# USING HIGH-TECH TOOLS FOR CONSUMER BUYING DECISIONS OF FMCG

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**Purpose:** The main aim of this paper is to explore consumer decisions and emotions during shopping at the self-service store with fast-moving consumer goods (FMCG).

**Design/methodology/approach**: The subject of the study is to assess the impact of emotions during the choice-making process on consumers' buying decisions. The respondents are citizens of the West Pomeranian region, Poland. The survey was conducted using state-of-the-art data acquisition technologies, i.e., Virtual Reality and EEG. An interview was also used as a complementary form. The research was both qualitative and quantitative, with a research sample of 34 respondents and took place in the virtual world. The researchers used primary data. The results presented here are part of a broader research project that used a triangulation of research methods to allow a deeper analysis of the conscious and unconscious aspects of the subjects.

**Findings:** The research provided independent data on consumer emotions. The authors identified 4 groups of emotions that appeared during the selection of a product and were highly differentiated and strongly dependent on such characteristics as consumer type and gender. It has also been noticed that the longer a product is held, the lower emotional "sleepiness'.

**Research limitations/implications**: One of the main limitations is the data collection process, which is relatively expensive, so the sample size is limited. The results obtained can be a signpost for a researcher who would like to use this new technology for further research.

**Practical implications:** The results obtained can be used by shop managers in planning the sales activities or shop space to help the customer decide.

**Originality/value:** In the research was used an innovative combination of virtual reality (VR) equipment and an electroencephalogram (EEG). To the best of the authors' knowledge, the results of a study from the FMCG industry using both devices simultaneously have never been published.

**Keywords:** consumer behaviour, virtual reality, new technology, EEG.

**Category of the paper:** Research paper.

## 1. Introduction

The starting point for analysing buying decisions is consumer attitudes (Alalwan et al., 2017). The decision-making process itself is a multi-stage one, and at different levels, there may be returns of consumer activity, e.g., withdrawal, or abandonment of buying. Therefore, the difficulty in predicting consumer buying decisions is due to both the factors shaping consumer attitudes, the environment, and the complexity of the decision-making stages. Explaining a consumer's behaviour before making a buying decision, or the motives for choice is a complex process (Khan et al., 2022). According to a study conducted at the University of Amsterdam, simple decisions are made with thought and complex decisions are made intuitively (Haslam, 2007). These studies have not only shown that too many options disrupt the decision-making process, but also disruption (e.g., obstruction), which influences more frequent wrong decisions. When complex decisions are made, even if they are well thought out, post-purchase satisfaction can be low. This is a result of the dissonance between the consumer's awareness of the various options, and the choice of a particular product. The choice becomes a trade-off, as it is not possible to have all options (Dooley, 2015). Also, increasing competition in both traditional and online sales areas is increasing the need to better understand what buying decisions consumers make and what they ultimately leave in their shopping carts. The increased interest in analysing consumer behaviour is also due to technological advances and related changes in consumer activity (Niu et al., 2021).

In the literature, there are two types of factors external and internal (Janoś-Kresło, 2012). External can be divided into economic and non-economic (Brzozowska-Woś, 2010, pp. 31-60). The most important external factors influencing buying decisions include advertising, price attractiveness, sales promotions, display, but also the opinion of another customer or advice - suggestion of sales staff (Kuś, 2011). Selection criteria can be divided into those related to cost, reputation, convenience, and presentation. In the case of online shopping, convenience, i.e. the method and form of payment, as well as delivery terms, is of importance (Saha et al., 2020).

The internal factors are those related to the consumer's person, e.g., motivation, personality, inclinations, and skills. Internal elements are highly individual and specific to each consumer. This individuality makes it impossible to predict consumer behaviour a hundred percent. Consumer behaviour refers to the mental and emotional process and activity of people, who buy and use goods and services to satisfy their needs.

Emotions are an internal factor strongly influencing consumer buying decisions, according to researchers they are more important than hard facts (Pawle, Cooper, 2006). Despite changing trends and growing consumer awareness, more than 80% of purchasing decisions are still made emotionally and irrationally (Rahmanian, 2013). Additionally, consumers do not make buying decisions in the context of maximizing utility (Antonides, 1998). The emotionality of the

decision is emphasized by psychologists, saying that buying decisions are based on feelings. They influence all interactions related to comparing products, checking, and purchasing (Cacioppo et al., 2016). To meet these attitudes, creating a positive consumer experience with a product or brand is increasingly becoming a popular activity of conscious companies (Dimitrakopoulos et al., 2020).

