

Article Is Consumer Overchoice a Reason for Decision Paralysis?

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Abstract: Time and responses are vital to the process of decision-making. It is a common assumption that having a wide array of options from which to choose is a good thing, but is that truly the case? This research aims to investigate the consumer's reaction to the increasing number of choices available (which will be referred to as choice overload, or overchoice); more precisely, if it is related to paralysis concerning decision-making. To obtain structured and relevant results, the study is an intergenerational one, endeavoring to compare the outcomes across three different generations (Generations X, Y, and Z) and across their genders. It also aims at identifying trends, if any should arise, pertaining to the matter of overchoice. A survey was conducted among 396 respondents from Iasi, Romania, and the questionnaire is presented in the annex. The main results indicate that product overchoice is real but is more significant in terms of generational point of view rather than that of gender. The findings fill a knowledge gap on the relationship between choice overload and decision paralysis.

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Citation: Manolică, A.; Guță, A.-S.; Roman, T.; Dragăn, L.M. Is Consumer Overchoice a Reason for Decision Paralysis? *Sustainability* **2021**, *13*, 5920. https://doi.org/10.3390/ su13115920

Academic Editors: Marc A. Rosen and Flavio Boccia

Received: 26 March 2021 Accepted: 20 May 2021 Published: 24 May 2021

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Copyright: © 2021 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https:// creativecommons.org/licenses/by/ 4.0/). Keywords: choice overload; decision paralysis; evaluation costs; regret anticipation; inaction; delay

1. Introduction

In a world in which industrialization defines our society, the consumer is, undoubtedly, king [1]. In order to win him over, the supply has adapted to cover every possible niche in his demand [2], often offering much more beyond the consumer's needs and wants [3]. The choices that he can make have become countless [4], reaching a point at which he cannot easily asses the total amount of available options and possible decisions [5].

Not only is this phenomenon noticeable among available products but, in today's "market democracies", people are also faced with a number of alternatives that are everincreasing across many areas, including places to live, careers, holiday destinations, potential partners, and more [6].

What constitutes an even more challenging matter to assess is whether the increasing number of choices has positive or negative connotations [7].

This expansion has brought on many advantages, not only to the consumer, but also to the supplier [8]. Personalization and variety are highly sought after and well-received. The economy thrives, the consumer has his needs and wants met, and suppliers battle for a bigger market share in search of profit [9].

The abundance of choices can be a drawback in the supply-and-demand process [10]. While the consumer is left overwhelmed by the choice he has to make, picking out from the many options the market provides, competition among the suppliers is fierce and sometimes their product or service does not even reach the consumer for their consideration. He is already facing more options than he can process and fails to analyze them all [11].

Even so, the pressure of making the wrong choice can lead to the option of not making a choice at all, as he is unable to make a decision due to too many alternatives that are difficult to compare [12].

We identified a gap in knowledge referring to the relationship between choice overload and decision paralysis. First, it was necessary to define choice overload, which is a construct itself (based on overwhelmingness, assortment size, evaluation costs, and product diversity), but also to define decision paralysis—a construct which consist of regret anticipation, overthinking, maximizing/satisficing and inaction/delay. All these components were found in the literature of various research, but they were not linked in a unitary construct.

In a brief overview, one can easily surmise, seeing the overlapping traits of the concepts, that they might be related to each other and worth studying, as such an association could provide newfound insights in the field of marketing.

Another gap in knowledge is about the effects on the consumer decision-making process. One of the main questions that the research plans to clarify is whether these effects differ by gender or by generations (Gen X, Gen Y, and Gen Z) and if these effects can be described in terms of affect (positive or negative).

Illustrated below, in Figure 1, is a summarizing conceptual map of all the constructs that have served as topics of the research, in aid of understanding their significance, as well as the links between them.



Figure 1. Construct map of overchoice, decision paralysis, and the effects that will be tackled in the research. Source: self-elaboration.

Overchoice, first defined by Toffler in 1970 [13] and also known as choice overload, is described to represent a peculiarly super-industrial dilemma. The author hypothesized that, in the aftermath of the Super-industrial Revolution, members of society will not endure the absence of choice but will rather be the victims of a paralyzing surfeit of it.

In broader, more technical terms, overchoice represents a cognitive process defined by the difficulty of making a decision when multiple options are available [14].

In this research, overchoice was measured by the choice overload. This variable is generated by some elements, as found in the literature, such as:

 Overwhelmingness: when consumers face45 an overwhelming number of choices, they are crippled by the large number of variables they have to cope with when making a decision [15];

- Assortment size: smaller choices in the context of a bigger choice would ultimately lead up to the final choice, through the means of groups and subgroups. It could be a way to preserve assortment size and minimize negative affect [4];
- Evaluation costs and product diversity: increased cognitive efforts, as well as the increased probability of regret that can be associated with a large assortment, as it implies high evaluation costs and high regret anticipation [9];

Different terms were found, such as "analysis paralysis" or "paralysis by analysis" which involve overanalyzing or overthinking so that an action or a decision is ultimately not taken, resulting in paralyzing the outcome [16]. Decision paralysis was identified as a situation where the opportunity cost of decision analysis exceeds the benefits that could be gained by enacting some decision [16].

