THE APPROACH HUMAN RESOURCES THROUGH THE OF BEHAVIOR IN THE INNOVATION ECONOMY

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Abstract

Study of consumer behavior has become essential, especially as the scarce resources which have alternative uses, which the company has at its disposal , require production only of those goods and services that satisfy the necessary quantities. Ignoring how the manifestation of consumer behavior and purchasing can lead serious imbalances. Consumption is the final moment of an economic activity, when are used the goods and services made in the production process to meet needs of the individual and collectivity with the resources available to each one. Economic goods are appreciated by consumers who do not produce them whether it has utility. The utility refers to the satisfaction that an individual feels given an economic situation at a certain time.

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1. Introduction

A fact acknowledged becoming stronger, is the shift from natural resource-based economy to a knowledge based economy. Knowledge leads sometimes essential performance of firms and their competitive advantage.

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In essence, the knowledge economy is characterized by transforming knowledge into raw material, capital goods , essential inputs economy and economic processes in which the generation, sale, purchase , learning , storage, development , sharing and protection of knowledge are predominant and decisive condition for profit and long-term economic sustainability. (Nicolescu, 2005)

In this era of economic innovation and the increasing complexity of economic, human economic behavior undergoes radical changes in terms of two intrinsic components: behavior as a producer and as an actual consumer behavior.

Study of consumer behavior has become essential, especially as the scarce resources which have alternative uses, which the company has at its disposal, require production only of those goods and services that satisfy the necessary quantities .

Ignoring how the manifestation of consumer behavior and purchasing can lead serious imbalances.

Consumption is the final moment of an economic activity, when are used the goods and services made in the production process to meet needs of the individual and collectivity with the resources available to each one. Consumption represents perhaps the most important goal of economic activity, being the basis of human existence, the individuals' personality development and ultimately the measure of job satisfaction.

The usefulness of products and services made using production factors is recognized by their consumption, which acts directly on the level of production. Any company that has experienced a marked increase in consumption while increasing production has also experienced a high degree of utilization of labor and an increase in the standard of living of individuals.

Obviously, there is a relationship between consumption and production, the latter making the goods necessary for consumption, which in his turn stimulates production by using the goods and services.

If consumption is the percentage of use of tangible or intangible goods, consumer is that individual who uses a good to satisfy a final need. The problem faced by the consumer is maximizing the usefulness, while constrained by his income. Consumer behavior is influenced by preferences and their intensity, price level, available income and more.

Any individual's decision of consumption envisages maximizing the welfare function and, in conclusion, consumer behavior theory is nothing but

the method used to study a decision-making process that determines the consumer to seek maximum utility with the income he has at a time.

Microeconomics deals with consumers through the utility theory based on the psychological doctrine that human behavior is determined by the desire to get satisfaction. Gherasim (1994).

Economic goods are appreciated by consumers who do not produce them whether it has utility.

The utility refers to the satisfaction that an individual feels given an economic situation at a certain time. The usefulness, technically speaking, is the real or imagined ability of a good to satisfy the needs, a property that arises and is expressed by traits, characteristics and intrinsic properties of each good or class of goods for personal consumption, capital goods, service or information. In economic terms, the utility includes a reference to a need, a need of the non-owner.

The utility makes sense economically if three conditions are met Babaita, Duta (2000):

1) Existence of a relationship between the quality or characteristics of the goods and one of the needs of people or society is necessary;
2) A community should be able to use the characteristics of goods to meet the needs;
3) Relationships necessary between the goods' characteristics and people's needs must be known and understood.

It is certain that assessing utility has an individual and subjective character because it depends on the report determined by each individual between economic goods and needs, the intensity of needs, which are determined by the level of culture, awareness, personal options, the quantity of goods one have access to.

2. Ordinal and cardinal approach of utility

In the case of **ordinal approach**, the measure of utility is given by the consumer's ability of ordering preferences. This means that, when examining two combinations of goods $x = (x_1, x_2, ..., x_n)$ and $y = (y_1, y_2, ..., y_n)$ the consumer is reasoning as follows:

- Combination x is preferred (more useful) to combination y;
- Combination y is preferred to combination x;

- Combinations x and y are equally preferred (as useful).

A relationship of preference is defined on the set of goods, as follows:

- $x \succ y$, x more preferable than y;

- $x \approx y$, x and y of equal preference

The relationship of preference has the following properties:

1. For any two combinations x, y of goods we have:
$$x \succ y \text{ or } y \succ x \text{ or } x \approx y, \text{ then } x \geq y \text{ or } y \geq x$$
2. If $x \geq y,\ y \geq z$ *then* $x \geq z$ (transitivity)
3. If $x \approx y$ *then* $y \approx x$
4. If $x \geq y$ *and* $x \neq y$ (meaning that at least one coordinate x_k of the vector x is greater than a coordinate y_k of the vector y) then $x \succ y$;
5. For any $x, y \in R_+^n$, $x \neq y$ *and* $x \succ y$ the following relationship occurs $\alpha \cdot x + (1+\alpha) y \succ y$, *where* $0 < \alpha < 1$. This means that "a combination of two combination is preferred to the worst combination" and is known as the convexity property.