Emotionally driven purchases are most common in the FMCG product group (Matysik-Pejas, Szafrańska, 2011). In the case of these products, they are perishable products, sold mainly in retail stores, with a short lifespan, which consumers routinely buy and use right away (Gani, 2017). Nowadays strong emotions are also connected with sustainable behaviour during the purchasing of FMCG (Biercewicz et al., 2022).

An important element shaping the direction of research on consumer behaviour is new technologies, the rapid development of which has opened up opportunities to study consumer behaviour. Modern tools make it possible to record the movements of consumers and also to see what emotions accompany their buying decisions. This allows you to accurately analyse the decision-making process and indicate what internal and external factors may have influenced the various stages of the process. Data collection is carried out through modern tools such as the Virtual Reality (Moghaddasi et al., 2021), EEG (electroencephalography) (Xu et al., 2019), eye tracking (Meißner et al., 2019), facial expression (Bouzakraoui et al., 2017), HR (heart rate) (Dulleck et al., 2014), GSR (galvanic skin response) (Vecchiato et al., 2010). These devices make it possible not only to objectively record data on customer behaviour but also to determine behaviour patterns. The latter is particularly important in improving user experience. In addition, these tools can help plan store space and choose the communication tools that best suit the company's customer profile.

As indicated earlier, measuring emotions and decisions influenced by emotions is already possible. Such research is carried out, for example, within the framework of sensory marketing, or consumer experience. They constantly seek new experiences, and emotions like educational, entertainment, aesthetic, and escapist experiences.

One such tool is Virtual Reality (VR). VR is a technology that allows participants to spend time in immersive virtual environments (Han, Tom Dieck, 2019; Słupińska et al., 2021) and interact with content in a world that offers the shelter and illusion of an alternate reality. From a technological perspective, these are promising developments, and previous research examining consumer experiences often reveals that escaping VR experiences increase enjoyment and behavioural intentions (Loureiro et al., 2021).

Since each survey technique has its limitations it makes sense to combine different tools, in this case, modern ones, to obtain the most reliable results (Davidson, 2004). The authors also came to this conclusion, and this became the reason for researching consumer behaviour using four different survey techniques: CAWI, face-to-face in-depth interviews, an experiment using EEG tools, and eye tracking conducted in a virtual store, treated as the natural environment of the study.

In the research part of the article, the authors presented the theoretical assumptions of the problem under analysis and then discussed current research, in which data were collected on emotions during product choices i.e., product holding time. A research scheme was adopted, which formed the basis for the conducted research (see Figure 1). The analyses presented here exemplify the application of this scheme to consumer choice decisions. Included are selected results of quantitative research, qualitative research, and analysis that were achieved through the use of the VR environment and the EEG tool. In the last part, the authors presented plans related to the continuation of ongoing research in the analysed area.

## 2. Methods

The research aim of this study is to analyse emotions in consumers' shopping decisions in a virtual reality self-service store. The described pilot study aimed to gather primary data and analyse them following the research objectives to conclude.

The following research questions were posed:

1.  What emotions were present in consumers during the decision-making process?
2.  How emotions dominated consumers after putting products in shopping carts?

The authors assumed that decision-making took place while reaching for and holding the product in their hands. The study also assumed an independent variable in the form of an available assortment consisting of the following products: fruit, vegetables, dairy, fish, fast food, baked goods, drinks, and meat.

On the other hand, the following were taken as dependent variables: meantime, Arousal, and Valence index. The type of research was a qualitative study method, where the data was collected from 34 respondents.

Research tools: the study was conducted with the use of an EEG apparatus (electroencephalography) and VR (Virtual Reality).

The authors used the following research method: descriptive statistics: mean, Pearson correlation coefficient, Index of Arousal, and Valence.

