

## Concept of Socio-Economic Motivation of Water Consumption and Water Saving in the Housing Sector

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**Abstract:** Providing the drinking water to the population is a strategic task of the state. It is due to the needs to guarantee the sanitary and food safety of people in the country. Under the conditions of tense balance of freshwater, the important problem of our time is the rational consumption of it by the population as well as ensuring the economic efficiency of the water supply enterprises. Concept of social and economic motivation of water consumption and rational use of water has a practical focus for water supply enterprises. An understanding of behavior motivation of tap water consumers allows us to build an effective pricing policy and to ensure the overall access to the drinking tap water for all strata of the population regardless of social status and financial capabilities.

**Key words:** Motivation, water consumption, water saving, social, access

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### INTRODUCTION

Water supply and sewerage enterprises are the challenging economic life-support system associated with the production and the selling of products without which almost impossible a normal life of people in modern cities. In modern conditions of business entity, the management of their activities is carried out with a significant tense and a necessity to consider many factors. In the basis of water consumption management in residential buildings should be placed an essential condition of overall access of drinking tap water for all people regardless of their social status and financial opportunities.

In this case the dominant importance should not be the principle of providing water to the population but to meet its water requirements. However by directing their efforts to meet the needs of the population, water supply and sewerage enterprises can not ignore the economic factors that are largely depend on their financial and business activities.

Concept of socio-economic motivation of water consumption and water saving allows to consider the behavior of tap water consumers and render an active influence on him. It will increase the economic efficiency of product selling of the water supply and sewerage utilities in the housing sector.

### MATERIALS AND METHODS

**Genesis of motivation of consumer behavior:** Analysis of information sources shows that the results of theoretical and applied aspects of motivation are presented by the scientific community.

Analysis of approaches to the definition of "professional motivation" personality was studied by Tarasov. It is noted that the professional motivation is determined by a complex ratio of the different motives, belonging to the necessity-motivational sphere and is seen as a moving factor of development of the individual professionalism. Different approaches to understanding the motivation of consumer behavior, psychological aspects of motivation were discussed by Shemyakina. It is noted that the motivation of acquisition of goods and services is currently an important issue for enterprises who are engaged in production and selling of goods and services.

Titova and Kolosov (2014) gave the characteristic of basic structural components of client's motivational complex in retail. Analyzed the action techniques on clients, the use of which in marketing practices of trading companies will strengthen the competitive advantage of companies and increase the selling. Vykopalova (2014) studied the impact of economic processes in the society on the motivation of individual behavior. She considers the various aspects of motivation.

Definition of social behavior by assessing the perception of social culture is represented in the research of Japundza-Milisavljevic *et al.* (2010). An analysis of the motivation behavior of children with intellectual disabilities was given. Results of the effect of integrated marketing communications on the motivation of consumer behavior are presented in the research of Mihart (2012). It is shown that these communications effect on the consumers indirectly through the perceptions, attitudes, motivation and real behavior.

In the study of buying motivation of foodstuffs, the causal link of formation of consumer preference was revealed by Ozguven (2012). One of the major problems of livelihood of the population is the institutional relations of water supply and sewerage enterprises and government authorities Jalba *et al.* (2014). These relationships require a continuous improvement for interaction in normal operation and in emergency situations.

Research of Doria *et al.* (2009) is devoted to the problem of quality tap water and consumer confidence. The study has found that the consumer assessment of water quality primarily depends on its organoleptic properties, particularly taste. Qualitative characteristics of drinking water serve by motivational basis for the use of tap water or bottled water. The problem of motivation of water consumption and water saving in the housing sector is not sufficiently studied yet, despite its relevance. Because of this, marketing specialists of the water supply and sewerage utilities almost do not use the motivation of water consumption and water saving in the selling of their product. However, only through the motivation we can understand the basic internal and external forces that motivate consumers who live in the specific conditions and rotate in the close social circles to them with a certain income etc to use the drinking water in a certain quantity. We can identify the control points of formation of pricing policy of the water supply and sewerage enterprises and also can forecast the consumer behavior of the population through the motivation of people's behavior in the market of water supply and sewerage product.

## RESULTS AND DISCUSSION

First of all, the relevance of accounting the motivation of water consumption and water saving is caused by the necessity of activation of human factor that affects the use of drinking tap water. Motivation of water consumption and water saving is an important structural element in the system of consumer behavior of human in the market of water supply and sewerage products.

