Z from X,Y	Δ(Z/X,Y)	I(Z/X° ,Y°)-Ea(Z)	I(Z/X° ,Y¹)-Ea(Z)
0,00	0,00	0,00	0,00	0,00	0,00	-0,13	-0,13
Δ(Z/Y)	Δ(Y/Z)	AI(Y/X)	AI(Y/Z)	Y from X,Z	Δ(Y/X,Z)	I(Z/X¹ ,Y°)-Ea(Z)	I(Z/X° ,Y)-Ea(Z)=
-0,02	0%	1%	0%	1%	1%	-0,13	-0,13
Δ(Z/Y)	Δ(Y/Z)	Y from X	Y from Y	Y from X,Z	Δ(Y/X,Z)	M(Ea(Z/X° ,Y))-Ea(Z)	M(Ea(Z/X¹ ,Y))-Ea(Z)
-0,02	0,00	0,01	0,00	0,01	0,01	-0,13	0,00
Δ(Y/X)	Δ(X/Y)	X from Y	AI(X/Z)	X from Y,Z	Δ(X/Y,Z)	M(Ea(Z/X ,Y¹))-Ea(Z)	I(Z/X¹ ,Y)-Ea(Z)=
1%	1%	1%	0%	1%	1%	0,00	-0,07
Δ(Y/X)	Δ(X/Y)	X from Y	Y from Z	X from Y,Z	Δ(X/Y,Z)	M(Ea(Z/X ,Y°))-Ea(Z)	M(Ea(X/Y ,Z¹))-Ea(X)
0,01	0,01	0,01	0,00	0,01	0,01	-0,13	-0,27

Source: Dates provided from the author survey, registered in Table 4

4. INTERPRETATION OF THE RESULTS

Let's explain the results, one by one. We start with:

$$AI(Y/X)=\Delta(Y/X)=0,01=1\% \tag{1}$$

The previous relation means that there is an informational contribution, also an informational gain from C to B, clearly: when someone knows "anime"(C), it is a strong chance to buy "anime" products(B). Same informational contribution is due to both A and C, that is the **knowledge** of this form of art(C/X) together with the **motivation** due to the "anime" events participation(A/Z), lead to the **intention** of buying(B/Y):

$$\Delta(Y/X,Z)=0,01=1\% \tag{2}$$

In reverse, the **knowledge** of "anime"(C/X) is growing when fans participate to the specific events(A/Z) and buy "anime" products(B/Y):

$$\Delta(X/Y,Z)=0,01=1\% \tag{3}$$

Knowledge of "anime" (C/X) also receives information from buying "anime" products(B/Y):

$$\Delta(X/Y)=0,01=1\% \tag{4}$$

The above results lead to the conclusion that the consumer's *intention/decision* is determined by the *knowledge of the "anime"* (C/X), partially *motivated* by the participation to the gender events (A/Z).

In the context of the interaction of these three factors, according to author's survey results, in Table 5, the affirmative answers percentages, obtained for each of them, were reported to the whole.

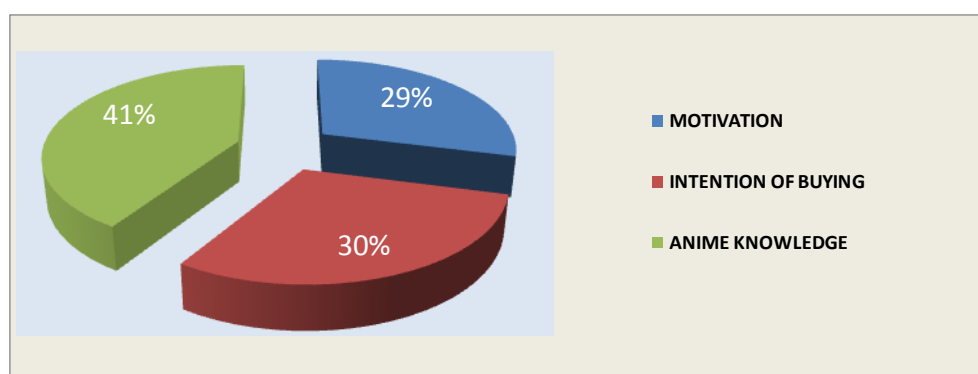
Considering the percentages obtained for each variable, through relation to the total, we obtain the shares of the components. We agreed to note:

Tabel 5 Shares of the components

MOTIVATION (AS A RESULT OF PARTICIPATION TO THE "ANIME" RELATED EVENTS) =A/Z	68
KNOWLEDGE OF "ANIME" =C/X	97
INTENTION OF BUYING(AS A RESULT OF PARTICIPATION TO "ANIME" RELATED EVENTS)=B/Y	73
TOTAL	238
MOTIVATION (AS A RESULT OF PARTICIPATION TO THE "ANIME" RELATED EVENTS) =A/Z	29%
KNOWLEDGE OF "ANIME" = C/X	41%
INTENTION OF BUYING(AS A RESULT OF PARTICIPATION TO THE "ANIME" RELATED EVENTS)=B/Y	30%
TOTAL	100%

Source: author's research

Figure 2. Percentage of influences determined by each component, related to the whole



Assuming that the system of the three interdependent factors evolves over a unit of time, we use the following mathematical model(Cazacu,2016;Cazacu,2019):

$$\dot{\mathbf{x}}(t) = a_1x_1(t) - a_2x_2(t) + a_3x_3(t) \quad (1)$$

where: $\mathbf{x}(t) = (x_1(t), x_2(t), x_3(t))$ is the "anime" state vector" of the system of the three factors, with time evolution, also we note: $a_i =$ coefficient $(x_i(t))_{i=1,2,3}$. The component coefficients represent each contribution to the whole, contributions figured in Fig. 2

$$\dot{\mathbf{x}}(t) = 29x_1(t) - 41x_2(t) + 30x_3(t) = \begin{pmatrix} 29 & 0 & 0 \\ 0 & 41 & 0 \\ 0 & 0 & 30 \end{pmatrix} \cdot \begin{pmatrix} x_1(t) \\ x_2(t) \\ x_3(t) \end{pmatrix} \quad (2)$$

completed by the answer of the system:

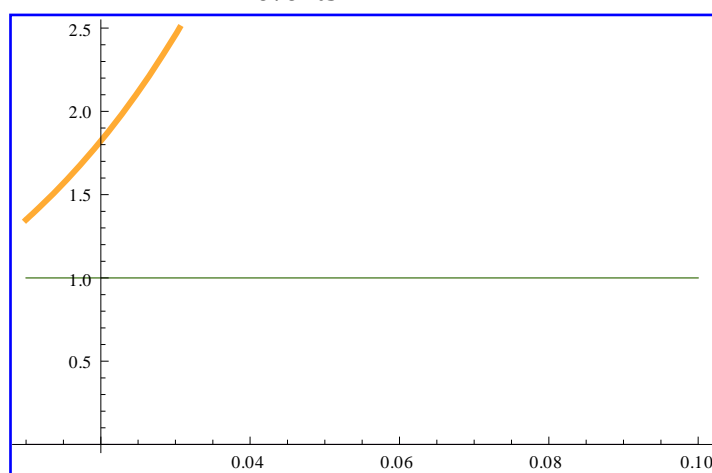
$$\mathbf{y}(t) = \begin{pmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 1 \end{pmatrix} \cdot \begin{pmatrix} x_1(t) \\ x_2(t) \\ x_3(t) \end{pmatrix} \quad (3)$$

which highlights only the third branch of the non-zero coefficient matrix, if we want to visualize the evolution of the purchase *intention* for buying "anime" products, that means we are interested in the third component of the vectorial solution, which has the \mathbf{a}_3 coefficient.

The algorithm we have used in similar contexts, when the specific conditions and constraints are checked (in this case, the square matrices coefficients of the equations are non-zero, having strictly positive real determinant) allows us to visualize the trajectory of the solution.