### 2.1. Description of the study

The research procedure applied in the study was presented in Figure 1. The sample (N = 34) was selected by place of residence. The research problem was then formulated, which is presented at the beginning of Chapter 2.
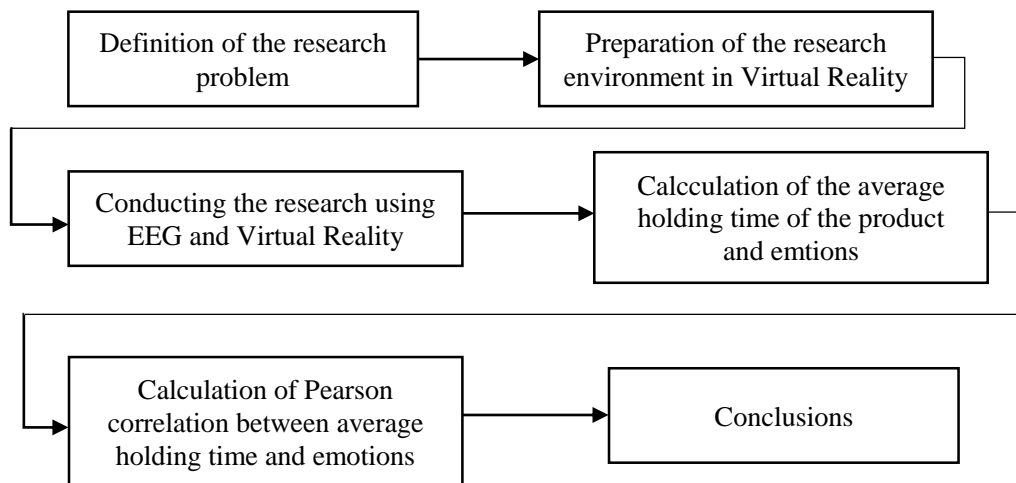
**Figure 1.** The research scheme.

Source: own collaboration.

An off-the-shelf Enzone supermarket store was used (Unity Supermarket, 2017), which was customised for the study and a virtual reality (VR) environment in the Unity engine. The environment was planned to credibly replicate a traditional FMCG shopping destination. By which is meant the creation of situations that mirrored those encountered by the subjects in the real world. Before the study, participants were informed about the study and signed a consent for voluntary participation (the studio has approval from the ethics committee to conduct this type of research). In addition, an interview was conducted, using a survey questionnaire, based on which consumers were assigned to one of four types of consumers (Kuś, 2011):

1. Considerate - individuals who shop in a planned manner.
2. Non-routine - individuals who rarely shop and for whom there is no automatism in their shopping process.
3. Habitual - individuals who have their habits and cannot imagine life without those products.
4. Impulsive - individuals who assess a product by its appearance or declare that they feel like buying something.

The percentage of each type of consumer is presented in Table 1.

**Table 1.**

*Consumer type by gender*

|  | Type of consumer | | | |
|---|---|---|---|---|
|  | **Considerate** | **Non-routine** | **Habitual** | **Impulsive** |
| The number of women | 26% | 6% | 17% | 9% |
| The number of men | 12% | 9% | 15% | 6% |

Source: own collaboration.

The participant in the study then watched a short instructional video, which showed how to move around, how to pick-up items, and the purpose of the simulation - to do everyday shopping. After watching the instructional video, and before the actual survey, participants had the opportunity to try moving around in the virtual environment. This made it possible to get used to the disruption of the study (Li et al., 2020).

The procedure to prepare the respondent for the study was to put on a cap (Enobio 20), connect electrodes to the scalp, and put on a VR device (HTC Vive Pro Eye).

A cap with 20 electrodes placed at the following points P7, P4, Cz, Pz, P3, P8, O1, O2, T8, F8, C4, F4, Fp2, Fz, C3, Fp1, T7, F7, Fpz was used to record the test session. The channels were placed according to the 10-20 system, an international EEG electrode placement system. The electrodes required wet placement for proper conductivity. To verify that the EEG electrodes were in good contact with the scalp, the impedance value was measured using Neuroelectrics® Instrument Controller (NIC2) software. The sampling frequency was 500 Hz.

