

Transformation of consumer values among representatives of generation Z

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Abstract. The article examines the characteristics of consumer behavior of Generation Z representatives. An analysis of available literary sources has shown that the existing idea of A. Maslow's hierarchy of needs is also undergoing a process of transformation. A number of identified changes are described. Influenced by primary production factors, proposed by K. Marx, and other specific factors of production – entrepreneurial talent and information, the features of rational consumer behavior are considered. It was found that all considered factors of production have a positive impact on consumption, with the exception of information. To confirm the findings empirically, a study was conducted including the opinions of more than a thousand respondents belonging to Generation Z. All conclusions were confirmed. However, one of the issues made it possible to obtain an unexpected result, there must be a special focus on it.

1 Introduction

The important features of the transformation of consumer behavior of Generation Z will be discussed in this paper. Generation Z can be described as a group of people born between 2000 and 2020. The grouping was proposed by scientists N. Howe and W. Strauss [1] within the Generational Theory. The theory is that age groups born and growing up at the same time have the same values.

It is noteworthy that it is Generation Z that differs from other generations in its desire for greening and a greater degree of concern for the environment. In the existing economic formation, Generation Z representatives have formed a trend towards conscious (rational) consumption. This is confirmed by our own observations, analysis of available literary sources and empirical studies conducted on Generation Z representatives, born and growing up in Russia.

Conscious consumption, actively promoted today in the consumer environment, is not just a tribute to fashion. The international community has long been concerned about ensuring models of rational consumption. Being held with sufficient frequency, conferences and experts gatherings in the field of ecology, reveal ever new ecology problems and risk factors that aggravate the already acute situation. This includes rapid population growth, which has led to a shortage of fresh water and an increase in carbon dioxide emissions, a significant increase in industry [2], and a reduction in the amount of resources available for use. There

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is a worldwide increase in demand for paper and paper products, clear wood being as a raw material. The increase in wood consumption led to a depletion of forest resources [3]. Countries such as India, Indonesia, Egypt, Pakistan, and China are faced with an acute shortage of wood [4].

Based on the principles of the law of supply and demand, the price of scarce raw materials is constantly increasing. Increasing prices for raw material sources is an economic incentive to find sustainable development trajectories for the pulp and paper industry. In addition, increasing prices accelerate a mechanism such as inflation, which is a key issue on the agenda of many countries: Turkey [5], Great Britain [6], USA [7].

The huge number of negative consequences associated with cold-blooded consumption and craving for luxury goods in the era of dominance of millennials [8] and baby boomers [9] requires society to reconsider existing models of behavior with a shift towards rationality. Generation Z's strong sense of pragmatism has hit luxury producers hard, but at a global level, it's about making consumption more rational.

The purpose of the article is to identify specific changes in the consumer behavior of Generation Z representatives, who are responsible for the formation and implementation of models of rational consumption.

2 Research Methods

To write the article different methods were used: study and analysis of scientific literature; conducting in-depth interviews with Generation Z representatives; conducting surveys. Three stages are involved to write the article.

The first stage was to form of the theoretical basis of the article. The article is based on the Strauss–Howe generational theory, devised by William Strauss and Neil Howe. This theory is based on the fact that a cohort of people born and growing up at the same time have similar terminal values. An analysis of the current situation requires reconsidering Maslow's theory of motivation known as the 'Need hierarchy theory'. It shows that there is a shift in priorities in the grouping of needs, which was formed back in 1943. The theory of consumer behavior, formulated by Alfred Marshall, studies the peculiarities of demand formation depending on the preferences of individual consumers. It was concluded that Generation Z radically influenced the change in consumption patterns, shifting the emphasis in favor of rationality.

An analysis of the theory of reasoned action developed by Martin Fishbein and Icek Ajzen showed that when viewed through the prism of the theory of generations, an interesting conclusion can be drawn. The theory of reasoned action, which describes the features of rational decision-making by consumers, describes exactly Generation Z. The behavior model of consumer Z differs from previous generations of consumer because it is based on the transformation of the individual's instrumental values. Hawkins Stern's impulse buying theory works less for Generation Z representatives, as more focus is placed on rational decision making.

