Insights into the Influence of Temperament and Materialism on the Pass-Along Behaviour of Generations Y and Z

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Technological advances occur all over the world with an astonishing speed. Among the latest trends in marketing, automation or artificial intelligence-based technologies are the most relevant. Social networking has been evolving incessantly and Facebook still holds the top position in the field. Generations develop new and increasingly more sophisticated characteristics when social and technological changes emerge. Taking into account all the above-mentioned aspects, the present study aims at analysing the influence of some relevant psychological characteristics (i.e. materialism and temperament) on the behaviour of digital media distributionvia social networking by generations Y and Z. In order to do so, a study was disseminated among 344 respondents belonging to the two generations under scrutiny. The results of this study showed that both materialism and temperament have a great influence on the online consumer's behaviour,and the distribution behaviour via Facebook is determined more than 25% by the variables which were taken into consideration and included in a pattern of a structural equation.

Keywords: temperament, materialism, online distribution behaviour

1. Literature Review

The analysis of how the consumer's personality is reflected in the marketing sphere is relatively new and focuses on a set of activities that precede and accompany online information distribution behaviour. The study of this new type of behaviour encompasses the analysis of certain activities conducted by people in their habits of selection, purchasing and use of various ideas, experiences, products and brands and the identification of the factors that influence their choices. According to Solomon (2002),each product purchase builds a motivation and influences consumer behaviour with the aim of achieving a certain objective i.e. that of meeting the needs and desires of an individual consumer or of an entire group of consumers.

The study of the pass-along behaviour in the online environment can be regarded as a process of identifying how individuals or groups of individuals select and distribute information related to a wide range of ideas and experiences with certain products and brands.

The dynamics of the pass-along behaviour in the online environment is revealed by some processes, personality traits, pre-existing motivational and emotional factors that generate product and brand loyalty or aversion (Solomon, 2022).

According to Basso et al. (2009), analysing the process of information distribution in the online environment is one of the major challenges which the marketing community has been facing lately. Under these circumstances, both temperament and materialism are essential

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elements that have a great influence on the dynamics of pass-along behaviour in the online environment. Temperament influences individual behaviour as personality traits can generate coherent and relatively continuous reactions in the environment. These personality traits relate to self-confidence, dominance, sociability, autonomy, defensiveness, adaptability and aggression (Kotler and Keller, 2006). Moreover, according to these authors an individual's temperament can be relevant for understanding the connection between his or her information distribution behaviour in the online environment and their loyalty to some products and brands.

In Lawther's opinion (1978),temperament is a term which is used to indicate the nature of mental and emotional reactions of personality. As Romano, Carvalhoand Lima (2003) put it, temperament is what makes an individual tends to behave similarly in various situations. Currently, as Monteiro (2006) pointed out, there is not enough evidence to confirm the connection between personality traits and temperament in the online environment, which requires extensive research to shed light on certain aspects related to the study of personality and behaviour of various generations.

Millennials,also known as the Y generation (1980-1996) is one of the largest generations, characterized by the following features established by William Strauss and Neil Howe (2007): special, sheltered, confident, achieving, team-oriented, traditional, work well under pressure. Chronologically they are the first to make use of the internet and to exploit technology on a daily basis. The millennial generation is an unprecedented one, more numerous, better educated and ethnically diverse. They also enjoy social life due to the virtual world they created, which is made up of interconnected social communities.

On the other hand, the Z generation (1997-2010) is the youngest generation who has come on the scene; therefore it is the largest. This generation enjoys a certain autonomy which is due to being born in the era where technology, the internet and social media are an integral part of their lives (andit is relatively easy to get and to use). They were born in a society where constant online connection and personal devices are something normal. For the Z generation technology is not perceived as a tool but as a part of life(Van den Bergh, J., &Pallini, K. (2018).