Putting it in a simpler perspective, decision paralysis can be defined as having such a difficult time choosing between action A and B, that action C, or even no action at all is chosen.

As a construct, decision paralysis can be explained by:

- Regret anticipation: there is a conflict intrinsic to the assortment of a brand, related to either reducing the number of alternatives or potential regret, or to simplify information processing [9];
- Overthinking: an individual situated in the scenario of having to make a decision might feel compelled to find an optimal solution and, because they fear an erroneous outcome, they never finish looking for that perfect solution [15];
- Maximizing/satisficing: consumers can be sorted into two categories based on their choice-making: satisficers and maximizers. There are findings that suggest that maximizers and satisficers suffer regret in a similar way when considering comparable alternatives in a concrete mindset, and noncomparable alternatives in an abstract mindset. However, when considering comparable alternatives in an abstract mindset, or noncomparable alternatives in a concrete mindset in a concrete mindset, maximizers' regret is more heightened than the satisficers' [14];
- Inaction/delay: when consumers are facing an overwhelming number of choices, they postpone the decision [15].

Further on, considering the relatively new trend in marketing to shift from an age perspective to a generational one, a generational approach is added to this study [17–19]. The generational cohort theory [20] is considered as a basis for the aforementioned approach, which states that generational cohorts share common traits that are vastly different from their predecessors and successors, and that those traits are defined by events and trends that happen during their upbringing [21]. Therefore, their reaction to different phenomena is bound to differ [22].

The three "youngest" generations (X, Y, and Z) on the labor market and their reaction to overchoice are analyzed in this research, as well as the possible identifiable differences in gender regarding perception.

Generation X represents the cohort of people born between 1965 and 1980, as researchers agree. Raised as vigilant and conservatively money-wise, Xers have posed challenges to marketers and advertisers. They are hard to target, due to the fact that they are underemployed, overeducated, intensely private, and unpredictable.

Following Generation X there is Generation Y, better known as "Millennials" because they reached maturity around the turn of the millennium. Their birth years vary from 1981, as the eldest Millennial, and 1996, as the youngest. They are different from their predecessors in their coming of age, accounting for the fact that they are brought up in the information age and that they are the first generation to grow up along with wide-spread digitalization, computers, mobile phones, and other devices, such as MP3 players, or to use the internet on a frequent basis. They also witnessed the rise of social media and were the early adopters of it. As such, their perception and preferences have become more homogenous worldwide, as the internet has exposed its users to the same experiences, ideas, and trends. Succeeding the demographic cohort of the Millennials, Generation Z, dubbed "Gen Z", are typically the children of Generation X, born between 1997 and 2012. Compared with the Millennials, who witnessed the integration of digital media in society, Generation Z is actually the first generation to be born in the aftermath of the internet's popularization and widespread availability. Generation Z members are considered to be tech-savvy, socially conscious, and actively looking for change and innovation. They are expert users of the Internet of Things, and they keep constant connection with the online medium.

Decision paralysis can be an outcome of overchoice, and therefore it was decided that this topic is viable for research, whilst tackling the issue through the lens of generational and gender differences.

This research is applicable in the field of marketing, more precisely in the study of consumer behavior.

This research started from the perspective originating in the literature, that provided insights in many fields pertaining to the issue of choice overload but disappointed in the number of available studies on the topic of decision paralysis. The few studies accessible were not applicable to this particular research due to theme differences. Even fewer studies have been identified regarding the reaction of different generations to overchoice, which might indicate a niche for future research.

The purpose of this research is to study the consumer's reaction to the phenomenon of choice overload and, more precisely, if it induces paralysis concerning decision-making. To obtain structured and relevant results, the study is also intergenerational, endeavoring to compare the outcomes across three different generations (Generations X, Y, and Z). The findings also compare results across genders and identify trends, if any should arise, pertaining to the matter of overchoice.

The research aims at determining whether overchoice justifies the appearance of decision paralysis, and at measuring the relationship it has with the decision-making process, while also analyzing the extent to which the consumers from three different generations are overwhelmed by the abundance of choices available to them. Another aim would be to discern whether the vast selection of options accessible is positively or negatively denoted, from the point of view of the three generation of consumers.

Based on the mentioned aims, the following research problems were developed:

- 1. Determine whether decision paralysis is justified by overchoice;
- 2. Examine whether the tendency to maximize is related to decision paralysis;
- 3. Analyze the denotation of the overchoice phenomenon, in regard to positive and negative affect;
- 4. Compare the extent to which overchoice and decision paralysis impact on three different generations, and on gender.

