

## ASPECTS OF THE INFLUENCE OF PRICES ON CONSUMER BEHAVIOUR WHEN PURCHASING FOODSTUFFS: ANALYSIS OF CASES FROM SOFIA, BULGARIA

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### **Abstract**

*Foodstuffs have a strong presence in the daily lives of households. As a rule, consumers make purchases taking into account the prices of goods and the income they can spend on a purchase. Food prices are not constant, but a dynamic quantity. Based on the data of the National Statistical Institute of Bulgaria, it has been established that household expenditure for foodstuffs amounts to about 30% of total consumer expenditure. The main objective of this study is to track the dynamics of price changes overall as well as by groups of foodstuffs in Bulgaria, the dynamics of the changes of the total consumer income and of the consumer expenditure for the purchase of foodstuffs, and their influence on end consumers' behaviour. Based on the data available at the National Statistical Institute of Bulgaria, the article presents the consumer price index, the indices of the total consumer income and of the total consumer expenditure of households for the period 2015-2021. A comparison has been made between the general price index and the index of the prices of foodstuffs and soft drinks. An analysis of the indices of the prices of individual groups of foodstuffs has been carried out. On the basis of quantitative research carried out by the author by using an online survey, aspects of consumer attitudes are revealed that are based on price influence upon purchase. One-dimensional frequency distributions were used for this purpose.*

**Key words:** consumer behaviour, foodstuffs, prices, Bulgaria

### **INTRODUCTION**

Consumer buying behaviour is influenced by a number of factors. One of them is price [3, 5]. It must be present in every purchase and sale and reflects the divergent interests of market participants (producers, traders and consumers) because it measures value in monetary terms and based on this value the seller agrees to sell and the buyer agrees to buy a product and/or service [19]. While producers and traders aim to sell at the highest possible price, consumers seek the relatively lower price because it reflects the amount of money the buyer is ready to pay for a purchase at the point of sale and the seller agrees to receive for their product [6], [1], [17]. On the other hand, price is also the monetary sacrifice the consumer makes in order to obtain the aggregate of benefits related to the purchase, possession or use of the product or service [4], [11]. In addition, it reflects consumer expenditure in terms of money, time and efforts made by consumers

for the purchase and consumption of goods and services to meet their needs [15]. Therefore price:

-is identified with the amount (quantity) of money a consumer has to allocate from their disposable income for the purchase of a certain quantity of the desired product;

-integrates the economic sacrifice that consumers are ready to make not only in the form of monetary expense, but also in the form of free time expenditure spent on the efforts to compare prices, compromise on shopping convenience in search of an acceptable price offer, etc.;

-reflects the value of goods and services when comparing different competing offers and consumer benefits of the acquisition and use of these goods and services. In this sense, through the price consumers are ready to pay for the desired product and/or service are realized two of the basic consumer activities in the process of purchasing – acquisition and use.

Value is closely related to price because it reflects the combination of the obtained benefits consumers consider important [18], and includes quality, price and sales service [9]. Or this is the overall consumer assessment of the usefulness of a product based on the consumers' perception of what they receive in return for what they give [20], the benefits obtained as a result of the possession and use of the product [16]. It is the economic value of goods that reflects the price of the best alternative for the customer. This is the maximum price a fully informed buyer would pay [14]. Thus value is tied to price based on the benefits obtained against the sacrifices (of money, time, etc.) consumers have to make. Consumers buy taking into account mainly:

- product prices;
- their disposable income;
- the time they have at their disposal.

This means that if one of these factors changes, consumer behaviour changes as well and, respectively, their willingness to make or temporarily postpone a given purchase.