Based on these considerations, the present study aims at assessing the differences between these groups of people belonging to the two generations with similar temperaments,taking into account the behaviour of distributing information in the online environment. According to Giglio (2005), there is insufficient research to properly explain this type of behaviour but understanding it requires solid interdisciplinary knowledge i.e. psychology, sociology and marketing. Basso et al. (2009), pointed out that the analysis of temperament and materialism in the study of the behaviour of information distribution in the online environment is an important construct. This construct, regarded as predictor of behaviour can be linked to the predisposition towards brand loyalty in certain situations. Blackwell, Miniardand Engel(2005) believe that the study of personality traits and materialism associated with the behaviour of information distribution in the online environment is a unique individual frame which constantly influences the way an individual acts in his or her own environment.

2. Research Methodology

The main objective of the present research is to explain the consumer behaviour in the online environment from two psychological perspectives: temperament and materialism. Online advertising is the main aspect which is taken into account when analysing the consumer behaviour. The present study is a quantitative one, using the non-probability sampling method and involving voluntary response sampling. The population under investigation was defined as including any member of the Y or Z generations who owns and uses a Facebook account. The initial number of respondents was 365. Based on a preliminary

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analysis, a total of 21 respondents were removed due to the following reasons: the respondents did not belong to the generations included in the research (13), the respondents did not have a Facebook account, which however made up a negligible minority (3), identical responses which could have led to irrelevant results (5). Thus the final sample is made up of 344 respondents.

We used surveysand questionnaires to gather data as part of the research method. The online questionnaire was primarily distributed via Facebook. The questionnaire was made up of our main parts and included 42 questions, some of them aiming at collecting demographic data about the respondents. The relevant questions were designed to assess the psychological and behavioural variables of the respondents who use Facebook. The questions posed to assess materialism were based on the systematized theories of Richins and Dawson (Richins, M., &Dawson, S. (1990).In order to assess materialism eight questionswere used,divided into three categories related to success, acquisition centrality and happiness. Out of the 8 items, 3 were adapted (using the following formula: $Value_{new} = 8- Value_{old}$)since the scale used in literature is constructed differently. In order to assess temperament 19 items developed by Raskinand Hall were used (Raskin, R. T., & Hall, T., 1988).

Online advertising distributed via Facebook was assessed by 10 questions divided into four categories: pass-along behaviour, referral-visitbehaviour, consistency checking and knowledge-basedvalidation (Fang, Y.-H., Kwei Tang, C.-Z. L., & Wu, C.-C., 2018).The ordinal scale we used in all questions was of Likert-type of 7 point for agreement and disagreement. The structure of the sample is presented in the table no. 1 and no. 2 below. Two thirds of the sample is represented by respondents belonging to the Z generation and one third belongs to the Y generation. Although the level of education of the Z generation is irrelevant, as far as the Y generation is concerned we can observe that 93.1% of the respondents completed at least a Bachelor's degree, Master's degree or a PhD degree. Moreover, the percentage of those who completed higher education studies of Master's Degree or PhD degree is double compared to those who completed only a Bachelor's degree.

Table no. 1

Demographic sample structure by gender and the level of education

		Gender		Completed Education				Total
		Feminine	Masculine	Middle School	High School	Higher Education – Bachelor's Degree	Master's Degree or PhD Degree	
Generation	Z	178	50	28	137	55	8	228
	Y	85	31	0	8	32	76	116
Total		263	81	28	145	87	84	344

Source: authors' collection

Table no. 2

Demographic structure by number of friends on Facebook and frequency of Facebook use

		Number of friends on Facebook		Frequency of Facebook use		Total
		Under 500	Over 500	Several times per day	Once per day	
Generation	Z	80	148	189	39	228
	Y	55	61	106	10	116
Total		135	209	295	49	344

Source: authors' collection

We used the exploratory factor analysis and the IBM SPSS 20 program to get the results, employing the extraction method: *principal component analysis* and the rotation method: *promax with Kaiser normalization*which showed that the items corresponding to the three sets of questions should be grouped into eleven latent variables.

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Certain variables were removed since they did not meet the requirements established by the specialty literature for the rotated factor loading matrix. According to the theory on which the present study is based, four major dimensions emerged in the online advertising: pass-along behaviour – 5 items, referral visit behaviour - 5 items, consistency checking – 5 items and knowledge-based validation – 4 items. Unlike the impressive number of dimensions indicated by the theory revealed by the consulted specialty literature, the temperament-related psychologicalcharacteristics were grouped into the following four dimensions: perception on leadership abilities - 3 items, self-perceived physical attractiveness – 2 items, perception on personal influence - 2 items and perception on personal relevance - 3 items. The materialism characteristics were grouped into three dimensions (latent variables): success (4 items), the importance of acquisition (3 items) and happiness (4 items).