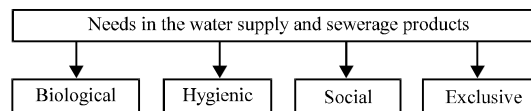


Fig. 1: Diagram of distribution of the population's needs in water supply and sewerage products

According to Freud (2010), people usually do not realize the real psychological forces that shape their behavior and do not realize in the sources of their own motivation. In this regard, consumers can not always control the water consumption and considerably they will use it in accordance with their habitual behavior, i.e., a bit more than they would like initially. In this case they can assess the degree of excess later when will have to pay for the used water supply and sewerage product. Of interest is the possibility of applying the concept of motivation of Maslow (1987) to the analysis of water use by consumers in residential buildings. Requirements for water supply and sewerage product can be ranked in a hierarchical order. Despite the apparent boundlessness of the needs, the use of tap water in households is limited to the saturation when a person already can not use this boon (tap water). According to the concept of Maslow (1987) the motivations and the needs begin to form at a lowest level-physiological-and then in order of hierarchical subordination the motivations and the needs are continuously developed and improved. The basic needs (motives) are allocated: The physiological inducement, the need in security and protection, the need in respect, the self-actualization and self-realization, the needs in leadership. Consumer behavior of population is based on the dualistic nature of human being. On one hand human being is a biological entity that uses water for the food purposes and on the other-human being is a social being that determines the use of water to meet their social needs. Hence, the needs in water supply and sewerage product are classified into biological and social needs.

The main provisions of the concept of motivation by Abraham H. Maslow, applied by us to the water consumption in the housing stock can be represented by the following levels of population's needs in the drinking tap water. The hierarchical diagram of the population's needs in water supply and sewerage product is shown in Fig. 1. According to the concept of motivation of Maslow (1987) the human needs are arranged in a hierarchical order of importance for an individual from the most to the least relevant. Naturally, human being will seek first of all to meet the most urgent needs. As soon as he manages to satisfy the primary need, it for a while loses its relevance and ceases to be a motivator. Simultaneously

occurs a motivation to satisfy the needs of the next in importance. However, when the most urgent need is satisfied, the following need will come in forefront. Without a proper and effective water metering the economic component of water consumption is rather insignificant and does not appreciably effect on the consumer behavior of the population.

**Biological minimum:** Use of water for food and drinking needs. It is the first need in water which is distinctive not only to a person in extreme conditions but also in our daily lives. Most users of water supplies do not think about it when they open the tap. In reality if a person is thirsty and hungry, until he did not quench it he will not even think about the hygiene procedures.

**Hygienic needs:** Maintaining the body, cloths, house and habitat in a proper order and cleanliness. Only after the quenching thirst and hunger, a person begins to pay attention to the cleanliness of the body, cloths, habitat. An objective need arises in bringing it all in proper order. Tap water is used in a quantity that is required to meet the needs of existence to provide the household conditions, hygienic procedures, washing clothes, cleaning.

**Social needs:** Belong to the certain subculture, social class, sense of spiritual intimacy with others, love. A person can not exist in isolation he has to communicate with his family, friends, close and distant people. Connection of "human-environment" feeds his needs by matching his ideas about the social values that are specific to his circle of communication. There appear aesthetic, moral needs that reflect their dignity, consequently a person need information about the attitude of other people to him, about the relationship between the other people about the structure of their living conditions etc. In the foreground there is a need to be at his entourage level to keep the appropriate living conditions at his disposal to maintain the sanitary equipment and fittings in a good technical condition to use water not only for drinking, cooking, washing clothes and cleaning of premises but also the hygienic procedures familiar to the people of his social circle. However if a consumer will be given a real possibility of economic use of his household budget through a more careful consumption of water he will take this advantage.

**Exclusive needs:** After satisfying the above needs and at a presence of appropriate capabilities, there appears a special need of home improvement-to equip it with the most modern (and better and unique) sanitary instruments, operation of which involves the use of large

quantities of water. In this case, the payment amount for the used water supply and sewerage product relegates to the background and dominates the need of equipment operation. More important for him that the use of such sanitary equipment indicates the high level of wealth. Nevertheless, one can not simply wave aside from the effect of price on the amount of water consumption in the exclusive sector of home improvement. Therefore, in the segments of increased water consumption only a satisfactory perception of relations "value/price" will be observed. A high comfort requires an increased cost. Analysis of the consumption processes of tap water in houses with different levels of income allows us to focus on the following aspects of socio-economic motivation of water consumption and water saving in residential buildings.