On the other hand, the decision to buy is influenced by other factors as well: advertising, household size, shelf life of food products, purchase urgency, consumer experience, etc. Therefore, consumer decision to buy is influenced by consumer personal and demographic characteristics, marketing factors, influence of reference prices (internal and external), availability of time for a purchase. Very often, in the process of search and purchase of consumer goods, consumers compare the internal reference price formed in their minds as a result of previous buying experience or observations with the external reference price (currently advertised price; actual price traders usually offer or currently reduced price), i.e. they use internal reference price to evaluate current market prices [15] as low, average or high. Internal reference price is the price consumers expect to pay, perceive as normal or fair for the brand bought [12], [10]. Unlike internal reference price, external reference price is *the established and currently valid market price* [10]. In other words, this is the particular price consumers

see in the point of sale and have to pay for the purchase of the product they prefer.

## MATERIALS AND METHODS

The main objective of the study is to track the dynamics in the change of prices – overall and individually by groups of foodstuffs in Bulgaria, the dynamics in the change the total consumer income and expenditure for the purchase of foodstuffs and their influence on end consumers' behaviour. For this purpose, data from the National Statistical Institute of Bulgaria (NSI) are used.

The group of foodstuffs whose prices are observed by the National Statistical Institute of Bulgaria includes:

- bread and cereals;
- meat and meat products;
- fish and seafood;
- milk, dairy products and eggs;
- animal and vegetable oils and fats;
- fruit;
- vegetables;
- sugar, honey, chocolate and sugar products;
- coffee, tea, and cocoa;
- mineral waters, soft drinks, fruit and vegetable juices.

In addition, data is used from an author's survey conducted in the periods March-May 2021 and October-November 2021 through an online interview and regarding the influence of prices on consumer behaviour when buying foodstuffs. The scope of the survey includes people living in Sofia, the capital of Bulgaria. In order to determine the volume of the sample is used the most conservative possible estimate of the relative share of the overall aggregate of people  $\pi$ . It is obtained from the assumption that  $p=q=0.5$ . We assume that the maximum error in such studies is 0.05 with a guaranteed probability of 0.95. The calculation of the volume of the sample is done by the formula [8]:

$$n = \frac{z^2 \pi (1 - \pi)}{E^2} = \frac{z^2 p (1 - p)}{E^2} \dots\dots\dots (1)$$

where:

n – volume of sample;

$z$  – guarantee multiplier (it is assumed that its value is 1.96)

$\pi$  - the most conservative estimate of the relative share of the overall aggregate;

$E$  – maximum error.

Applying the above formula, it is established that the sample volume is:

$$n = \frac{z^2 \pi (1 - \pi)}{E^2} = \frac{z^2 p (1 - p)}{E^2} = \frac{1.96^2 \cdot 0.5 (1 - 0.5)}{0.05^2} = 384 \text{ respondents.}$$

In order to achieve sustainability of the survey results, 468 respondents were included in the sample.

The data from the survey were processed using the statistical programme SPSS.

By demographics, the breakdown of consumers buying foodstuffs for their households is as follows:

*By employment status* – 60% working, 21% retired, 16% students, 3% unemployed;

*By marital status* – 58% married, 42% single;

*By size of household* – single-membered (25.9%), two-membered (28.9%), three-membered (24.4%), four-membered (17%) more than four-membered (3.8%);

*By household monthly income* – up to 700 lv. (18.3%), from 701 to 1,400 lv. (24.8%), from 1,401 to 2,100 lv. (29.2%), from 2,001 to 2,800 lv. (19.2%), over 2,800 lv. (8.5%). (1 EUR = 1.95583 BGN);

*By gender* – 48% men, 52% women.

## RESULTS AND DISCUSSIONS

According to the data of the National Statistical Institute of Bulgaria for the period 2015-2021, the general index of consumer prices [7], the indices of the total consumer income and of the total consumer expenditure are dynamic quantities [2] (Figure 1).

As the figure shows, except for 2016 and 2020, the increase in the index of total consumer income for the period 2015-2021 outperforms the general index of consumer prices.

The situation in 2020 is negative with regard to the index of total consumer expenditure. In 2020, the total consumer expenditure

outperforms the increase in the index of total household consumer income.