Then, respondents were given 20 minutes (Beniczky, Schomer, 2020) to do their daily shopping in the virtual world. Setting a time limit was related to the respondents' well-being and health. The store consisted of 3 aisles (see Figure 2). The first aisle was located directly at the entrance to the store. Islands were placed in the middle of the aisle, where, among other things, products subject to the promotional campaign were displayed. In the second and third alleys, in addition to moving independent characters, boards were placed to block the passage (wet floor). The entire layout of the store is shown in Figure 2.
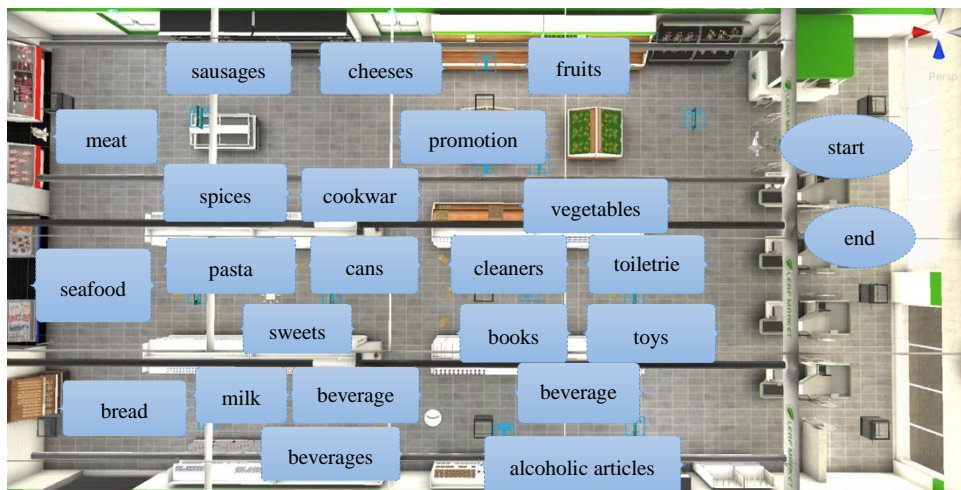


**Figure 2.** The layout of products in the virtual store.
Source: own collaboration.

Before entering the store in VR, respondents were shown a black screen for 60 seconds, the purpose of which was to mute the emotions and brain waves of study participants. All actions performed by the respondent were recorded into an excel file and recorded using OBStudio software. The collected data were used for further analysis.

**2.2. Measures**

In the first step, products were assigned to the following categories: fruits, vegetables, dairy, fish, fast food, baked goods, drinks, and meat. Then, using an event file that contained information about each product taken in hand, the time the product was held, and the decision made by putting the product in the shopping cart. As a result, based on this information, each product was assigned to the corresponding product category. In turn, the amount of time the product was held in the respondent's hands helped determine purchasing decisions. Emotion level indices were then calculated according to the Arousal and Valence indices, which are shown in Table 2. These indices were chosen for analysis because they can be used to study consumer decisions in simulation (Moses et al., 2018; Szymkowiak et al., 2020).

**Table 2.**
*Description of the indices used in the test*

| Name of the Index | Formula | Counting method |
|---|---|---|
| Arousal [75] | (F3_beta3 + F4_beta3) / (F3_alpha2 + F4_alpha2) | Registration value from electrodes F3 and F4 |
| Valence [75] | (F4_alpha2 / F4_beta3) - (F3_alpha2 / F3_beta3) | Registration value from electrodes F3 and F4 |

Source: own collaboration.

For further analysis, Pearson's correlation coefficient between the average holding time of the selected product and emotion was used, taking into account characteristics such as consumer type and gender.

# 3. Results

All data were analysed using Matlab R2019a. The EEG signal analysis started with filtering the bandwidth removing the power network disturbances, i.e., frequencies above 50 Hz. Besides, the signal was detrended and filtered using the Fieldtrip library. The EEG spectral signal was then analysed using a Morse wave, which calculated an average peak frequency of half a second in a frame (Lilly, Olhede, 2010, 2012; Wachowiak et al., 2018). However, to calculate the alpha and beta frequencies, the signal has been divided into appropriate bands (Tsipouras, 2019) – alpha2 (7-13 Hz) and beta3 (13-25 Hz).

In the presented study, the indices were used to determine the emotions accompanying respondents while holding a particular product. In this regard, four groups were distinguished - delighted emotions (positive value of Arousal and Valence indices), tense emotions (positive value of Arousal index and negative value of Valence index), disappointed emotions (negative value of Arousal and Valence indices), and sleepy emotions (negative value of Arousal index and positive value of Valence index).