The present study aims at analysing five latent variables based on the results of the explanatory factorial analysis and the existing theories on the expected relationships between temperament, materialism and consumers' online behaviour, namely success materialism, perceived personal relevance, online behaviour/level of pass-along information via social media, referral visit behaviour and consistency checking. The structure of the variables on the contained items and their encoding in IBM SPSS 20 and SmartPLS are presented in the annex no. 1.

3. Research Results

Table no. 3 shows the differences between the Z and Y generations as well as the results of the research conducted to compare the two means by using the t statistical test available within IBM SPSS 20. Previously the statistically significant coefficients that resulted after applying Levene's test on equality of variance were analysedand subsequently only the t tests which were appropriate for the comparison in question were evaluated (i.e. significance level corresponding to Levene's test higher than 0.05 showing equality of variance for the variable calculated for the two subsamples taken into account). The differences of means were considered only after the rejection of the null hypothesis significance tests, the significance level being lessthan the limit of 0.05 in these cases. Overall five statistically significant differences were found between psychological and temperamental characteristics in the online environment related to the Z and Y generations.

Table no. 3

Results of the test that compares the means of Y and Z generations

	Statistically significant coefficient	The difference of means	Standard error for the difference between the two means
I usually pass along product-related information or opinions to my Facebook friends if I find it relevant.	0.014	-0.612	0.248
I admire people who own expensive houses, cars and clothes.	0.016	0.458	0.188
One of the most achievements in life is acquiring material possessions.	0.022	0.4	0.174
I like to own tings that impress people.	0.002	0.584	0.187
I am going to be an important person.	0.014	0.474	0.193

Source: authors' collection (IBM SPSS20)

The results revealed that (with a difference of means of -0.612) the Y generation distributes more frequently information regarded as useful to their Facebook friends than the Z generation. According to the table no.3 the transition from word-of-mouth advertising to online advertising is the characteristic which most differentiates the two generations, the Y

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generation displaying a higher percentage. This aspect can be due to the higher frequency of Facebook use by the Y generation. Even if there are no significant differences, if we compare the two means (Y generation – 1.14 and Z generation -1.40),it can be observed that most people who belong to the Y generation use Facebook several times per day while the people who belong to the Z generation use Facebook less frequently.

Some other significant differences between the two generations can be shown in point of admiration for people who own expensive homes, cars, clothes, accumulation of wealth and material possessions and enjoying the popularity because they own something that people like or admire (7-item scale that measures success materialism). The differences identified if we compare the two generations range between 0.400 are 0.584. However since the scale has only 7 levels, the differences are not significant. In point of materialism, we might say that the Z generation displays a higher level of materialism compared with the Y generation. The most remarkable difference between the two generations is linked to the happiness resided in owning things that people like or admire; thus the Z generation places a higher emphasis on how material possessions display wealth and status and reflect their own image in the society they live.

Last but not least another noteworthy difference between the two generations included in this study is related to the item *I am going to be an important person,* which is used to assess the respondents' temperament by investigating their perception of personal relevance. The result of 0.474 shows that the Z generation holds a higher degree of temperament compared with the Y generation. Moreover, according to the idea highlighted in the statement, the Z generation displays a higher level of optimism. This outcome supports Strauss-Howe generational theory since the Z generation can be included in the adaptive "artist" archetype and has higher levels of optimism than its predecessor, which fell within the "pragmatic hero"archetype and displayed higher civic sense.

In order to assess the influence of materialism and temperament on pass-along behaviour in the online environment via social media among Y and Z generations, the latent variables related to the above-mentioned aspects were included in a model with structural equations using PLS method and SmartPLS (Figure no. 1).