The concept of relation of preference allows formulating the following principle*: consumers choose the most preferred combination of all combinations of goods available.*

Such an approach of the problem is not always convenient, so it is actually used the so-called utility function, which allows the comparison of different combinations of goods' utilities.

The cardinal approach of the utility assumes that the measure is given by the values the total utility function takes for the consumption of quantities x_j from the good j.

$$u(x) = u\left(x_1, x_2, ..., x_n\right); \quad u : R_+^n \to R \tag{1}$$

Utility function can be defined both for all combinations of goods $x = (x_1, x_2, ..., x_n)$, and for each item separately, meaning that for each good j is defined its own utility function $u_j(x_j)$.

Then the utility function for the entire combination of goods is determined by one of the formulas:

1. $u(x) = \sum_{j=1}^{n} c_j \cdot u_j\left(x_j\right)$

2. $u(x) = \prod_{j=1}^{n} c_j \cdot u_j\left(x_j\right)$

3. $u(x) = \sum_{j=1}^{n} \ln u_j\left(x_j\right)$

4. $u(x) = \sum_{j=1}^{n} a_j^{u_j\left(x_j\right)}$

where:

$c_j>0$, $a_j>0$.

In essence, the utility function u (x) is a consumer's system of preferences. Its peculiarity lies in the fact that he prefers to choose x over y, if $u(x) > u(y)$. It follows that in choosing the combination of goods, the consumer tends to maximize the utility function.

In the theory of choice of goods, an important role is played by the marginal utility of goods, which expresses the supplementary satisfaction felt while using of an additional unit of good.

If we assume that the amount from j good has changed by Δx_j, and the quantities of other goods have not changed, it will involve changing the utility function:

$$\Delta u_j = u\left(x_1, x_2, ..., x_j + \Delta x_j, ..., x_n\right) - u\left(x_1, x_2, ..., x_j, ..., x_n\right) \quad (2)$$

The report $\frac{\Delta u_j}{\Delta x_j} > 0$ indicates the change of utility of the j good with a supplementary unit. Passing to the limit by $\Delta x_j \to 0$, we obtain:

$$\lim_{\Delta x_j \to 0} \frac{\Delta u_j}{\Delta x_j} = \frac{\partial u}{\partial x_j} \geq 0 \quad (3)$$

This size, i.e. the partial derivative $\frac{\partial u}{\partial x_j}$, is called the *marginal utility* of good j.

Marginal utility represents the variation of total utility resulting from the change by a unit in the quantity of good "X" used to satisfy a need over a period of time. In other words, the marginal utility is the satisfaction that a consumer expects to obtain from consuming the last unit of a good in terms of "caeteris paribus".

In Herman Heinrich Gossen opinion, economics is the "theory of the processes by which the individual and society can achieve maximum satisfaction with minimum effort" (Gossen, 1983).

Gossen created some "fundamental laws" on which the Neoclassical School is based, the leading idea being "a man must organize his life so that the pleasure he lives every day becomes maximum."

Gossen's first law says that "any need's intensity is decreasing as it is satisfied". Otherwise put, if a need is satisfied continuously, its intensity decreases to zero when it has reached the point of satisfaction.

Decrease of the intensity of a need occurs only if the previous need has been satisfied, frequent repetition of satisfying the need causing, ultimately, the diminution of its intensity and duration.

Gossen's Second Law states "any individual, before securing the satisfaction of several needs of different nature with a given amount of resources, must share them on those so to obtain equal satisfaction for the expenditure made".

Following the development of the two laws mentioned above, Gossen concluded that each individual has to manage time and income in order to "maximize the utilities obtained throughout life."

Gossen's Third Law states that "only rare economic goods have value," without clearly explaining that value is not intrinsic to goods, but conferred to them by the intensity of need evolution.

In conclusion, the relation between the total and the marginal utility is characterized by the following:

- Marginal utility decreases as the quantity of good increases;
- Maximum total utility may correspond to a marginal utility equal to zero, which means that the point of satisfaction has been reached;
- When quantity of a good is constantly growing, marginal utility becomes negative.

3. Consumer behavior in the consumer society

As a rational being, the consumers must order their preferences effectively and be responsible for the final act of buying goods and services. He must not devote body and soul for a single thing because no need requires full satisfaction, as no wishes must to be considered supreme.