The second stage was an analysis of existing publications in Russian and foreign sources, where consumption features were identified in relation to production factors. The classification proposed by K. Marx was adopted as a basis: labor, land and capital. Additionally, factors of production such as entrepreneurial talent and information were considered. The second stage was based on an argument confirming the transformation of the values of Generation Z representatives in relation to the consumption characteristics of the factors indicated above.

The third stage of the article was to confirm the findings with empirical data. The results of a survey of more than a thousand respondents belonging to Generation Z were presented. The survey addressed the issues of value orientations of Generation Z, which were deformed

in comparison with previous generations. Also, as part of this stage, an in-depth interview was conducted with ten Generation Z representatives, who confirmed all the previously obtained conclusions.

As a general conclusion for all three stages of work, a list of motivational factors was formed, which, in the author's opinion, significantly influenced the transformation of the values of Generation Z representatives and ensured the formation of models of their rational consumption.

3 The Main Results of the Study

Motivational factors influencing the provision of rational consumption models are considered through the prism of four factors of production, three (labor, land and capital) of which were proposed for use by K. Marx [10]. The fourth rather specific factor of production is entrepreneurial talent. And one more factor must be considered in the context of Generation Z's changing consumption. In the economic environment, these five factors are usually considered together.

The basis for determining motivational factors is A. Maslow's theory of motivation. This theory is about building hierarchical positions of values that are dominant for the individual. The influence of the theory of generations on the entire fundamental basis of the economic world order gives reason to believe that changes have begun to occur in the traditional pyramid of needs, which will become more and more noticeable in the future. Thus, for generation Z, safety issues become on the same level as physiological needs. These include issues of energy security [11], digital security [12], financial security [13], etc. Social needs are also undergoing changes. The need to belong to society can be reduced to communicating with those people who flaunt their virtual personality, which often has nothing in common with the real one. The period of marriage and childbirth is shifting. For example, the average mother childbearing age is 28 years and 10 months. It is worth noting that the mother of one of the authors of this article gave birth to her third (!) child at 29 years old. In the medical community, such a mother was called "old-time mother". Today, the early representatives of Generation Z have already entered the reproductive age phase, but there are not yet many cases of child births to draw a conclusion. In surveys conducted, Generation Z representatives note that they do not plan to have children until they reached the age of 30 years old. A common argument is "first you need to live for yourself." The phrase "living for yourself" often includes the implementation of large-scale projects dedicated to issues of sustainable development, reducing the 'carbon footprint' on the planet, etc. Aesthetic needs are moving lower in the pyramid. A survey of students showed that every third would like to connect their lives with various types of art: cinema, painting, architecture, design, theater, etc.

The need for recognition becomes more important. For more than 70% of Generation Z representatives, salary will not be a deterrent if an employer does not recognize or does not fully recognize their merits. In general, Generation Z representatives care less about money than previous generations. The financial behavior of Generation Z was influenced by the global crises of 2008, 2020, 2022. Based on the theory of generations, a theory of consumer behavior was formulated in the scientific literature, it explains financial anomalies occurring among young investors [14]. Attempts to segment investors into generational cohorts are rare [15], but those works that examined the connection between the theory of generations and the characteristics of investment behavior prove the effectiveness of such methodological cooperation in analysis. Self-actualization is more important for Generation Z than for all previous generations. This is their main driver.

It is impossible to conduct a comparative analysis of the significance of a particular need in A. Maslow's pyramid for different generational groups, since such studies have not been conducted. However, it is obvious that roles of various needs in the structure of the previously

proposed hierarchy have changed. Some needs fade into the background, others begin to dominate.

An analysis of the transformation of consumer behavior models was carried out on the basis of primary (proposed by K. Marx: labor, land and capital) factors of production and specific ones (entrepreneurial abilities and information)

The first factor is “labor”. In the analysis considered were such components as: 1) features of the education received, 2) balance between work and personal life, 3) working conditions and regime, and 4) focus on professional development.