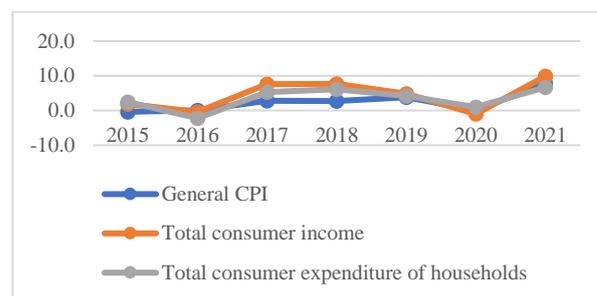


Fig. 1. General index of consumer prices, indices of the total consumer income and of the total consumer expenditure of households for the period 2015-2021 (December of the previous year =100).

Source: Author's own calculations based on data from NSI.

The dynamics of the prices of foodstuffs for the period considered is shown in Figure 2.

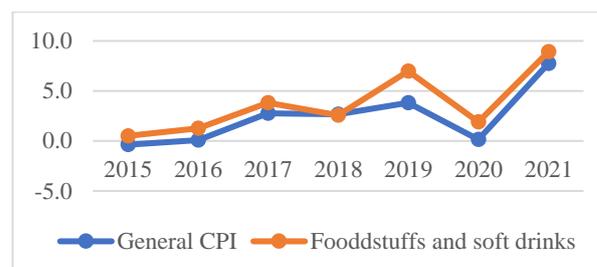


Fig. 2. General index of consumer prices and index of the prices of foodstuffs and soft drinks for the period 2015-2021 (December of the previous year =100).

Source: Author's own calculations based on data from NSI.

It is clear from the figure that the prices of foodstuffs and soft drinks are in an upward trend. Only for 2018 and 2020, there is a decrease on an annual basis compared to the previous year, respectively, compared to 2017 and 2019. The general negative trend for the period observed is that the prices of foodstuffs and soft drinks outperform the general price increase in the country. Only for 2018 the general price growth in the country is stronger than the growth in the prices of food products and soft drinks.

Figure 3 presents the price indices by groups of foodstuffs in Bulgaria for the considered period.

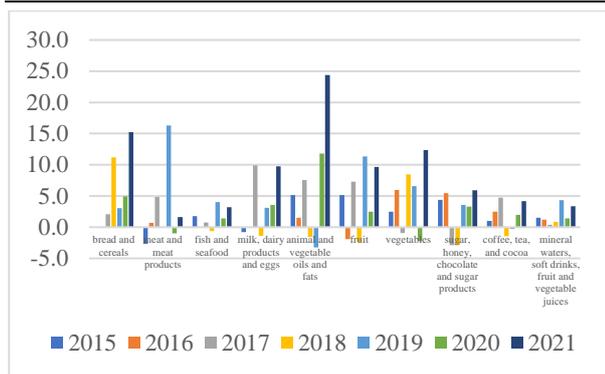


Fig. 3. Indices of the prices of foodstuffs for the period 2015-2021 (December of the previous year =100).

Source: Author's own calculations based on data from NSI.

Analyzing the indices of the prices for foodstuff, we may draw the following conclusions:

*First*, in 2015, the most considerable price increase is observed for the animal and vegetable oils and fats; fruit; sugar, honey, chocolate and sugar products. The prices of meat and meat products, and milk, dairy products and eggs show a drop while the prices of bread and cereals remain unchanged.

*Second*, in 2016, the prices of vegetables; sugar, honey, chocolate and sugar products; and coffee, tea and cocoa show the highest growth. There is no change in the prices of fish and seafood as well as of milk, dairy products and eggs.

*Third*, in 2017, the biggest increase is observed in the prices of milk, dairy products and eggs; animal and vegetable oils and fats; fruit.

*Fourth*, in 2018, the prices of bread and cereals; and vegetables go up the most.

*Fifth*, in 2019, the prices of meat and meat products; fruit; vegetables; mineral waters, soft drinks, fruit and vegetable juices; and fish and seafood rise the most.

*Sixth*, the prices of animal and vegetable oils and fats; bread and cereals; milk, dairy products and eggs; and sugar, honey, chocolate and sugar products increase the most in 2020.