The calculated holding time of the product and the waves responsible for emotions were recorded from the moment the product was taken in hand until it was put back in the basket. The results obtained are shown in table 3.

**Table 3.**
*Product holding time and emotions*

|  | Fruits | Vegetables | Dairy | Fish | Fast Food | Baked goods | Drinks | Meat |
|---|---|---|---|---|---|---|---|---|
| **Mean time [s]** | 3.7116 | 3.4299 | 4.0085 | 4.3535 | 4.5171 | 4.5893 | 4.4508 | 4.6240 |
| **Arousal** | -0.1634 | -0.1216 | 0.0232 | 0.2049 | 0.1616 | 0.0607 | -0.0932 | 0.5603 |
| **Valence** | -0.0445 | 0.0008 | -0.0079 | -0.0389 | 0.0021 | -0.0925 | 0.0182 | 0.0083 |

Source: own collaboration.

The researchers obtained the longest average holding time for products in the meat category - 4.62 seconds. In contrast, the shortest for products in the fruits category - was 3.71 seconds. Positive emotions were obtained for products from the fast food and meat categories. Negative emotions were observed for products from the fruits category.

The object of further analysis was to divide the respondents by consumer type (considerate, non-routine, habitual, impulsive) and gender (female, male). This allowed us to look specifically at the behaviour of different types of consumers, based on the results related to the average time of holding products (Table 4) and emotions (Table A1). If a field in the table shows a '-', it means that a product in that category was not selected. The fewest products were selected by women shopping non-routinely.

**Table 4.**
*Average product holding time by consumer type and gender*

| Type | Gender | Mean time | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
|  |  | Fruits | Vegetables | Dairy | Fish | Fast Food | Baked goods | Drinks | Meat |
| Considerate | Women | 2.9235 | 4.3827 | 3.8127 | 5.6097 | 3.4249 | 2.5453 | 4.0726 | 2.5226 |
|  | Men | 4.1435 | 2.4256 | 4.6977 | 4.4923 | 5.2150 | 6.2625 | 4.6525 | 4.2050 |
| Non-routine | Women | 3.3770 | 1.9827 | 2.7956 | - | - | 2.4260 | 5.5309 | - |
|  | Men | 3.8282 | 3.7408 | 4.0787 | - | 9.3460 | 6.2970 | - | 9.2210 |
| Habitual | Women | 4.2947 | 2.5657 | 3.9516 | 4.7450 | 3.0463 | 3.9762 | 5.9191 | 2.5475 |
|  | Men | 3.6716 | 4.7787 | 4.7304 | 3.4904 | 2.7455 | 7.0737 | 4.3502 | - |
| Impulsive | Women | 3.0015 | 4.1333 | 2.6827 | 3.8637 | 2.1910 | 2.4940 | 1.4880 | - |
|  | Men | 4.4528 | - | 5.3184 | 3.9200 | 5.6510 | 5.6395 | 5.1425 | - |

Source: own collaboration.

Table 4 shows the results related to the average holding time for a product. Non-routine, male consumers took the longest time to decide on the fast food and meat categories. The time was 9.35 seconds and 9.22 seconds, respectively.

When analysing the shortest decision-making times, it is important to pay attention to consumers of the impulsive type, women, and non-routine type, women.

When analysing by product category, the shortest decisions were made toward drinks and vegetables. The results obtained show that only women of the 'impulsive consumer' type (1.49 seconds) and 'non-routine consumer' type (1.98 seconds) made such choices.

To identify the behaviour of the different categories of consumers, it is necessary to analyse the Arousal and Valence indexes in Cartesian order. The results for the emotions of different types of consumers by gender are presented in Table A1. The most delighted emotions in the 8 subgroups studied were obtained for the fast food and meat product categories. Interesting results were obtained among, considerate, female and non-routine, male customers. In this case, the analysis showed that the emotion accompanying their decision-making was tense.

The final result was to determine the relationship between the time of holding the product and the emotions associated with it, by gender and consumer type (Table 5). For this purpose, the Pearson correlation coefficient was calculated.

A strong and positive correlation was observed between the average time of holding a product and emotion for a group of products in the vegetable category for men who are a habitual consumer type (Arousal – r = 0.87; Valence – r = 0.93). This means that if we look at vegetables, for example, in terms of their freshness, there is a high probability that there will be no emotion associated with the choice, which consequently will not allow the researchers to determine whether the product will end up in the shopping cart.