In order to be able to examine and explain the aims, the following objectives were phrased, along with the concepts to be considered in their formulation:

Product overload (perception)—a high perception is an indicator of overchoice; will be used in the majority of the hypotheses derived from the objectives:

Objective 1: Identify the perception regarding product overload;

 Evaluation costs (perception) [23]—also an indicator for overchoice and, more precisely, what it entails, as a consumer might experience the product overload perception, but might not perceive a high evaluation cost; it connects overchoice to decision paralysis as they are both defined by this construct:

Objective 2: Identify the perception regarding evaluation costs;

• Regret anticipation [23]—a primary sign of decision paralysis, as it concerns the consumers' state of mind in the decision-making process:

Objective 3: Identify the perception regarding regret anticipation;

 Inaction and delay [24]—the strongest indicators for decision paralysis, and often outcomes of it: **Objective 4:** Identify the reaction of inaction and delay;

• Emotional responses (positive and negative affect) [24]—they illustrate the general feeling toward overchoice and will help in denoting it in the perception of the consumer:

Objective 5: Identify the emotional responses of negative and positive affect;

• Predisposition toward maximizing [25]—the presence of this tendency could explain why some consumers are affected negatively by overchoice or decision paralysis; maximizers thrive in the presence of many choices, but are also more predisposed to regret, and therefore to paralysis:

Objective 6: Identify the predisposition toward maximizing;

 Generational and gender differences—based on the generational cohort theory, the generations react differently to phenomena due to events in their upbringing [23]; the genders are also expected to react differently as well:

Objective 7: Identify the generational and gender differences.

In order to reach the aim and the objectives, several hypotheses were formulated, as stated below.

2. Materials and Methods

Taking into account the constructs and the objectives defined above, as well as previous literature, the following hypotheses were formulated, as presented in Table 1:

Obj.	No.	Hypothesis	Source
01		There is a positive relationship between overchoice and decision paralysis.	self-elaboration
O2	Hypothesis 1	H1a: There is a positive relationship between product overload and evaluation costs.	[22,23]
O3	JI	H1b: There is a positive relationship between product overload and regret anticipation.	[22]
O4		H1c: There is a positive relationship between product overload and inaction and delay.	[23]
O6	Hypothesis 2	There is a positive relationship between the predisposition toward maximizing and regret anticipation.	[22,25]
		There is a positive relationship between overchoice and emotional affect.	self-elaboration
O5	Hypothesis 3	H3a: There is a positive relationship between product overload and positive affect. H3b: There is a positive relationship between product overload and negative affect.	[24]
07	Hypothesis 4 Hypothesis 5	There is a difference in constructs among male and female consumers. There is a difference in constructs among the Generation X, Y, and Z consumers.	self-elaboration

Table 1. Hypotheses of research, corresponding to the formulated objectives.

Source: findings of this research.

Considering that achieving significant conclusions requires prolific data, we decided to conduct descriptive research, following a mono method quantitative design. The research took place in the municipality of Iași, in the first half of 2020. Its general aim was to describe the consumers' perception regarding the phenomenon of overchoice and establish if those perceptions can be translated into decision paralysis.

The quantitative methodology was applied as a survey through the means of the questionnaire as an instrument of research (available in Appendix A Table A1). It employed non-probabilistic sampling through the means of a mix between snowball and self-selection techniques.

For the quantitative method, the advantage lies in its broadness and costless. The selected platform provided ease of analysis and visualization of replies, and the researcher incurred little effort at no cost, as responses could be gathered from home. The disadvantages were that the online tool could not be easily controlled, meaning that the researcher had little control over who responded to the survey and over the quality of responses. Considering the crisis taking place during the time of this research (the COVID-19 pan-

demic), and that the evaluation has moved to the online medium, the research had to consider an adequate and sufficient method to reach the respondents. The online survey was considered to be the optimum one.

The instrument, the questionnaire, was divided according to the constructs, resulting in a number of 43 items elaborated by the researchers (as you can see in Appendix A Table A1). It has eight sections: product overload perception (six items); evaluation costs perception (six items); regret anticipation (four items); inaction and delay (six items); positive affect (four items); negative affect (five items); predisposition toward maximizing (six items); and demographics (six items).

All items, except the demographics, were formulated under a derivative of the Likert scale, an attitudinal agreement and ordinal scale, using grades from 1 to 10 (1–total disagreement, 10–total agreement). However, as respondents would perceive the numerical distance between consecutive grades to be equal across the entire scale, this scale could be considered an interval scale and, therefore, numerical.

Using a confidence interval of 95%, the resulting representative sample size is of 384. However, the limit was not strict to a minimum of 384 for the sample size, and a number of 435 respondents was achieved. However, 39 of the respondents were older than 55, not matching the eligibility criteria from the study, and were not included in the final sample. This resulted in 396 viable responses, collected from May 1st to June 1st 2020.

The snowball technique was applied in order to gain a more reasonable reach of the generations that the researcher had not had an easy access to, due to the limitation of socializing contexts of their age.