*Seventh*, in 2021, the prices of animal and vegetable oils and fats; bread and cereals; vegetables; milk, dairy products and eggs; sugar, honey, chocolate and sugar products; and tea, coffee and cocoa have the most considerable rise.

For the period analyzed and with regard to the separate groups of foodstuffs compared with the general index of consumer prices for 2018, 2020 and 2021, the index of the prices of bread and cereals outperforms the general increase in the prices for the years. The index of the prices of meat and meat products outperforms the growth in the general index of consumer prices for 2016, 2017 and 2019. With regard to the group of fish and seafood, their price index is higher than the general index of consumer prices only in 2019. In terms of the groups of milk, dairy products and eggs, the group price index outperforms the general price index in 2017, 2020 and 2021. Only in 2018 and 2019, the index of the prices of animal and vegetable oils and fats is lower than the general index of prices. In 2016 and 2018, the index of the prices of fruit is smaller than the general price index. The index of the price of vegetables is higher than the general price index except for the years 2017 and 2020. The index of the prices of sugar, honey, chocolate and sugar products is higher than the general price index in 2015, 2016 and 2020. For the rest of the years, it is lower than the general price index. The price index of the goods from the group of tea, coffee and cocoa is higher than the general price index for the years 2015, 2016, 2017 and 2020 and lower than the general index of consumer prices for the years 2018, 2019 and 2021. The index of the prices of mineral waters, soft drinks, fruit and vegetable juices for 2015, 2016, 2019 and 2020 is higher than the general index of consumer prices.

The change in the prices of food products and the changes in the income and consumer expenditure of households, household expenses for foodstuffs in particular, (for the period observed and based on the NSI data, household expenditure for the purchase of foodstuffs amounts to about 30% of the total consumer expenditure), form a specific consumer behaviour.

As Figure 4 shows, over 75% the consumers who participated in the author's survey say that they compare prices prior to a purchase.

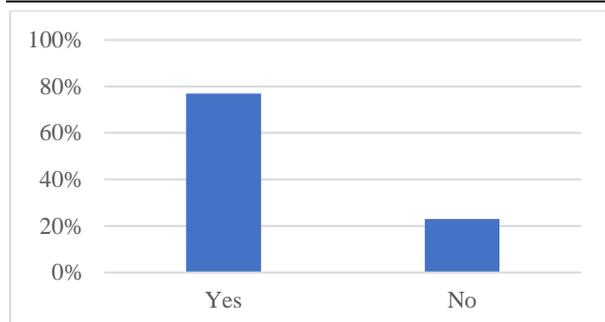


Fig. 4. Breakdown of opinions regarding price comparison prior to a purchase  
 Source: Author's own survey.

The results from the survey in Figure 5 show that in the process of buying foodstuffs, the respondent consumers are mostly influenced by the prices of meat and meat products; animal and vegetable oils and fats; and fish and seafood, whereas they are least influenced by the prices of bread and cereals.

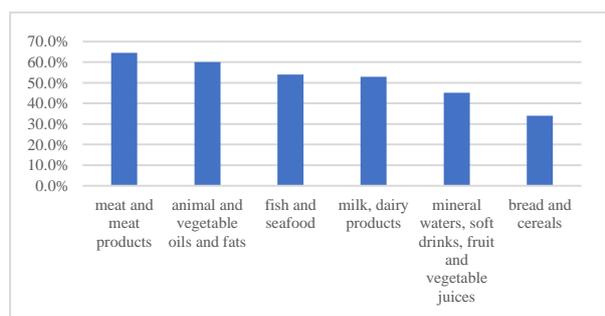


Fig. 5. Breakdown of opinions regarding the influence of prices on the process of buying foodstuffs  
 Source: Author's own survey.

It is common practice for retail chains for foodstuffs in Bulgaria to announce special price offers weekly and for a pre-determined assortment at temporarily reduced prices which allows consumers to avail of such opportunities.