The relationships included in the model are based on the concepts existing in the literature and transpose graphically the following eight research hypotheses:

- *H1.1 The degree of consistency checking influences the distribution of information in the online environment.*
- *H1.2 The referral visit behaviourinfluences the distribution of information in the online environment.*
- *H2.1 Temperament in terms of perceived personal relevanceinfluences the degree of consistency checking.*
- *H2.2 Temperament in terms of perceived personal relevanceinfluences the distribution of information in the online environment.*
- *H2.3 Temperament in terms of perceived personal relevanceinfluences the referral visit behaviour.*
- *H3.1 Success materialisminfluences the degree of consistency checking.*
- *H3.2 Success materialisminfluences the distribution of information in the online environment.*
- *H3.3 Success materialisminfluences the referral visit behaviour.*

All latent variables included in the model may be referred to as the "reflective"ones. Therefore beforeconducting the analysis which uses structural equations modelling,the quality of the variables included in the model was assessed. Consequently the creditworthiness of the reflective variables both in terms of construct reliability and validity and of discriminant validity is given by the optimal values of the indicators based on PLS algorithm, whose results are shown in table no. 4 and 5 below. The specific validity indicators fall simultaneously within

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the parameters indicated by the literature(Hair, J. F., Hult, G. T., Ringle, C. M., &Sarstedt, M., 2017).

Table no. 4

Indicator on creditworthiness of variables in terms of reliability and validity

	Cronbach's Alpha	rho_A	CR	AVE
Pass-along online behaviour	0.871	0.879	0.906	0.66
Referral visit behaviour	0.865	0.874	0.902	0.65
Success materialism	0.785	0.806	0.857	0.599
Perceived personal relevance	0.814	0.841	0.877	0.642
Consistency checking	0.932	0.933	0.948	0.786

Note: As stated in the speciality literature, the Cronbach's Alpha, rho_Aand Composite Reliability (CR)indicators must exceed the limit of 0.7 whereas the Average Variance Extracted (AVE)must exceed the limit of 0.5

Source: authors' collection (IBM SPSS20)

Table no. 5

HTMT Indicator on creditworthiness in terms of discriminant validity

Heterotrait-Monotrait Ratio (HTMT)					
	(1)	(2)	(3)	(4)	(5)
(1) Pass-along online behaviour					
(2) Referral visit behaviour	0.534				
(3) Success materialism	0.177	0.287			
(4) Perceived personal relevance	0.173	0.215	0.290		
(5) Consistency checking	0.337	0.384	0.098	0.143	

Note: According to the speciality literature the HTMT indicator must be below the limit of 0.9 for all latent variables included in this model

Source: authors' collection (IBM SPSS20)

For hypothesis testing we applied the Bootstrapping procedure which is available within SmartPLS and the results are shown below (figure no. 1).
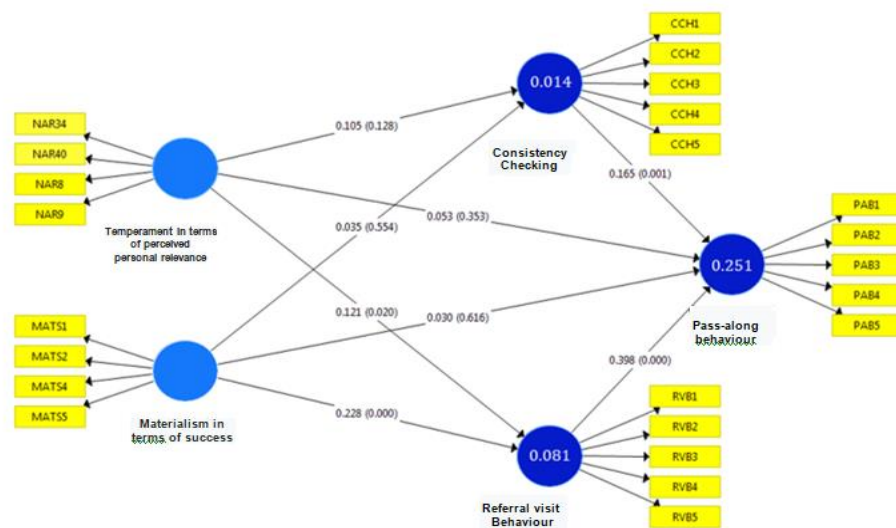