An important problem faced by the consumer society is that consumption takes time. Customer satisfaction should be instantaneous; the consumption goods should meet the immediate need of the individual while reducing the time to minimum.

The traditional relationship between needs and their satisfaction is interested, meaning the promise and hope of satisfaction is preceding the need whose satisfaction was promised, and thus it is always stronger and tempting than the existing needs.

Consumer behavior considers all actions taken in order to choose the purchase, use and abandon of products and services that no longer meet the needs. Therefore, in a consumer behavior analysis, some features must be considered:

- Consumers are different from each other;
- Consumers react rather emotional than rational, acting differently in certain situations;
- Consumer behavior is dynamic;
- Consumer behavior causes changes among participants in the sale;
- Consumer behavior can be influenced and can be learn, the consumer changing his attitudes in certain situations;
- Consumer behavior determines the knowledge of the individual's perception, impressions and conduct, as well as of any external factors affecting him;
- Consumer behavior reflects the individual's response to various endogenous and exogenous variables.

Factors driving consumer behavior do not only refer to its physical needs related to food, housing, clothing and do not only depend on the purchasing power (product prices, individual income) but is also influenced by socio-cultural factors related to social status issue, factors related to responsiveness to post-modern , modern and traditional values in consumption, factors related to lifestyle and personal traits of each consumer.

In conclusion, the theory of consumer behavior is a way of studying the decision-making process that determines the consumer to seek maximum utility from available resources, acting individually or in social groups, each with their own aspirations.

The consumer needs to form preferences most often based on changes in his income and the prices of products on the market. The basis of the model of consumers' behavior is a presumption that each of them chooses the combination of goods at specified prices and with the disposable income attempting to maximize the satisfaction of their needs.

Because consumer's preference in the area of combinations of goods is expressed by the function u(x), the model of hoe the consumer chooses the goods has the form of the following mathematical programming problem:

$$\begin{cases} \max u(x) = u(x_1, x_2, ..., x_n) \\ \sum_{j=1}^{n} p_j \cdot x_j \le M \\ x_j \ge 0, \quad j = \overline{1,n} \end{cases} \tag{4}$$

In the above model it is accepted that the consumer's manner of choosing goods is limited only by the size of the income. In reality, the choice may be influenced by other factors, in which case other restrictions are introduced on the set of values of the vector x, obtaining more complicated models.

The necessary and sufficient conditions for solving the problem of optimal consumer behavior are the Kuhn-Tucker conditions for the Lagrange function:

$$L(x,\lambda) = u(x) + \lambda(M - px) = u(x_1, x_2, ..., x_n) + \lambda\left(M - \sum_{j=1}^{n} p_j \cdot x_j\right) \tag{5}$$

and explicitly:
$$\begin{cases} \dfrac{\partial L}{\partial x_j} = \dfrac{\partial u}{\partial x_j} - \lambda \cdot p_j, \quad j = \overline{1,n} \\ x_j \cdot \dfrac{\partial L}{\partial x_j} = x_j \left(\dfrac{\partial u}{\partial x_j} - \lambda \cdot p_j \right) = 0, \; j = \overline{1,n} \\ \dfrac{\partial L}{\partial \lambda} = M - \sum\limits_{j=1}^{n} p_j \cdot x_j \geq 0 \\ \lambda \cdot \dfrac{\partial L}{\partial \lambda} = \lambda \left(M - \sum\limits_{j=1}^{n} p_j \cdot x_j \right) = 0 \end{cases} \tag{6}$$

Here, the partial derivatives and the variables $x_1,x_2,...,x_n$ and λ are calculated in the optimum point $\left(x_1^*, x_2^*,..., x_n^*, \lambda\right)$, where $x^* = \left(x_1^*, x_2^*,..., x_n^*\right)$ is the optimal solution of the problem formulated about the consumer behavior.

From Kuhn Tucker conditions results that if $x_j^* > 0$ then:

$$\frac{\partial u}{\partial x_j} - \lambda^* p_j = 0 \Rightarrow \frac{\partial u}{\partial x_j} = \lambda^* p_j, \; j = \overline{1,n} \tag{7}$$

Therefore, marginal utilities are proportional to the corresponding commodity prices.

From condition (4) it follows that:

$$\frac{\dfrac{\partial u}{\partial x_j}}{p_j} = \lambda^* > 0$$, because it is assumed that $p_j > 0, \; j = \overline{1,n}$.

Thus, the optimal Lagrange multiplier λ^* must be positive.