- features of the education received. There is a shift in emphasis towards secondary education. Higher education is becoming a non-priority. This transformation of the consumption model is rather negative. Firstly, by receiving higher education, a person learns to think, building critical thinking, comprehending the global agenda, etc. Secondly, secondary education does not provide the wide opportunities for student mobility projects that higher education provides;

- balance between work and personal life. There is a transformation of labor values. There is a refusal to go to work outside of working hours for an additional (increased) salary. From the point of view of consumption, this situation will negatively affect the rational approach, since leisure time is usually associated with some additional expenses for rest, personal care, etc., which would not happen during working hours;

- working conditions and regime. There is a tendency for employees to go online. This has a positive impact as transport costs are reduced. The positive thing is that personal transport is used less, which is more responsible for changing the global climate agenda;

- focus on professional development. The greater desire of Z employees to keep searching for new technologies has a positive impact on the formation of a rational consumption model. Concern with issues of sustainable development leads to the fact that the range to search for new technologies is narrowed solely to environmentally friendly ones. Thus, in conditions of increasing paper consumption, there is a refusal to use paper bleaching technology with elemental chlorine - a transition to chlorine dioxide and the addition of an oxygen stage before bleaching, which helps reduce the level of wastewater pollution [16].

The second factor is “earth”. Considered were such elements as 1) mineral deposits, 2) forests and 3) energy resources. All elements have a positive impact on ensuring rational consumption models:

- the first element implies a positive transformation of the consumption model, since it is associated with the level of technological development valid at the time of analysis. Today's mining technologies are more environmentally friendly by default. The further development of scientific and technological progress will strengthen such trends;

- forests. Generation Z representatives take an active part in various charity events to clean up forests and plant new seedlings. The culture of behavior in forests and park areas is changing, a careful attitude is noted;

- energetic resources. Generation Z representatives demonstrate a pragmatic approach to the consumption of energy resources and participate in the projects to create alternative types of energy and develop energy-saving technologies.

The third factor of production is capital. Here considered were such elements as 1) cash, 2) securities, 3) electronic money and cryptocurrencies, 4) real estate, cars and equipment:

- cash. It is noted that Generation Z representatives part with money more easily than their parents. The blogging trend has created the idea that money (even big ones) can be earned easily and quickly. Young employees have higher salary expectations than their parents. This is rather a negative aspect of the formation of a rational consumption model, since the ability to part with money easily can push one to make thoughtless purchases. However, it is positive that the majority of Z consumers spend money rationally;

- securities. Experts note that Generation Z representatives do not have a tendency to invest free funds in securities. They will receive at least a third less income from placements in securities than their parents;

- electronic money and cryptocurrencies. If there are free funds, there may be such an alternative. It has a positive impact, considering that if such a payment instrument is to be brought into legal circulation, legally speaking, the emission of paper money will be reduced, which is positive from the point of view of consumption of raw materials, epidemiological safety, etc.;

- real estate, cars and equipment. A new aspect of consumption is collaborative consumption. Generation Z representatives prefer renting instead of purchasing luxury items. This trend is also strengthened with the new capabilities of sharing economy platforms. Collaborative consumption involves the use of both intangible (music, car rides, education) and tangible assets (real estate, clothing, household items). It is definitely a positive influence.

The specific factor “entrepreneurial talent” was considered through the prism of such elements as: 1) focus on sustainable development of the enterprise, 2) attitude towards brands; 3) attitude towards innovation:

- focus on sustainable development of the enterprise. Corporate social entrepreneurship has its role increased, this add-in is integrated into the HR brand of the enterprise;

- attitude towards brands. Indifference to luxury brands. “Comfort is more pleasant than show-off”;

- attitude towards innovation. Generation Z representatives are open to innovation, implement a large number of startups and make many attempts to create a unique product at the intersection of technologies.

All three elements point to positive trends in the formation of rational consumption patterns.

Considered was one more factor such as information. The analysis was carried out through such elements as: 1) production, 2) perception and 3) hygiene.

- production of information. Uncontrolled growth of information. Storing such volumes causes significant harm to the environment;

- perception. Clip thinking. They gain knowledge from video blogs, which are opinion leaders and can form incorrect consumption patterns through shocking behavior, which is one of the strategies for ensuring a large number of subscribers;

- hygiene. Most of the information on the Internet is not structured, and some sources does not always have positive content.

The three analyzed elements of information have a greater negative impact on ensuring rational consumption models.

In general, we can conclude that the transformation of the consumption characteristics of all considered factors of production (with the exception of information) has a positive impact on ensuring the formation of rational consumption models.