Fig. no. 1 – Results of structural equation modelling
Source – SmartPLS -Bootstrapping
Note: the values indicated on the arrows are the regression coefficients and the statistical significance of the coefficients – "p values" (i parentheses) and the values indicated in the circles are the coefficients of determination (R²)

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The hypotheses H1.1 and H1.2 are accepted as the statistical significance of the coefficients are below the limit of 0.05 (p=0.000<0.05 and p=0.001<0.05). Thus the pass-along behaviour in the online environment depends simultaneously on the referralvisit behaviour and on the consistency checking. The behaviour related to the recommended links has a greater influence on the behaviour of distributing information than on the consistency checking according to the regression coefficients (0.398>0.165).

The hypotheses H2.1 and H2.2 are rejected as in both cases the statistical significance of the coefficients exceeds the limit (p=0.128>0.05 and p=0.353>0.05). Furthermore the H.2.3 is accepted as the statistical significance of the coefficient is less than 0.05 (p=0.020<0.05). Thus we can argue that temperament in terms of perceived personal relevance influences the referral visit behaviour. On the other hand, the hypotheses H3.1 and H3.2 are rejected since in both cases the statistical significance of the coefficients exceeds the limit(p=0.554>0.05 and p=0.616>0.05). It can be noticed that the hypothesis H3.3 is accepted as the statistical significance of the coefficient is less than the commonly accepted threshold (p=0.000<0.05). Therefore we can argue that success materialism has a great influence on the referral visit behaviour. According to the regression coefficients, materialism influences the referral visit behaviour to a greater extent than temperament (0.228>0.121).

The coefficients of determination show that the level of online information distribution is determined by the other four variables included in the model in proportion of 25.1% ($R^2=0.251$). The other two variables of online behaviour are shown in a smaller proportion by the following model: consistency checking – 1.4% ($R^2=0.014$) whereas referral visit behaviour is explained by the other two variables in proportion of 8.1% ($R^2=0.081$). Although the values of the coefficients of determination (R^2) are relatively low in these last two cases, the noteworthy influence on temperament and materialism on the variables of pass-along online behaviour is undeniable and statistically significant.

Considering the generations included in this research, we can also test the following hypothesis:

- *H4There are differences between the Y and Z generations in terms of the analysed model.*

This hypothesis was tested by running the multi-group analysis approach PLS-MGA – *partial least squares multi group analysis*, available in SmartPLS. As it can be seen in the table no.6 below, the significance coefficients (p-Value) are higher that the accepted limit of 0.05, aspect which led to the rejection of the H4 hypothesis. Surprisingly there are no differences in the previously-presented model related to the two generations Y and Z, although the specialty literature and the results of the t tests show significant differences between the two generations in terms of the variables included in the model. Thus the mechanism by which temperament and materialism influence the pass-along behaviour in the online environment is similar in both generations.

Table no. 6

Difference between the Z and Y Generation in terms of the analysed model (SmartPLS, PLS-MGA)

	Path Coefficients-diff (GenZ – GenY)	p-Value (GenZvsGen Y)
Referral visit behaviour->Pass-along online behaviour	0.026	0.404
Success materialism ->Pass-along online behaviour	0.002	0.506
Success materialism ->Referral visit behaviour	0.042	0.644
Success materialism ->Consistency checking	0.007	0.479
Perceived personal relevance->Pass-along online behaviour	0.036	0.404
Perceived personal relevance->Referral visit behaviour	0.018	0.485
Perceived personal relevance->Consistency checking	0.023	0.598
Consistency checking ->Consistency checking	0.127	0.9

Source: authors' collection (SmartPLS)

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4. Conclusions

The present study combines both theoretical and practical aspects. Taking into account the relevance to the current state of the literature (theoretical implications) the results of the present research are distinctive in that they explain the mechanism by which temperament and materialism influence the consumers' pass-along behaviour in the online environment via social media is similar in both Y and Z generations. Mention must be made here that little research has been conducted on this aspect so far. Thus the results indicate that temperament in terms of perceived personal relevance and materialism in terms of success have a great impact on the referral visit behaviour, which, in turn, highly influences the level of pass-along information in the online environment.