**Table 5.**
*Relationship between average product holding time and emotions*

| Type | Gender | Index | Mean time | | | | | |
|------|--------|-------|--------|-----------|-------|------|-----------|--------|
| | | | **Fruits** | **Vegetables** | **Dairy** | **Fish** | **Fast Food** | **Drinks** |
| **Considerate** | **Women** | **Arousal** | -0.6787 | 0.2871 | 0.4896 | - | -0.0312 | -0.9953 |
| | | **Valence** | 0.4985 | 0.1492 | 0.8347 | 0.7702 | - | 0.9977 |
| | **Men** | **Arousal** | -0.4519 | - | - | - | - | - |
| | | **Valence** | 0.9146 | - | - | - | - | - |
| **Non-routine** | **Women** | **Arousal** | 0.0600 | -0.5095 | -0.9676 | - | - | -0.5449 |
| | | **Valence** | - | -0.4327 | 0.8736 | - | - | -0.5449 |
| | **Men** | **Arousal** | 0.2855 | -0.8459 | -0.9635 | - | - | - |
| | | **Valence** | -0.2913 | -0.7967 | 0.9330 | - | - | - |
| **Habitual** | **Women** | **Arousal** | - | - | -0.8132 | -0.3121 | - | -0.8410 |
| | | **Valence** | - | - | 0.3054 | -0.7393 | - | -0.8092 |
| | **Men** | **Arousal** | -0.0465 | 0.8690 | 0.9986 | 0.9628 | - | - |
| | | **Valence** | 0.5766 | 0.9291 | -0.8327 | -0.7915 | - | - |
| **Impulsive** | **Women** | **Arousal** | - | 0.2717 | -0.4687 | -0.7388 | - | - |
| | | **Valence** | - | -0.1252 | -0.4822 | 0.1909 | - | - |
| | **Men** | **Arousal** | - | - | - | - | - | - |
| | | **Valence** | - | - | - | - | - | - |

Source: own collaboration.

On the other hand, a strong and negative relationship was observed for products in the drinks category in the group of women who are a habitual consumer type (Arousal – r = -0.84; Valence – r = -0.81). This means that if we hold a product in our hands for a long time it is associated with a decrease in sleepy emotions, which may translate into a decision to purchase goods from this category.

When analysing the correlation between the average holding time of a product and the emotions associated with disappointment or tension, it is the type of consumer and gender that performs average, weak, or no such correlations.

## 4. Discussion

The results obtained indicate that in the surveyed groups of respondents, the emotions accompanying consumers when making buying decisions in Virtual Reality varied greatly and strongly depended on such characteristics as the type of consumer and gender.

The analysis shows that there is a negative correlation between the average holding time of a product and the sleepy emotion, which may consequently translate into the purchase of goods. Such behaviour may result from a rejection of a product based on a rational decision (Gomes, 2005; Jerath, Ren, 2021).

It has also been noted that sleepy emotions toward a product decrease or disappear if the time the product is held in the hand increases. However, it is not possible to determine in which direction the emotions will change. Analysing the direction of emotional change is an interesting problem for further research. This is confirmed by the buying decisions of the habitual consumer, in a group of women.

The results of the study showed that a positive relationship between the average time of holding a product from the 'vegetable' category and the sleepy emotion was obtained in the group of habitual consumers, but only men. In this case, it is not possible, based on emotion, to determine unequivocally whether the product will be purchased.

No relationship was found between emotions and the purchase decision for products in the fast food and meat categories, where emotions were distinguished. On the other hand, it is difficult for products in the fruits category to have a definite answer, as there are too large differences between the Arousal and Valence values obtained.

In addition, consideration should be given to using the interview method to determine one's own emotions. Such a survey technique is declarative. In addition, it is difficult to measure and confirm, since interviews are performed after a certain amount of time has passed since the survey. For example, if the research examining lasts 30 minutes, the interview may not be done until after the research examining is completed, or even a little later. This results in respondents not always being able to recall their emotions (Barkana et al., 2022; Labott et al., 2013), especially if we are interested in many specific moments, rather than the overall impression of the entire survey. This can lead to false answers. The information provided during the interview is subjective (it is the respondent's own opinion of his or her feelings during the study). However, if EEG signal analysis is used, the emotions occurring are recorded based on the signal. This study is devoid of the respondent's subjectivity. An important added value of this type of research is the ability to determine emotions at any time of shopping (Petermans et al., 2009; Szymkowiak et al., 2020).

