

Danka M. Radulovic<sup>1</sup>, Branko R. Maricic<sup>2</sup>

## GENDER DISCREPANCIES IN LATENT DIMENSIONS OF THE DECISION MAKING PROCESS RELATED TO CONSUMPTION

*This research, conducted on the sample of 3206 participants, investigates how male (1,328) and female (1,878) consumer decisions are influenced by the variables of product quality, advertising, manufacturer's name, price, availability, and value vs. price ratio. The finding suggests that both genders are characterized by rational and impulsive decision-making, but in males rational decision-making is dominating while impulsive decision-making is dominating in the female sample.*

**Keywords:** consumer decision-making, gender.

Данка Радулович, Бранко Маричич

## ГЕНДЕРНІ ВІДМІННОСТІ В ПРОЦЕСІ ПРИЙНЯТТЯ СПОЖИВЧИХ РІШЕНЬ

*У статті наведено результати дослідження, проведеного на вибірці з 3206 учасників, показано як чоловіки (1328) і жінки (1878) приймають споживчі рішення під впливом таких змінних, як якість продукції, реклама, найменування виробника, ціна, доступність і співвідношення реальної вартості і ціни. Результати показали, що обом статям може бути властиве раціональне і імпульсивне ухвалення рішень, але у чоловіків раціональне ухвалення рішень є переважаючим, а імпульсивне ухвалення рішень переважає серед жінок.*

**Ключові слова:** ухвалення рішень споживачами, стать.

Таб. 1. Літ.

Данка Радулович, Бранко Маричич

## ГЕНДЕРНЫЕ РАЗЛИЧИЯ В ПРОЦЕССЕ ПРИНЯТИЯ ПОТРЕБИТЕЛЬСКИХ РЕШЕНИЙ

*В статье приводятся результаты исследования, проведенного на выборке из 3206 участников, показано, как мужчины (1328) и женщины (1878) принимают потребительские решения под влиянием таких переменных, как качество продукции, реклама, наименование производителя, цена, доступность и соотношение реальной стоимости и цены. Результаты показали, что обоим полам может быть присуще рациональное и импульсивное принятие решений, но у мужчин рациональное принятие решений является преобладающим, а среди женщин преобладает импульсивное принятие решений.*

**Ключевые слова:** принятие решений потребителями, пол.

**I Introduction.** Modern consumer society is characterized by high competition between companies trying to attract as many buyers of their products as possible. One of the ways to achieve this is to influence consumers to opt specifically for theirs, instead of some other product.

Companies, however, do not have so many available elements which could be used to influence consumers to make such a decision. They can use product advertis-

<sup>1</sup> PhD, Associate Professor, Faculty of Special Education and Rehabilitation, University of Belgrade, Serbia.

<sup>2</sup> PhD, Full Professor, Faculty of Economics, University of Belgrade, Serbia.

ing for that purpose, convincing buyers that their products are of higher or even top quality, that they are not expensive, and that the price paid will bring far higher value; they can also make product accessibility as simple as possible, make products available immediately after a purchase, or refer to the image the company enjoys among consumers population etc. (Jansson-Boyd, 2010; Bradely, 1995).

Consumer decision-making process is complex, affected by many different factors as buyers' needs, beliefs and goals and it contains considerations of various purchase options (Kotler, Keler, 2006; Armstrong, Kotler, 2005). Natural elements these options depend on are: product brand, manufacturer's name, quality, price, availability, possibility of direct or delayed taking over, consequence of the purchase, including benefit of the product with respect to its price. Those elements are most important and most common tangents between buyers and companies, and they constitute a set of an offer marketing experts use to affect the decision-making process. Companies' research teams study and elaborate a range of marketing strategies and use advertising to increase the probability that certain buyer opts for their product (Armstrong, Kotler, 2005). Such marketing strategies are preceded by numerous efforts made by these teams to identify needs, beliefs and goals the buyers have and aspects of their knowledge about the product they use as criteria for selection close to the end decision-making process (Wells, Prenstky, 1996).