As Figure 6 shows, over 60% of consumers get informed about current price offers every week and 18% do it several times a week.

It is noteworthy that the practice of the different chains (Billa, Kaufland, Lidl, T Market, Fantastico, etc.) in terms of the weekly current price offers is to have a different starting day of the week.

The search for information about current price offers forms both utilitarian (saving time and money) and hedonistic (emotional satisfaction from the finding of good price offers) consumer attitudes to prices [16].

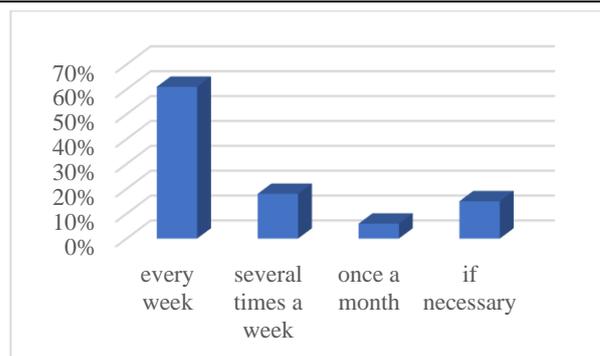


Fig. 6. Breakdown of opinions in terms of frequency of review of information sources for price reductions  
 Source: Author's own survey.

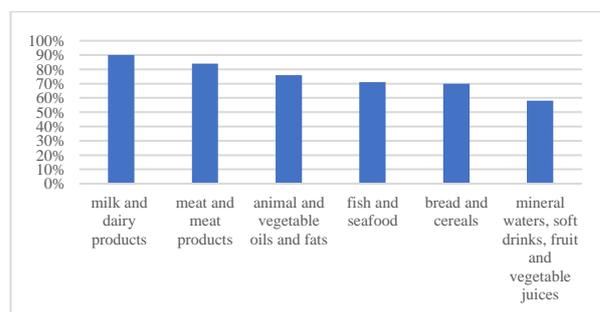


Fig. 7. Breakdown of opinions regarding the most frequently bought foodstuffs during periods of price reductions  
 Source: Author's own survey.

The preferred product groups that are subject of purchase during price reductions (Figure 7) are the various kinds of dairy products – cheese, yellow cheese, different kinds of yoghurt and milk, meat and meat products. Depending on the conditions and expiry date, the purchase of products from these groups allows consumers to realize the effect of forming consumer stocks [13] as well as to reduce consumer household expenditure, i.e. to save part of consumer income as the form of difference between the regular (not reduced) price and the temporarily reduced price. Consumers are least willing to buy when it comes to the product group of mineral waters, soft drinks, vegetable and fruit juices. The established price dynamics show that apart from reductions, they register rises as well. As for consumer behaviour when prices are rising, survey results are presented in Figure 8.

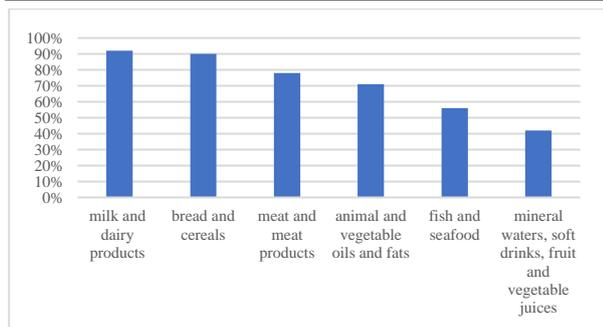


Fig. 8. Breakdown of opinions in terms of the most frequently bought products regardless of their price rise  
 Source: Author's own survey.

The figure shows that regardless of the price rise of foodstuffs, consumers are most willing to purchase products from the groups of milk, dairy products, bread and cereals, i.e. essential goods, which also indicates a strong price sensitivity to the prices of these goods. Consumers are least willing to buy when it comes to the product group of mineral waters, soft drinks, fruit and vegetable juices.