The research conducted indicates very interesting emotions accompanying different types of consumers. The results of the research can provide interesting material for store managers. Knowledge of what emotions most often accompany consumers in a given product category can allow you to properly plan information activities or the appropriate presentation of the assortment. Which can affect the minimization of rejected products. Obtaining objective and representative results requires increasing the number of survey participants.

## 5. Summary

The authors of the study believe that in today's highly competitive market, filled with many products, it is becoming very important to study emotions individually and how they affect buying decisions. The availability of modern technology makes it possible to determine very precisely what and in which situation a particular emotion occurred. The results obtained allow for a better analysis of the attractiveness of the product but also can provide a basis for decision-making by store managers The manager having access to the data can take more effective actions related to planning the place of sale, product presentation, and communication with the customer. The results obtained can also become a contribution to reducing negative emotions and transforming them into positive emotions. However, it should be taken into account that for some participants in the study the environment they were in, i.e., virtual reality determined the behaviour characteristic of gamers. The authors believe that the reason for this is the perception of the VR environment as a place where time plays an important role. Another limitation is the scope of the study - a pilot study. To obtain a representative survey sample, it is necessary to expand it. Nevertheless, the results obtained support the opinion that emotions accompanying selection - product choices can be distinguished and disappointed. If they were positive then products were more likely to be put in the shopping cart. This cannot be clearly stated in the case of the presence of negative emotions such as being sleepy and tense.

## Acknowledgments

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# Appendix

**Table A1.**
*Average Arousal and Valence during holding the product in the hand*

| Type | Gender | Arousal and Valence | | | | | | | |
|------|--------|--------|------------|-------|------|----------|--------------|--------|------|
|      |        | **Fruits** | **Vegetables** | **Dairy** | **Fish** | **FastFood** | **Baked goods** | **Drinks** | **Meat** |
| **Considerate** | **Women** | (-0.091; -0.1139) | (-0.0542; -0.2318) | (-0.0512; -0.1547) | (-0.1068; -0.1339) | (-0.0077; 0.5746) | (-0.0925; 0.0607) | (0.0023; -0.0993) | (0.0083; 0.5603) |
|  | **Men** | (0.0006; 0.0111) | (-0.0004; -0.2104) | (-0.0237; 0.2132) | (-0.1362; 0.5423) | (0.0094; 0.0325) | (-0.0925; 0.0607) | (0.0164; 0.0532) | (0.0083; 0.5603) |
| **Non-routine** | **Women** | (-0.0585; -0.2748) | (-0.0388; -0.215) | (-0.0013; -0.0126) | - | - | (-0.0925; 0.0607) | (0.0126; -0.2291) | - |
|  | **Men** | (-0.0721; -0.0991) | (-0.0880; -0.1592) | (0.0092; -0.0183) | - | (-0.0247; 0.3941) | (-0.0925; 0.0607) | (0.0318; -0.1415) | (0.0083; 0.5603) |
| **Habitual** | **Women** | (-0.0345; -0.1895) | (0.1527; 0.2632) | (0.0092; -0.0183) | (-0.0561; 0.3304) | (0.0094; 0.0325) | (-0.0925; 0.0607) | (0.0023; -0.0993) | (0.0083; 0.5603) |
|  | **Men** | (-0.024; -0.2109) | (0.0209; -0.1066) | (0.0092; -0.0183) | (0.17; 0.2153) | (0.0094; 0.0325) | (-0.0925; 0.0607) | (0.0318; -0.1415) | - |
| **Impulsive** | **Women** | (-0.0424; -0.2402) | (0.013; -0.1912) | (0.0092; -0.0183) | (-0.0561; 0.3304) | (0.0094; 0.0325) | (-0.0925; 0.0607) | (0.0164; 0.0532) | - |
|  | **Men** | (-0.0345; -0.1895) | - | (-0.0237; 0.2132) | (-0.0481; -0.055) | (0.0094; 0.0325) | (-0.0925; 0.0607) | (0.0318; -0.1415) | - |

Source: own collaboration.