But researches of latent dimensions within variable blocks making companies offer are very rare, nevertheless, they are necessary for detection how consumers of both genders make their purchase decisions.

Bearing this in mind, the problem analyzed in this paper can be expressed through the following questions: a) do the elements constituting an offer from a company, including advertising trying to convert these elements into the selection options criteria, affect the decision-making process, and if yes, to what extent, b) what is a latent structure of those elements, and c) are there any gender discrepancies in latent structures of these elements.

In other words, the first problem is whether product quality, advertising process, manufacturer's name, price and availability of a product and value vs. price ratio participate in the decision-making process at all, and if yes, what is their share in such participation. Furthermore, the question is whether those elements have their common denominator in terms of content, which would have a general factor meaning, or there are several latent dimensions between them specifically summing up these individual elements. The latter problem virtually means the search for structure of those elements which are most responsible for their participation in decision-making process. If we, for example, follow the logic of latent dimensions, the variables used by manufacturers, such as price, brand, advertising etc., would be merely a manifestation of certain core and primary dimensions we cannot acquire through simple observations or statements made by individuals, because they are placed somewhere deeper in personality or social space of a buyer.

Finally, the third problem is testing the hypothesis that people of different gender react to these elements differently, thus creating discrepancies in latent structures of those elements. This third problem does not mean a simple curiosity of a researcher analyzing gender discrepancies for some scientifically trendy reasons (McCracken). These discrepancies are essential, because if the aforementioned

hypothesis was verified, practical implications would at least be that elements used by companies to influence the decision-making process have to be provided in a dual form, adapted to those discrepancies (Sollomon, Stuart, 1997).

## **II Method.**

*1. Sample.* The research of elements latent structure based on which companies influence the decision-making process related to the purchase of products, as well as research on gender discrepancies in those structures, was conducted on a 2-phase areal sample from the territory of the Republic of Serbia, with participants of both genders, selected through a random sample method within the areas, with age structure between 18 and 65, who were physically and mentally healthy at the interviewing time, and literate enough to read and understand the questionnaire items. The size of the sample was 3,206 interviewees, out of which 1,878 subjects were female and 1,328 were male. The average age was 37 for female and 42 for male interviewing sample. The age distribution has the shape of normal curves with a slight tendency towards the elder ones.

*2. Variables and instruments.* A set of variables, the latent structures and gender discrepancies of which are analyzed, was composed of 6 elements most commonly operated by the companies trying to affect the decision-making process relating to purchasing of their product.

These are the following variables: 1) product advertising; 2) product quality, 3) manufacturer's name; 4) product price; 5) product availability; 6) value and price ratio. Each of these variables is defined as the degree of influence an individual awards to it when making a decision on buying a product.

The data on all these variables has been collected through an anonymous questionnaire, specifically structured for this purpose. The items in the questionnaire with the proposed answers, graded 1 to 5, with 5 denoting a very high influence of a specific variable to the decision-making process, while 1 or nothing denoted a very low or no influence at all.

*3. Data collection.* Data collection was carried out by specially trained polltakers belonging to a pollster network for opinion polls and marketing researches. Due to the sample size, data collection took several months. Data was collected only from those interviewees who agreed to participate in the research.

*4. Data analysis.* The analysis of latent structures was carried out through the main components method, including their rotation into varimax positions.

**III Results.** The initial matrices of variables intercorrelations the companies use trying to influence decision-making process have shown in both male and female samples that their interconnections are significant, but in the majority of cases are very low. The only correlations not belonging to this category are those related to product quality and value for price (.482 for male and .408 for female). They should be supplemented with correlations between product advertising and availability (.403 for male and .395 for female). All other coefficients are very low, indicating that variables used by the companies in their attempts to influence the decision making process do not have many common variations (Table 1).

The analysis of the main components has shown that 2 components for men and 2 components for women deserve to be interpreted. The first ones have the characteristic root higher than 1, and their existence is not questionable. The second ones

are, however, on the borderline usually applied as a criterion for extraction blocking ( $>1.0$ ), but due to a significant variance percentage exhausted in both cases, these components should be retained for further analysis. The data on the aforementioned is presented in Table 2.