The graphical representation suggests the possibility of an ascendent evolution for the trend of purchasing "anime" products, resulting from the increased participation to the genre "anime" events, but also because of the great number of those who know this genre of art.

Figure 3. Evolution of the buying *intention* resulted from the participation at the "anime" events



Graphical representation using MATHEMATICA 7.0 program

CONCLUSIONS

The proposed research model proves **the possibility of applying to the results of a survey**, explaining also the way in which the coefficients can be assigned, starting from the real data.

By using the INFO-CALCULUS application, the results of a survey, in the affirmative version of testing some stimuli, for example, lead to studying the

consequences of their interaction, providing sufficient information about the gain due to some of the factors in the benefit of the others, thus contributing to the future management of any cultural or economic phenomenon.

This study demonstrated the existence of a market segment reserved for the "anime" culture products in Romania, specifically, the existence of demand for this type of products and also that the **knowledge** of the anime and the **motivation** resulted from the participation to the "anime" related events, like conventions, are the two very important factors that influence the buying **decision** of the consumer of mass-media entertainment products.

Such a study can show the benefits of accommodating a culture, such as "anime" culture, into the already existing cultural context, and the economic and social benefits that could result from this.(Acuff, 1999).

BIBLIOGRAFIE

- Acuff, D., Reiher, R., (1999), *What Kids Buy: The Psychology of Marketing to Kids Paperback*, Ed. Simon&Shuster
- Cazacu, A. N.,(2016), „Systemic Approach of the Consumer Behavior”, *Management&Marketing*, vol. 14, issue 1, Craiova, pp.118-125, ISSN 1841 – 2416
- Cazacu, A. N.,(2018), „Statistical Considerations upon the Results of a Survey Regarding the Anime Culture in Romania”, *Journal of Romanian Literary Studies*, issue 13, Tîrgu Mureş, Arhipelag XXI Press, 442-455, ISSN : 2248-3004
- c-Cazacu, A. N.,(2019), „Study of the Endogenous Influences System in the Consumer’s Decision” , *International Journal of New Technology and Research*, vol. 5, issue 6, 54-58, available online, ISSN: 2454-4116, www.ijntr.org
- Cazacu, A. N.,(2020), „Analysis of the Consumer Decisional System Using a Software Application”, *Revista Universitară de Sociologie*, year XVI, issue 2, available online, ISSN: 1841-6578, <http://www.sociologiecraiova.ro/revista/>
- Denison, R., (2010), „Transcultural creativity in anime: Hybrid identities in the production, distribution, texts and fandom of Japanese anime”, *Creative Industries Journal*, 3, issue 3, Intellect Ltd Major Papers, Anglia, 221-235
- Ito, M., Okabe, D., Tsuji, I., (2012), *Fandom unbound : Otaku culture in a connected world*, Ed. Yale University Press, New Haven, U.S.A., ISBN 978-0-300-15864-9
- Lamerichs, N., (2013), „The cultural dynamic of doujinshi and cosplay: Local anime fandom in Japan, USA and Europe”, *Participations, Journal of Audience&Reception Studies*, vol.10, issue 1, Maastricht University, Netherlands, ISSN 1749-8716, 154-176
- Mihăiță, V., N., Cazacu, A. N., (2018), „The Perception Influences in the Anime Culture World. Implications on the Anime Products Market”, *IBIMA Proceedings, 32nd IBIMA International Conference*, Spania, ISBN: 978-0-9998551-1-9
- Mihăiță, V., N., Cazacu, A. N., (2019), „Anime - the animation for all ages. The adults perception about the anime related products”, *IBIMA Proceedings, 34th IBIMA International Conference*, Spania, ISBN: 978-0-9998551-3-3
- MacWilliams W. M., (2008), *Japanese visual culture: explorations in the world of manga and anime*, M.E. Sharpe, New York, ISBN:978-0-7656-1601-2
- Veblen, T., (2009), *Teoria clasei de lux*, Editura publică, Bucureşti, ISBN: 978-973-1931-16-6