In regard to how those items were used in order to test the hypotheses, the analysis was performed in SPSS using correlation and after conducting the normality testing, as the data can be considered on an interval scale, not only as ordinal. Each item represents a separate variable and, based on the constructs, the respective items from each construct was computed into a new variable, using the median formula. The new variables were then correlated. Further robustness checks were made, using the mean (while some researchers disapprove of using the mean in ordinal scales, it can be argued that the scale from 1 to 10 can be considered as a grading system) and factorial analysis. ANOVA tests and T tests, or their non-parametric equivalents were performed for H4.

3. Results

The sample corresponds to the following demographic structure:

- 1. Gender: females 75.5% (299 respondents) and males 24.5% (97 respondents);
- 2. Age:
 - Generation Z: 33.3% (132 respondents)—18–23 years of age;
 - Generation Y: 33.3% (132 respondents)—24–39 years of age;
 - Generation X: 33.3% (132 respondents)—40–55 years of age;
- 3. Employment status: employed 51.5% (204 respondents)—majority; student 32.1% (127 respondents); liberal profession 7.6% (30 respondents); entrepreneur: 6.3% (25 respondents); unemployed: 2.3% (9 respondents); retired: 0.3% (1 respondent);
- 4. Net income:
 - ≤1350 RON: 28.3% (112 respondents);
 - 1351–2500 RON: 26.5% (105 respondents);
 - 2501–4500 RON: 29.3% (116 respondents)—majority;
 - \geq 4501 RON: 15.9% (63 respondents).

An additional two questions were addressed in order to determine whether the survey reached "the main decider" or "the main buyer" of a family or residence. That is relevant as those categories are the ones involved in the decision-making process and they are susceptible to the phenomena addressed in this study.

- 5. Main decider (% of shopping decided):
 - 0–25%: 8.6% (34 respondents);

- 26–50%: 20.5% (81 respondents);
- 51–75%: 26.3% (104 respondents);
- 76–100%: 44.7% (177 respondents)—majority;
- 6. Main buyer (% of shopping actually done):
 - 0-25%: 20.2% (80 respondents);
 - 26–50%: 16.4% (65 respondents);
 - 51–75%: 27.3% (108 respondents).

Hypotheses Testing

Testing Hypothesis 1: There is a relationship between overchoice and decision paralysis.

In order to test the first hypothesis, which aims at determining the existence of a relationship between overchoice and decision paralysis, we tested an additional three sub-hypotheses, regarding the correlation between product overload perception, and the three other perceptions that define decision paralysis (evaluation costs, regret anticipation, and inaction and delay).

Since the results of the 1-Sample Kolmogorov–Smirnov test for normality indicated that all four variables which will be needed for this hypothesis are non-parametric, Spearman correlation was used, at 95% confidence interval and 0.05 significance level.

(a) **Testing Hypothesis 1a:** There is a relationship between product overload (PO) and evaluation costs (EC).

Using Spearman correlation, the null hypothesis is rejected, as $\rho \neq 0$, but = 0.470 (sig. 0.000). There is a significant positive linear relationship of moderate intensity between product overload and evaluation costs. H1a is accepted.

(b) **Testing Hypothesis 1b:** There is a relationship between product overload (PO) and regret anticipation (RA).

Using Spearman correlation, the null hypothesis is rejected, as $\rho \neq 0$, but = 0.519 (sig. 0.000). There is a significant positive linear relationship of moderate intensity between product overload and regret anticipation. H1b is accepted.

(c) **Testing Hypothesis 1c:** There is a relationship between product overload (PO) and inaction and delay (ID).

Using Spearman correlation, the null hypothesis is rejected, as $\rho \neq 0$, but = 0.342 (sig. 0.000). There is a significant positive linear relationship of moderate intensity between product overload and inaction and delay. H1c is accepted.

As a consequence of all three sub-hypotheses being accepted, it can be inferred that H1 is accepted as well, considering that decision paralysis is defined by the concepts that were correlated with overchoice in the previous three tests.

Testing Hypothesis 2: There is a relationship between the predisposition toward maximizing (PTM) and regret anticipation (RA).

Since the results of the 1-Sample Kolmogorov–Smirnov test for normality indicated that both variables which will be needed for this hypothesis are non-parametric, the Spearman correlation was used, at 95% confidence interval and 0.05 significance level. Using Spearman correlation between RA and PTM, the null hypothesis is rejected, as $\rho \neq 0$, but = 0.487 (sig. 0.000). There is a significant positive linear relationship of moderate intensity between the predisposition toward maximizing and regret anticipation. H2 is accepted.

Testing Hypothesis 3: There is a relationship between overchoice and emotional affect.

In order to test the third hypothesis, which will ascertain the existence of a relationship between overchoice and emotional affect, two sub-hypotheses were tested, regarding the correlation between product overload perception, and the negative and positive dimensions of emotional affect. It remains to be seen with which dimension overchoice is most related to.

Since the results of the 1-Sample Kolmogorov–Smirnov test for normality indicated that the three variables which will be needed for this hypothesis are non-parametric, this research used Spearman correlation, at 95% confidence interval and 0.05 significance level.