If we consider the practical implications, the comparative analysis of materialism, temperament and consumers' pass-along behaviour in the online environment provides relevant information to market segmentation, thus enabling to target on specific segments and to tailor the product/service supply to meet their needs. Moreover the results of this research provide valuable information to the companies which are willing to adapt their marketing mix taking into consideration their customers' needs and wants (common characteristics). The very fast-paced development in the recent years has had a great influence on the customer profile as well. If the Y generation is one of the most important segments whereas the Z generation is now entering the segment of active people.

Only a proper understanding of the differences between psychological and behavioural characteristics can lead to developing a better branding and employer branding strategy.

References
1. Basso, K., Espartel, L. B., Sampaio, C. H., Perin, M. G., &Antoni, V. L. (2009). Personalida de e lealdade: proposições de pesquisa com o modelometateórico de motivação e personalidade. Revista Economia&Gestão, 19(19), 102-124.
2. Blackwell, R., Miniard, P., & Engel, J. (2005). Comportamento do consumidor. São Paulo: Pioneira Thomson Learning
3. Yu-Hui Fang, Kwei Tang, Chia-Ying Li & Chia-Chi Wu (2018) On electronic word-of-mouth diffusion in social networks: curiosity and influence, International Journal of Advertising, 37:3, 360-384
4. Emmons, R. A. (1984). Factor analysis and construct validity of the Personality Inventory. Journal of Personality Assessment, 48, 291–300
5. Giglio, E. M. (2005). Comportamento do consumidor. (3a ed.). Thompson: São Paulo
6. Hair, J., Hollingsworth, C.L., Randolph, A.B. and Chong, A.Y.L. (2017), "An updated and expanded assessment of PLS-SEM in information systems research", Industrial Management & Data Systems, Vol. 117 No. 3, pp. 442-458
7. Howe N. and Strauss W. "The Next 20 Years: How Customer and Workforce Attitudes Will Evolve". Harvard Business Review. July-August (2007): 41-52.

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XXIth Edition, 2020, Galati, Romania,
"Dunarea de Jos" University of Galati, Romania – Faculty of Economics and Business Administration

8. *Kansi, J. (2003). ThePersonality Inventory: Applicability in a Swedish population sample. Scandinavian Journal of Psychology, 44(5), 441–448.*

9. *Kotler, P. e Keller, K. (2006).Administração de Marketing: a bíblia do marketing. São Paulo: Prentice Hall.*

10. *Lawther, J. D. (1978). PsicologiaDesportiva. Rio de Janeiro, Fórum.*

11. *Monteiro, P. R. R., (2006). Personalidade, CompraCompulsiva, Hábitos e InovaçãoemModa: umaaplicação do modelo 3M de motivação e personalidade. Dissertação de Mestrado. CEPEAD-UFMG. Belo Horizonte, MG*

12. *Raskin, R., & Terry, H. (1988).A principal-components analysis ofthe Narcissistic Personality Inventory and further evidence of its construct validity. Journal of Personality and Social Psychology, 54, 890–902.*

13. *Richins, Marsha L. (1987), "Media, Materialism, and Human Happiness," in Advances in Consumer Research, Vol. 14, ed. Melanie Wallendorf and Paul Anderson, Provo, UT: Association for Consumer Research, 352-356.*

14. *Richins, Marsha L. & Scott Dawson (1990), "Measuring Material Values: A Preliminary Report of Scale Development," in Advances in Consumer Research, Vol. 17, ed. Marvin E. Goldberg, Gerald Gorn, and Richard W. Pollay, Provo, UT: Association for Consumer Research, 169-175.*

15. *Romano, C. A., Carvalho, H. A. de, & Lima, I. A. de. (2003). Percepção e comunicação: Embusca da compreensão do comportamento do consumidor. Anais XXIII EncontroNacional de Engenharia de Produção – ENEGEP.OuroPreto, MG.*

16. *Solomon, M. R. (2002). O comportamento do consumidor: comprando, possuindo e sendo. Porto Alegre: Bookman.*

17. *Van den Bergh, J., & Pallini, K. (2018). Marketing to Generation Z. Research World, 2018(70), 18–23.*