Motivation of water consumption in residential buildings is a set of behavior motives and activities of consumers of water supply and sewerage products, aimed to meet their needs in the drinking tap water. Motivation of water saving is a set of behavior motives and activities of consumers of water supply and sewerage products, aimed to meet their needs in the drinking tap water within the social norm, and within the amount that fit their financial opportunities.

Motives are the conscious (which is the feature of individual) inducements of behavior and activities at the highest form of reflect of needs. Imminence of consciousness of needs is related primarily with the so-called "alienation" of needs of the society or the environment of consumer. "Alienation" of needs is nothing else than the perception of needs of the social class to which a person considers himself. A social class or a separate group impose its mark on the behavior of a person who is a member of a social class or group. A person perceives the rhythm of life, traditions and culture of the social class to which he himself reckons, belonging to which he appreciates. It is important in the formation of value strategy of water supply and sewerage product for the housing sector.

Inducement is the external objects or purposes which should cause a certain behavior in relation to a person. In terms of residential buildings for the consumers of water supply and sewerage products the inducement of rational water consumption is a real opportunity to pay only for the amount of consumed water and thereby to use their household budget more economically. In the presence of inducement and proper metering the needs and motives of rational use of water have the boundary conditions. The lower limit is the social norm of water consumption. The upper limit of water consumption is determined by the technical capabilities of water supply and sewerage systems on one hand and on the other-by the value concepts of consumers and their financial opportunities.

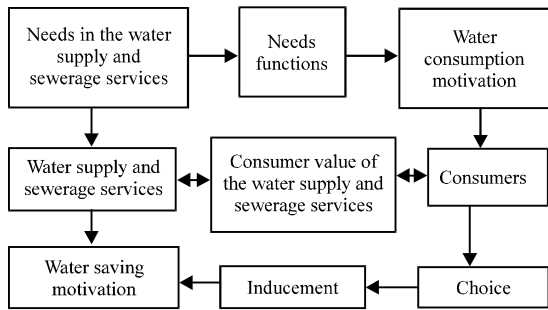


Fig. 2: Chain of relationships in meeting the needs in output of the water supply and sewerage enterprises

Figure 2 shows a chain of relationships that exist in meeting the needs in output of the water supply and sewerage enterprises. Motivation of water consumption is influenced by the consumer value of water supply and sewerage products which is specific for each individual consumer and also for the social stratum.

In the housing sector the needs in tap water are closely linked to the motivation of water consumption and determine the population behavior on the market of water supply and sewerage products (Svintsov, 2007). Consumer motivation to the water saving appears only through the choice that allows him to use the household budget more efficiently. In the studies of cognitive psychology there is a concept of two measurements, according to which a consumer measures this or that option of his choice. People use a certain amount of tap water due to the steady habits or because the style of water consumption and the water comfort level that inherent in their circle, their reference groups, whose opinion they trust. It does not mean that such water consumption is characterized by the best indicators.

The case is different-consumers already have the psychological evidence that in the market conditions such water consumption provides the acceptable relationship of “value/price”. In this case the value of water supply and sewerage product varies depending on the sanitary equipment of households, due to the possibility to meet the needs of different levels. A consumer determines his requirements for the quantity and quality of tap water, associated with those actions that meet the certain needs. It is not economically feasible for the water supply and sewerage enterprises to offer their products to the population that calculated on the average level of requirements without considering the consumer differentiation.

In our view, working out of the only embodiment of drinking tap water to the population is an unsuccessful

strategy of using the potential possibilities of water consumption in the housing sector. For example, some consumers prefer to take the sanitary and hygienic procedures by using the equipment with enhanced functionality and are willing to pay for high water consumption. Others are interested in a more economic water consumption to reduce the payment from their household budget. It may be that the average norm of specific water consumption and the amount of its payment do not satisfy any of these two consumer groups. In the current scheme of selling of drinking tap water the differentiation of consumers and demand is taken into account inadequately. Implementation of an active sales policy implies the consideration of individual preferences as the differentiation conditions of market offer by the water supply and sewerage enterprises. Consideration of demand specificities of different consumer groups on the basis of water metering only at the entrance of building or in a residential area does not give a complete idea of all factor varieties that shape the consumer behavior. Comprehensive knowledge of the consumer behavior of different groups of the population and the motives of water consumption and water saving is an important condition for the effective management of demand in the market of water supply and sewerage products. Differentiation of the population by income leads to the differences in needs and consumer behavior.