(a) **Testing Hypothesis 3a:** There is a relationship between product overload (PO) and positive affect (PA).

Using Spearman correlation between PO and PA, the null hypothesis is rejected, as $\rho \neq 0$, but = 0.188 (sig. 0.000). There is a significant positive linear relationship of weak intensity between product overload and positive affect. H3a is accepted.

(b) **Testing Hypothesis 3b:** There is a relationship between product overload and negative affect.

Using Spearman correlation between PO and NA, the null hypothesis is rejected, as $\rho \neq 0$, but = 0.302 (sig. 0.000). There is a significant positive linear relationship of moderate intensity between product overload and negative affect. H3b is accepted.

As both sub-hypotheses are confirmed, H3 is thus accepted as well, confirming that overchoice is associated with emotional responses.

Testing Hypothesis 4: There is a difference in constructs among the male and female consumers.

Since the results of the 1-Sample Kolmogorov–Smirnov test for normality indicated that the three variables needed for this hypothesis are non-parametric, this research used the Mann–Whitney U test, at 95% confidence interval and 0.05 significance level. The results of the Mann–Whitney U test are presented below, in Table 2:

	PO_Med	EC_Med	RA_Med	ID_Med	PA_Med	NA_Med	PTM_Med
Mann–Whitney U	12,755.000	14,056.500	13,855.000	14,426.000	13,891.000	13,283.000	14,363.500
Wilcoxon W	17,508.000	18,809.500	18,608.000	19,179.000	18644.000	58,133.000	59,213.500
Z	-1.789	-0.456	-0.661	-0.079	-0.626	-1.287	-0.141
Asymp. Sig. (2-tailed)	0.074	0.649	0.508	0.937	0.532	0.198	0.888

Table 2. Median differences in constructs between genders.

Grouping variable: gender; source: findings of this research.

None of the constructs show a difference between male and female consumers, as all the distributions are the same across gender, and none have a *p*-value lower than 0.05. Therefore, the null hypothesis fails to be rejected, and H4a is rejected.

Testing Hypothesis 5: There is a difference in constructs among the Generation X, Y, and Z consumers.

Since the results of the 1-Sample Kolmogorov–Smirnov test for normality indicated that the three variables which will be needed for this hypothesis are non-parametric, Kruskal–Wallis H tests were used, at 95% confidence interval and 0.05 significance level.

The results of the Kruskal–Wallis test are presented below, in Table 3:

	PO_med	EC_med	RA_med	ID_med	PA_med	NA_med	PTM_med
Chi-Square	1.526	0.171	9.809	16.291	6.380	4.644	18.564
dÎ	2	2	2	2	2	2	2
Asymp. Sig.	0.466	0.918	0.007	0.000	0.041	0.098	0.000

Table 3. Median differences in constructs between generations.

Grouping variable: generation; source: findings of this research.

There is a significant difference between generations when it comes to regret anticipation, inaction and delay, positive affect, and the predisposition toward maximization. There is no significant difference between generations, however, regarding product overload, evaluation costs, and negative affect. H5 is accepted regarding RA, ID, PA, and PTM, but H5 is rejected regarding PO, EC, and NA.

Keeping in mind that the data are measured on an interval, numerical scale and that the central limit theorem, which applies for sample sizes larger than 30, states that if one has a population with mean μ and standard deviation σ , and takes sufficiently large random samples, then the distribution of the sample means will be approximately normally distributed. The research can thus consider the sample in question, which is made out of 396 observations, and therefore larger than 30, as normally distributed.

This would allow for parametric tests and for the use of the mean as a central measurement, not only as a secondary mean for testing the data, but also as a robustness check.

As a result of the normality testing, PO, EC, and PTM mean variables are normally distributed, which allows for parametrical testing; RA, ID, PA, and NA mean variables are non-normal, and therefore require non-parametric testing.

In order to summarize the findings of the second round of testing, using the mean as a central measure, and the tests corresponding to the normality tested, the following table (Table 4) was formulated, using the results from SPSS.

In comparison with the median testing, the following differences were noted in terms of results:

- regarding H4, instead of all the constructs yielding no differences between genders, only product overload (PO) proved to be different across genders, whilst all the others had the same result as the median testing;
- regarding H5, instead of positive affect (PA) yielding differences between generations PA did not show differences across genders in mean testing, whilst all the other results were maintained.

Moreover, the ANOVA test allowed for post-hoc analysis (Bonferroni test), telling which generation is different from which, in terms of the predisposition toward maximization: Gen X is different from both Gen Y (sig. = 0.010) and Z (sig. = 0.000), while Gen Y and Z are similar (sig. = 0.090).

Overall, this method did not yield significantly different results compared with the first method, as the decisions regarding the hypotheses remained roughly the same. This, used as a robustness check, confirms the fact that the initial analysis of the constructs' median was accurate.