The transformation of consumer patterns is based on the following incentives, which have a significant impact on Generation Z representatives:

- the opportunity to learn a new way of consumption;

- desire for diversity [17];

- cost savings;

- concern for sustainable development;

- increasing the life cycle of each luxury item [18].

The analysis of the results obtained confirmed that Generation Z representatives have a significantly lower number of spontaneous purchases than their parents.

Some limitations of this study should be noted. The publications available today, confirming that such values as concern for sustainable development and rational consumption

models are terminal values of generation Z representatives, are descriptive, not evidential. The reason for this, among others, is that the youngest member of Generation Z is now between 3 and 5 years old, while the earliest members are at the age of 23-25 years. They have not yet had time to make a significant contribution to the formation of the entrepreneurial environment, they have not demonstrated in action the sustainable technologies that they will create, develop and apply in their practical and professional activities. An analysis of the available literature showed the existence of some contradictions in points of view, empirical assessments and methodology [19].

For this reason, it was decided to conduct our own research, which involved respondents from different regions of Russia. At the time of the survey the youngest of Generation Z was 10 years old and the oldest was 21 years old. The empirical data was collected from September 10, 2022 to October 10, 2022. The study was conducted with students in various educational organizations of general, secondary and higher education in Russia.

The survey was created with «Google Forms». The link was distributed by sending to chats, emails, electronic document management systems, etc. In total, responses from 1053 respondents were used, including 537 men (51%) and 516 women (49%). To conduct a comparative analysis, Generation Y respondents were interviewed in the same proportion (in total, 167 people). The key issue about formation of rational consumption models demonstrated that Generation Z representatives are more interested in issues of sustainable development than Generation Y representatives (Table 1).

Table 1. Attitudes towards sustainable development issues among representatives of Generations Y and Z.

| Attitude to environmental issues | Distribution of respondents' answers, % | |
|---|---|-------|
| | Y | Z |
| Men, including: | 100,0 | 100,0 |
| - I think it's important | 65,1 | 79,1 |
| - I think that there is too much attention to it | 32,6 | 17,3 |
| - I consider it unimportant | 2,3 | 3,6 |
| Women, including: | 100,0 | 100,0 |
| - I think it's important | 80,8 | 90,2 |
| - I think that there is too much attention to it | 19,2 | 6,8 |
| - I consider it unimportant | 0,0 | 3,0 |
| All representatives of the generation, including: | 100,0 | 100,0 |
| - I think it's important | 76,7 | 85,2 |
| - I think that there is too much attention to it | 22,7 | 11,5 |
| - I consider it unimportant | 0,6 | 3,3 |

83.5% of respondents are ready to participate in teams to implement environmentally significant projects. If we consider separately by gender of respondents, then women (88%) are ready to take care of the environment by almost 10% more than men (80.8%).

Other answers confirm that Generation Z representatives are more concerned for the environment (than Y). However, one issue requires additional analysis. With all the information available about the environmental friendliness of Generation Z, they are not ready (especially men) to bring dishes from home to replace the plastic ones they have at work (Table 2).

Table 2. Attitudes towards sustainable development issues among representatives of Generations Y and Z.

| Willingness to bring their own dishes from home | Distribution of respondents' answers, % | |
|---|---|-------|
| | Y | Z |
| All representatives of the generation, including: | 100,0 | 100,0 |
| - Yes, it's cheaper that way | 46,7 | 28,7 |
| - Yes, it's inconvenient to eat from plastic | 10,0 | 10,6 |
| - No, it's uncomfortable for me | 10,0 | 29,4 |
| - Yes, because this is care for the environment | 33,3 | 31,2 |

The obtained result requires additional research, since it comes into dissonance with other answers.

To substantiate the reproducibility of the results obtained, it would be useful to include technologies used in neuroeconomics to prove that Generation Z representatives have rational consumer behavior when making purchasing decisions.

4 Conclusions

The purpose of this study was to empirically confirm the ongoing transformation processes of formation of rational consumption models among Generation Z representatives.

The study did not have a sufficiently representative sample of Generation Y. The focus group was Generation Z, for this reason the low representation of the older generation can be neglected. However, to make a comparative quantitative analysis, it is necessary to apply a stratified approach to the sample of respondents.