Consumer behavior is an economic phenomenon. “Consumer behavior is an economically complicated process of synthesis and analysis of the potential needs and habits which, somehow form the demand value and have a significant effect on the supply structure in the consumer market” (Migranova *et al.*, 2014). In this regard, the possibility of market segmentation of water supply and sewerage products for housing sector inspires interest. Consideration of the issues of diversification of market offers, study, formation and management of demand for different consumer categories by analyzing their preferences constitutes the nature of market segmentation. With the segmentation from a total of potential consumers the specific groups (market segments or targeted types) are allocated which present the homogeneous requirements for goods. It is advisable to keep in mind that the groups and social strata with different income do not have the same needs.

In the studied case, it is feasible to consider the market segmentation of water supply and sewerage products based on the identification of consumer groups on the value of specific water consumption and income. It must be kept in mind that water is an irreplaceable (without any analogue) foodstuff and an agent to meet the household needs of human being. Consequently, it is

necessary to provide consumers with the supply of a certain quantity of drinking tap water which allows them to meet the drinking and sanitary needs. We think that the specified quantity can be called as the social norm of specific water consumption. Necessity and feasibility of the social norm of water consumption are due to the fact that a person consumes 2-3 L of water a day as the foodstuff, the rest of the consumed water is polluted in the process of household and sanitary procedures. Thus, the more water is consumed in the household, the more it is polluted. Consequently, more materials, energy and other resources require for wastewater treatment. In addition, anthropogenic pressure on the water bodies is increasing, despite the wastewater treatment before being discharged into them which requires an increasing cost for environmental protections and improvement of water bodies.

Application of the segmentation approach in study and formation of the demand for water supply and sewerage products is possible on the basis of the preliminary forecast of water consumption and assessment of its structure. The main objective of forecasting is to assess the actual water consumption values and to identify the homogeneous formations of consumers. When determining the groups which are the homogeneous on the basis of specific water consumption values, the extrapolation of typical processes of water consumer's behavior becomes possible. Consequently, possibilities of forecasting the demand (water consumption) and incomes from the selling depend on the knowledge of differences between the groups in the quantity of water consumption and in income. In this regard, it is necessary to consider the motives of water consumption and water saving when selling the drinking tap water in the market of housing sector.

The water supply and sewerage enterprises and the state institutions are advised to take into account the motivation of people's behavior in the market of water supply and sewerage products. It enables to improve the water management activity of the population and therefore, the economic efficiency of water supply and sewerage product in the housing sector. Careful use of water by the population can improve the water supply and sewerage system and the rational use of natural resources by providing a significant cost savings that go to protect the environment and maintain in proper condition of water bodies.

### **CONCLUSION**

Concept of motivation of water consumption and water saving helps to explain how to form the water

consumer's interest in its rational use and also to identify the ways and methods to maximize the revenue of the water supply and sewerage sector from the selling of their products while ensuring the equality conditions of use. Practical interest of the water supply and sewerage enterprise is that consumers who belong to the certain social groups, behave almost equally in the consumer market. The use of tap water for them is a habitual consumer behavior which is formed under the influence of needs in the certain living conditions and amenities.

Analysis of the works of experts in the field of psychology shows that motives and human needs are closely related in unity and mutual supplement and the need becomes a motive only if it causes a person to act. The need in tap water becomes a motive only if it causes a person to open the tap of sanitary fittings. However, the need for rational use of water becomes a water-saving motive only if it causes a person to open the tap by controlling the water flow from the beginning to the end of the procedure (bathing, washing, etc.).

Application of the market segmentation in selling of drinking tap water to the population will be effective at the active demand, i.e., satisfying the needs with the use of water metering in the flats. It will enable to solve the problems of providing the drinking tap water and reduce the anthropogenic load on the water bodies.

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