Hypothesis	Test Conducted		Si	g.		Decision
H1 (relationship between overchoice and decision paralysis)				accepted		
H1a (relationship between PO and EC)Pearson correlation0.545 (moderate, positive)H1b (relationship between PO and RA)Spearman correlation0.538 (moderate, positive)H1c (relationship between PO and ID)Spearman correlation0.395 (moderate, positive)					e) e) e)	accepted accepted accepted
H2 (relationship between RA and PTM) Spearman correlation 0.528 (moderate, positive)				e)	accepted	
H3 (relationship between overchoice and emotional affect)						accepted
H3a (relationship between PO and PA) H3b (relationship between PO and NA)	Spearman correlation Spearman correlation	0.220 (weak, positive) 0.356 (moderate, positive)			accepted accepted	
H4 (difference between genders)	Independent-samples T	PO 0.031 R 4	E 0.6	С 94 РА	PTM 0.736 NA	rejected; accepted:
	Mann–Whitney U	0.811	0.917	0.552	0.387	PO only
H5 (difference between generations)	One-way ANOVA	PO 0.524	E 0.8	C 359	PTM 0.000	accepted: RA, ID, PTM;
115 (unierence berween generations)	Kruskal–Wallis H	RA 0.020	ID 0.000	PA 0.061	NA 0.112	rejected: PO, EC, PA, NA

 Table 4. Hypothesis testing for the mean method, results from SPSS.

Source: findings of this research.

4. Discussion

After conducting all the tests and the robustness checks, the hypotheses revealed the following data:

Hypothesis H1 was confirmed, which means there is a relationship between overchoice and decision paralysis. This indicates that the question posed by the title of this thesis can be responded to affirmatively: yes, overchoice is a reason for decision paralysis, as the concepts defining the two are correlated.

Hypothesis H2 was confirmed. There is a relationship between the predisposition toward maximizing (PTM) and regret anticipation (RA). As confirmed by previous literature as well, the confirmation of this hypothesis indicates that maximizers are more negatively affected by overchoice, and, therefore, feel the repercussions of decision paralysis more harshly than satisficers. Seeing that the sample exhibited the tendency to maximize, it can be surmised that the sample is more susceptible to the negative outcomes of decision paralysis.

Hypothesis H3 was confirmed. There is a relationship between overchoice and emotional affect. This confirms that overchoice is associated with emotional responses. However, since negative affect showed a stronger linear relationship with product overload than positive affect, this strengthens the findings from H1 that overchoice causes decision paralysis. After all, decision paralysis is negatively connoted, and is represented by negative reactions that are caused by negative affect.

Hypothesis H4 was not confirmed. There is no difference in constructs among the male and female consumers. This indicates that men and women similarly perceive the effects of overchoice, react in the same manner, and are both susceptible to maximization tendencies.

Hypothesis H5 was partially confirmed. There is a difference in constructs among the Generation X, Y, and Z consumers. H5 is accepted regarding regret anticipation (RA), inaction and delay (ID), positive affect (PA), and the predisposition toward maximization (PTM), but H5 is rejected regarding product overload (PO), evaluation costs (EC), and negative affect (NA). However, the accuracy of this result is questionable, since the nonparametric nature of the data did not allow for a post-hoc test to exactly determine which generation is different. All of the objectives have been met, as all the constructs mentioned were identified and measured in this research, which allowed for the previously mentioned tests to be conducted.

Four out of five stated hypotheses have been accepted; these results were predicted by previous literature. The only rejected hypothesis, which concerned the differences in gender across the studied concepts, was rejected in the few previous studies that stated it and were cited by us.

We analyzed "strong instances" of overchoice; however, when compiled, these indicated that a high degree of choice does not result in very robust adverse effects.

People of Iasi perceive and associate overchoice with both positive and negative affect. This conclusion is also supported by other studies [6]. It seems that "more choice is better" in terms of quantity of consumption, and that there is no evidence for cultural differences in the studies of overchoice. This conclusion is encouraging when it comes to the applicability of this study.

The results show that there was not a relevant difference between genders. Other studies also came to the same conclusion [8]. Both males and females have similar perceptions in regard to whether the number of choices is overloaded, after realizing interviews about recent apparel purchases. Both negative and positive affect appear in the analysis for both genders, but females alone "presented a shopaholic tendency when faced with a vast assortment". As such, they were more likely to experience the negative outcomes associated with decision paralysis, which were choice deferral, choice delay, and choice postponement. Males declared that, in the case of too much variety, they cannot identify differences in the product attributes. However, females indicated that they prefer a larger assortment, even though they are more exposed to choice overload.

Similarly, a wide assortment of products is needed in order to target smart female shoppers alongside money-saving techniques, as they have a higher need to identify the product that is right and qualitative. A comparison of these results with other in literature [17] can state the importance of generation as a variable for comparison of consumer purchasing experiences, as it can be a source of information on how consumers make decisions.