The study allows us to draw the following conclusions:

1. The ongoing transformation processes have a positive impact on formation of rational consumption models among Generation Z representatives.
2. Generation Z representatives are more concerned about environmental issues and sustainable development than their parents (Generation Y representatives).
3. Changes connected with the consumption of most of the factors considered have a tendency towards rationalization. The exception was such a factor as information. Consumer behavior in relation to information does not contribute to the formation of rational consumption models.
4. Changes in the traditional Maslow's hierarchy (or pyramid) of needs are noted. It becomes noticeable that the importance and significance of needs are changing; in some cases, a change in level in the hierarchy is observed.

References

1. N. Howe, *Generations: The History of America's Future, 1584 to 2069*, **541** (1991)
2. F. Amalina, S. Krishnan, A. W. Zularisam, M. Nasrullah, Biochar and sustainable environmental development towards adsorptive removal of pollutants: Modern advancements and future insight. *Process Safety and Environmental Protection*, **173(13)** (2023)

3. N. K. Bhardwaj, D. Kaur, S. Chaudhry, M. Sharma, S. Arya, Approaches for converting sugarcane trash, a promising agro residue, into pulp and paper using soda pulping and elemental chlorine-free bleaching. *Journal of Cleaner Production*, **217(8)** (2019)
4. R. Hosseinpour, A. Latibari, P. Fatehi, Hydrogen Peroxide Bleaching of Canola Straw Chemimechanical Pulp. *BioResources*, **9** (2014)
5. D. Nebioğlu, B. Soybilgen, Inflation aversion in Turkey. *Economic Systems*, **24** (2023)
6. R. Ahmed, X. H. Chen, Ch. Kumpamool, D. T. K. Nguyen, Inflation, oil prices, and economic activity in recent crisis: Evidence from the UK. *Energy Economics*, **126(15)** (2023)
7. E. M. Diaz, J. Cunado, F. Perez de Gracia, Commodity price shocks, supply chain disruptions and U.S. inflation. *Finance Research Letters*, **13** (2023)
8. S. Khan, A. I. Fazili, I. Bashir, Constructing generational identity through counterfeit luxury consumption. *Journal of Product & Brand Management*, **31(3)**, 22 (2022)
9. S. M. Noble, Ch. D. Schewe, Cohort segmentation: An exploration of its validity. *Journal of Business Research*, **56(12)**, 8 (2003)
10. K. Marx, *Das Kapital. Kritik der politischen Oekonomie*, **984** (1867)
11. C. T. Tugcu, A. N. Menegaki, The impact of renewable energy generation on energy security: Evidence from the G7 countries. *Gondwana Research*, **125**, 23 (2024)
12. A. Mahmud, J. B. Sweety, A. Hossain, M. H. Husin, Is the digital security act 2018 sufficient to avoid cyberbullying in Bangladesh? A quantitative study on young women from generation-z of Dhaka city. *Computers in Human Behavior Reports*, **10**, 32 (2023)
13. X. Xie, M. Osińska, M. Szczepaniak, Do young generations save for retirement? Ensuring financial security of Gen Z and Gen Y. *Journal of Policy Modeling*, **45(3)**, 24 (2023)
14. H. Altaf, A. Jan, Generational theory of behavioral biases in investment behavior. *Borsa Istanbul Review*, **23(4)**, 10 (2023)
15. N. D. Philippas, C. Avdoulas, Financial literacy and financial well-being among generation-Z university students: Evidence from Greece. *The European Journal of Finance*, **26 (4–5)**, 21 (2020)
16. D. Kaur, N. K. Bhardwaj, R. K. Lohchab, A study on pulping of rice straw and impact of incorporation of chlorine dioxide during bleaching on pulp properties and effluents characteristics. *Journal of Cleaner Production*, **170**, 8 (2018)
17. N. L. Kim, B. E. Jin, Why buy new when one can share? Exploring collaborative consumption motivations for consumer goods. *International Journal of consumer studies*, **44(2)**, 12 (2019)
18. E. Pantano, N. Stylos, The Cinderella moment: Exploring consumers' motivations to engage with renting as collaborative luxury consumption mode. *Psychology and Marketing*, **37(5)**, 13 (2020)