From the last Kuhn-Tucker condition $\lambda \left(M - \sum\limits_{j=1}^{n} p_j x_j \right) = 0$ results that all income is used to purchase the optimal mix of goods:

$$\sum_{j=1}^{n} p_j x_j^* = M \tag{8}$$

In these circumstances, the initial problem (1) we can replace the inequality with equality budget constraint and obtain:

$$\max u(x) = u(x_1, x_2, ..., x_n)$$

$$\begin{cases} \sum_{j=1}^{n} p_j x_j = M \\ x_j \geq 0,\ j = \overline{1,n} \end{cases} \tag{9}$$

For this problem we apply the Lagrange function:

$$L(x_1, x_2, ..., x_n, \lambda) = u(x_1, x_2, ..., x_n) + \lambda \left(M - \sum_{j=1}^{n} p_j x_j \right)$$

The necessary and sufficient conditions for optimality are:

$$\begin{cases} \frac{\partial L}{\partial x_j} = 0,\ j = \overline{1,n} \\ \frac{\partial L}{\partial \lambda} = 0 \end{cases} \tag{10}$$

Explicitly:

$$\begin{cases} \frac{\partial u}{\partial x_j} = \lambda \cdot p_j\ ,\ \ j = \overline{1,n} \\ \sum_{j=1}^{n} p_j x_j = M \end{cases} \tag{11}$$

The solution of system (8) of n+1 equation determines the optimal choice $x^* = (x_1^*, x_2^*, ..., x_n^*)\ si\ \lambda^*$.

The optimal solution of problem (1) depends on the price vector *p* and income *m*, and the general solution can be written as

$x^* = x_j^*(p, M),\ j = \overline{1,n}$ *si* $\lambda^* = \lambda^*(p, M)$ being functions of the variables $p_1, p_2, ..., p_n$ and M.

From these results we can draw the following consequences, which occur at the optimal choice of goods by the consumer:

1. Marginal utilities of goods are proportional to the price:

$$\frac{\partial u\left(x^*\right)}{\partial x_j} = \lambda^* p_j,\ \ j = \overline{1,n}$$

2. Report of two goods' marginal utility is equal to the ratio of their prices:

$$\frac{\partial u\left(x^*\right)}{\partial x_j} : \frac{\partial u\left(x^*\right)}{\partial x_k} = p_j : p_k,\ \ j,k = \overline{1,n},\ j \neq k$$

3. Marginal utility that returns to a monetary unit is the same for all goods purchased:

$$\frac{\partial u\left(x^*\right)}{\partial x_j} : p_j = \frac{\partial u\left(x^*\right)}{\partial x_k} : p_k;\ j,k = \overline{1,n},\ \ j \neq k$$

4. Marginal utilities accruing to a monetary unit are equal to the multiplier λ^* - the marginal utility of the monetary unit, spent by a consumer to purchase goods:

$$\frac{\partial u\left(x^*\right)}{\partial x_j} : p_j = \lambda^*,\ \ j = \overline{1,n}$$

5. Substitution rate:

$$n_{kl} = \frac{\Delta x_k}{\Delta x_l} = \frac{\dfrac{\partial u\left(x^*\right)}{\partial x_l}}{\dfrac{\partial u\left(x^*\right)}{\partial x_k}} = -\frac{p_l}{p_k};\qquad k,l = \overline{1,n},\ k \neq l$$

6. In the optimal point the following equality exists:

$\frac{\partial u(x^*)}{\partial M} = \lambda^*$ because from the equality $\sum_{j=1}^{n} p_j x_j = M$ results $\sum_{j=1}^{n} p_j \frac{\partial x_j}{\partial M} = 1.$

Using composed function derivation rule and consequence 1 we obtain:

$$\frac{\partial u(x^*)}{\partial M} = \sum_{j=1}^{n} \frac{\partial u(x^*)}{\partial x_j} \cdot \frac{\partial x_j}{\partial M} = \sum_{j=1}^{n} \lambda^* p_j \frac{\partial x_j}{\partial M} = \lambda^* \sum_{j=1}^{n} p_j \frac{\partial x_j}{\partial M} = \lambda^*$$

In conclusion, the size λ^* of the Lagrange multiplier indicates the additional utility belonging to a supplementary unit of income, *i.e. the marginal utility of a monetary unit from the consumer's income.*

4. Conclusions

Studying the behavior of the 21st century consumer is an obvious concern of the business environment.

Due to the permanent pressures put on him, the consumers will have the power to find their quality, to judge and evaluate and find themselves in any circumstance.

Consumers in Romania have stoically endured "attacks" on their health, safety and rights as a tribute to transition, ignorance or legal void while a lot of immoral practices to get rich quick have developed on their account.

The consumer will finally become more circumspect, will more rigorously verify the information received and will change one's vision of consumption in general.

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