In literature, there are regrettably no studies that associate the phenomena of choice overload with the cohort of Generation X, and there are very few studies that identifiably measure the concept for the other two generations that are involved in the discussion of this thesis. In this aspect, the findings of this research can fill a gap.

Millennials are likely to be influenced by an overload of information and they do not frequently exhibit the ability to make optimal choices. One of the conclusions of the study is that, regarding age and generational traits, the Generation Y consumers tend to be more confused by overchoice than those that are relatively older.

Generation Z fears there are better options available no matter what they select, which indicates the possibility of decision paralysis [20]. Nevertheless, due to their tech-savviness, they are likely to use more e-commerce platforms, and they are well acquainted with the search filters available online, which could decrease the matter of choice overload, as the study indicates.

Other conclusions, unrelated to the aims, objectives, and hypotheses:

- 1. There are differences in constructs across professional statuses (via Kruskal–Wallis H test, performed with the median method), as described in Table 5: However, product overload and negative affect are perceived in the same way across professions, which indicates that, no matter the status, consumers are still prone to feeling the overwhelmingness and the negative repercussions.
- 2. There are differences in constructs across professional statuses (via Kruskal–Wallis H test, performed with the median method), as described in Table 6: Again, product overload, negative affect, and now also evaluation costs are perceived in the same way regardless of monthly income. However, across income levels, consumers react

differently in terms of their regret anticipation and inaction and delay, and they are differently affected by positive affect and by the tendency to maximize.

- 3. The perception of product overload is strong. The results of first item in the questionnaire, meant to measure the identification of overchoice in the perception of the consumer, are displayed in Figure 2 below. The majority of the respondents (37.4%, 148 respondents) graded the "I notice that there is an increased number of choices when it comes to product variety on any market that I am a consumer in." with 10, the highest possible on the scale.
- 160 40.0% 140 35.0% 30.0% 120 100 25.0% 80 20.0% 60 15.0% 40 10.0% 20 5.0% 0 0.0% 1 3 4 5 6 7 8 9 10 148 Frequency 6 1 1 19 16 45 96 64 0.3% 0.3% 4.8% 4.0% Percentage 1.5% 11.4% 24.2% 16.2% 37.4%
- 4. Negative affect items have low measured perception.

Figure 2. Item 1-Product Overchoice (PO1) responses. Source: findings of this research.

	PO_Med	EC_Med	RA_Med	ID_Med	PA_Med	NA_Med	PTM_Med
Chi-Square	6471	19,081	25,892	33,072	28,152	6054	32,413
df	5	5	5	5	5	5	5
Asymp. Sig.	0.263	0.002	0.000	0.000	0.000	0.301	0.000

Table 5. Differences across professional status.

Grouping variable: professional status; source: findings of this research.

Table 6.	Differences	across	monthl	y income.
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	PO_Med	EC_Med	RA_Med	ID_Med	PA_Med	NA_Med	PTM_Med
Chi-Square	7708	3708	22,146	12,026	16,208	4914	18,412
df	3	3	3	3	3	3	3
Asymp. Sig.	0.052	0.295	0.000	0.007	0.001	0.178	0.000

Grouping variable: net income (in RON); source: findings of this research.

The distribution of all the other items were fairly uniform, and responses were relatively spread out evenly among the 10 possible grades that could be associated to the item. This, however, was not the case for the negative affect items (Figure 3):





In Figure 3, above, the way in which respondents associated grades of 1 to the negative affect items is displayed; these were an overwhelming majority out of the other grades. However, a positive correlation was found between negative affect and product overload, of moderate intensity, despite this deviation from the norm.

Overall, based on all the partial conclusions so far, we firmly believe that this study describes the phenomena in question in a new way, adding to the already existing perspective in research and enhancing it.

5. Conclusions

The following conclusions can be drawn:

- overchoice is perceived by the consumers in the municipality of Iași;
- overchoice is associated with the consequences of decision paralysis, with high evaluation costs, regret anticipation, and inaction and delay, but also with both positive and negative affect;
- the concept of predisposition toward maximization has a great impact on how consumers perceive and are affected by both overchoice and decision paralysis—consumers prone to it are more likely to experience regret, and the generations are different in terms of this construct;
- there is no difference in how different genders perceive the mentioned constructs;
- there are some differences in how Generations X, Y, and Z perceive the mentioned constructs.

The research invites further research, showing the potential for a more in-depth generational study in order to better understand the differences. In the meantime, it discovers the potential for a study investigating the positive aspect of overchoice, better focused on the benefits instead of drawbacks, or the potential for a study focused on the effects of decision paralysis, centered on the reactions and perceptions.

Of course, this research encountered some limitations.

First, it is not possible to verify the reliability of respondents and there is uncertainty regarding the honesty in responses.

In order to acquire big data, representative Facebook groups for Iasi were used. One of the explanations for why the sample size was saturated around the number 400, and why its growth suffered impediments, could be fatigue caused by the COVID-19 pandemic. Despite online presence being tremendously increased due to the COVID-19 crisis (which moved most activities in society online, including the research of most bachelor, master, and doctorate candidates), people have simply grown tired of social media posting, including

calls for participation. Therefore, the questionnaire did not have the engagement it would have had without the crisis happening. As such, the sample might not be representative (females were more likely to respond and Facebook did not reach everyone).