## CONCLUSIONS

Price is a key factor in the purchasing process because it is a source of information about the price offers for the individual groups of foodstuffs as well as for the different brands within a group. It reflects consumer expenditure and is used as one of the criteria to choose a product in the process of comparing and of choosing different alternatives. The influence of the prices of foodstuffs on consumer behaviour in Bulgaria results in the formation of utilitarian and hedonistic attitudes to price, and in the realization of the effect of forming consumer stock by buying temporarily reduced foodstuffs and hence reducing part of their consumer expenditure as well.

## REFERENCES

[1]Andreti, J., Zhafira, N., Akmal, S., Kumar, S., 2013, The Analysis of Product, Price, Place, Promotion and Service Quality on Customers' Buying Decision of Convenience Store: A Survey of Young Adult in Bekasi, West Java, Indonesia, *International Journal of Advances in Management and Economics*, Vol. 2(6), 73.  
 [2]Consumer income and consumer expenditure. National Statistical Institute.

<https://nsi.bg/en/content/3168/households-income-expenditure-and-consumption>. Accessed on 31 July, 2022.

[3]Dimova, D., 2021, Mathematical models describing the dynamics in average prices and purchased quantities of fresh fruits, *Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development*, Vol.21(2), 237-242.  
 [4]Erickson, G., Johansson, J., 1985, The role of price in multi-attribute product evaluations. *Journal of Consumer Research*, 1985, 12(2), 195-199.  
 [5]Hsu, Y., Pham, H., 2015, Effects of reference pricing on consumer purchasing intention. *International Review of Management and Business Research*, 2015, Vol.4(4), p. 1158.  
 [6]Kalb, I., 2004, *E-marketing: What When Wrong and How to Do it Right*, 2<sup>nd</sup> Edition, K&A Press, p.131.  
 [7]Inflation and Consumer Price Indices. National Statistical Institute. <https://nsi.bg/en/content/2445/inflation-and-consumer-price-indices>. Accessed on 31 July, 2022.  
 [8]Kaloyanov, T., 2004, *Statistics*, Trakiya-M Publishing House, Sofia, pp.191-193.  
 [9]Kerin, R., Berkowitz, E., Hartley, S., Rudelius, W., 2011, *Marketing*, 8<sup>th</sup> ed., McGraw-Hill, p. 185.  
 [10]Klein, N., Oglethorpe, J., 1987, Cognitive reference points in consumer decision making. *Advances in Consumer Research*, Vol.14, pp.183-187.  
 [11]Kotler, Ph., Armstrong, G., 2011, *Principles of Marketing*, 14th Ed., Pearson Education Inc., p. 290.  
 [12]Mayhew, G., Winer, R., 1992, An empirical analysis of internal and external reference price using scanner data. *Journal of Consumer Research*, Vol.19, pp.62-70.  
 [13]Nagle, T., Holden, R., 1995, *The strategy and tactics of pricing. A guide to profitable decision making*. 2nd edition. Prentice Hall, pp.78-94.  
 [14]Nagle, T., Holden, R., 2002, *The strategy and tactics of pricing*. 3rd edition, Prentice Hall, p.75.  
 [15]Peter, J., Olson, J., 2010, *Consumer behavior & marketing strategy*. 9th edition, McGraw-Hill, pp.440-441.  
 [16]Prihatiningsih, E., Estiasih, S., 2020, Hedonic Shopping Value and Utilitarian Shopping on Impulsive Purchases at Tunjungan Plaza Surabaya. *International Journal of Research in Social Science*. Vol. IV, Issue XII.  
 [17]Schindler, R., 2012, *Pricing Strategies: A Marketing Approach*, SAGE, p. 3.  
 [18]Steinhardt, G., 2019, *Market-Value Pricing: definitions, concepts, and processes for market-value centric pricing*. Springer, p.9.  
 [19]Wright, R., 1999, *Marketing: Origins, Concepts, Environment*, Thomson Learning, p.193.  
 [20]Zeithaml, V., 1988, Consumer perceptions of price, quality, and value: a means-end model and synthesis of evidence. *Journal of Marketing*. Vol. 52(3), p.14.