What is also interesting is that responses from the Baby Boomers generation could also have been gathered face-to-face, as those aged over 55 are less tech-savvy but could have been reached in a physical environment. However, the pandemic also prevented this from happening.

Qualitative research would have offered another perspective, but this was impossible. The results are limited geographically, but they offer a good base for further research.

Furthermore, the research suggests possible managerial implications. The findings show that a reduced, but well explained, portfolio could be a competitive advantage. Retailers would benefit from fewer similar products on shelves. The fact that there are no differences between men and women should be kept in mind, as product overload can also have positive effects (people said they are happy/excited/fulfilled/encouraged). Different generations perceive overchoice differently, so the shift from age perspective to generation perspective is welcomed in marketing management.

Author Contributions: Methodology, A.-S.G. and A.M.; formal analysis, A.-S.G. and A.M.; data curation, A.-S.G., A.M., T.R. and L.M.D.; writing—original draft preparation, A.-S.G., A.M. and T.R.; review and editing, A.M. and L.M.D.; handle consultation regarding the paper, A.M. and T.R.; supervision, A.M.; project administration, A.-S.G., A.M. and T.R. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Ethical review and approval were waived for this study, due to the fact that all the subjects were above 18 years old and they have been asked to respond only if they consider that it is correct and safe. We respected their privacy and we did not use their responses elsewhere.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: All the data were collected by the authors and are available on demand.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. Questionnaire sections and items.

	No.	Item	Source
	1	I notice that there is an increased number of choices when it comes to product variety on any market that I am a consumer in.	self-elaboration
product overland	2	There are so many brands to choose from that I feel confused.	
product overload	3	The more I learn about these products, the harder it seems to choose the best.	
perception	4	It is difficult to obtain an overview over the products offered.	[22,26]
	5	With that many options to choose between, I have had a hard time identifying distinguishing product characteristics.	
	6	With that many options to choose between, I find it difficult to compare competing offers.	
	7	It is tough to choose from the different options being offered.	
	8	I cannot afford the time to fully evaluate relevant purchase options.	[22.27]
	9	I concentrate a lot while making shopping choices.	[22,27]
evaluation costs	10	It takes a lot of effort and time to evaluate the alternatives in order to feel comfortable making a choice.	
	11	I often have enough time and make the effort to check all the products that I can find.	self-elaboration
	12	I often manage to check all the products available when making a purchase in my daily life.	self-elaboration

	No.	Item	Source
regret anticipation	13 14 15 16	After I select my option, I am worried to get information after the purchase on superior competing products that could have been a better match for me. When I choose a product, I am curious about what would have happened had I chosen differently. Even after finding a good option, I fear that I am overlooking better products. I worry others would expect me to deliberate more extensively and make a better choice.	[25,28]
inaction and delay	17 18 19 20 21 22	When selecting from an overload of products: I want to avoid making the decision. I prefer to leave the decision to others. I do not like to take responsibility for making the decision. I wait for a long time before starting to think about the decision. I delay making the decision until it is too late. I put off making the decision.	[29]
positive affect	23 24 25 26	I feel fulfilled after checking all the products that I can find. I feel encouraged after checking all the products that I can find. I feel happy after checking all the products that I can find. I feel excited after checking all the products that I can find.	[24]
negative affect	27 28 29 30 31	I feel frustrated after checking all the products that I can find. I feel worried after checking all the products that I can find. I feel tense after checking all the products that I can find. I feel afraid after checking all the products that I can find. I feel panicky after checking all the products that I can find.	[24]
predisposition toward maximizing	32 33 34 35 36 37	 When I am in the car listening to the radio, I often check other stations to see if something better is playing, even if I'm relatively satisfied with what I'm listening to. When I watch TV, I often channel surf, scanning through the available options even while attempting to watch one program. Whenever I'm faced with a choice, I try to imagine what all the other possibilities are, even ones that aren't present at the moment. I often find it difficult to shop for a gift for a friend. I'm a big fan of lists that attempt to rank things (the best movies, the best singers, the best athletes, the best novels, etc.). I often fantasize about living in ways that are quite different from my actual life. 	[25]
demographics	38 39 40 41 42 43	What is your gender? (male/female) What is your age? (18–23/24–39/40–55/55–74/75+) What is your employment status? (student/employed/entrepreneur/liberal profession/unemployed/retired) What is your net income? (\leq 1350 RON/1351–2500 RON/2501–4500 RON/ \geq 4501 RON) Generally, in which proportion do you decide the shopping done in the family? (0–25%/26–50%/51–75%/76–100%) Approximately which percentage of the family shopping is done by you? (0–25%/26–50%/51–75%/76–100%)	self-elaboration

Table A1. Cont.

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