**Table 1. Intercorrelations of variables used by companies to influence consumers decision-making**

	Male					
	advertising	product quality	manuf. name.	price	product availability	value vs. price
advertising	1.000	.250	.342	.098	.403	.253
product quality	.250	1.000	.255	.222	.308	.482
manuf. name	.342	.255	1.000	.278	.280	.185
price	.098	.222	.278	1.000	.246	.248
availability	.403	.308	.280	.246	1.000	.303
value vs. price	.253	.482	.185	.248	.303	1.000
	Female					
	advertising	product quality	manuf.name	price	availability	value vs. price
advertising	1.000	.215	.355	.121	.395	.295
product quality	.215	1.000	.239	.116	.191	.408
manuf.name	.355	.239	1.000	.174	.211	.199
price	.121	.116	.174	1.000	.195	.188
availability	.395	.191	.211	.195	1.000	.241
value vs. price	.295	.408	.199	.188	.241	1.000

**Table 2. Characteristic roots and percentage of variance explanation of the extracted main components**

components	Male		
	Eigen. value	% variance	cumulative % var.
1	2.398936	39,98	39,98
2	0.960927	16,01	55,99
	Female		
	Eigen. value	% variance	cumulative % var.
1	2.208610	36,81	36,81
2	0.956426	15,94	52,75

The first component among male interviewees has exhausted 40% of total variances for 6 individual variables. As for female interviewees, their percentage was 37%. In both cases this can be deemed an excellent result, with multiple practical meaning. Most importantly, the structure of these components among both interviewees' genders will clearly show which elements, i.e. variables should serve the companies as a basis for their influence if they want to increase the probability of decision making in their favor.

First components according to the method's logic have exhausted the most of variances of individual variables. As for other components in the range, the percentage of the exhausted variance is significantly lower, but is practically equal for men (16.01) and women (15.94). Taking into account that herein we deal with a considerable scope of the common variance explained by these components, it is logical that they should be retained for further analysis, although their characteristic root is slightly, but still lower than 1.

Besides these individual values, it is worth saying that the overall variance explanation, with 2 components each, is of a satisfying scope, and in both cases it is almost the same: 55.99 or 56% for male and 52.75 or 53% for female interviewees. However,

it cannot be omitted that initial variables in both samples still have a considerable percentage of residual variance. Low linear correlations between the initial variables are the best proof that residual variance does not contain any latent structures which, in terms of their importance, could be more remarkable and important for the decision making process. This percentage of residual variance is probably the consequence of very different nature of the initial variables, or of such observation of the same variables by both gender interviewees.

The structure of latent dimensions obtained upon the transformation of the main components into varimax positions is far more important for the nature of the problem being analyzed than those residuals. Data on the contribution of certain variables to those latent dimensions is presented in Table 3.

**Table 3. Loads of variables to factors in varimax position**

Variables	Male	
	F1	F2
1. advertising	.069	.823
2. product quality	.770	.188
3. manufacturer's name	.165	.696
4. price	.557	.160
5. availability	.327	.647
6. value vs. price	.811	.122
	Female	
	F1	F2
1. advertising	.733	.185
2. product quality	.094	.859
3. manufacturer's name	.609	.196
4. price	.481	.062
5. availability	.728	.084
6. value vs. price	.228	.780

A careful analysis of the structure of the obtained latent dimensions demonstrates important and interesting results.

Firstly, there is practically no variable which does not participate in defining latent dimensions whether amongst male or female interviewees. At the same time, the first latent dimension in the male sample was defined by the product quality (.770), price (.557), and value vs. price ratio (.811). This dimension does not include product advertising (.069), manufacturer's name (.165) and product availability (.327). The second latent dimension in this sample was defined by the variables absent in the previous case: product advertising (.823), manufacturer's name (.696), and product availability (.647).

Secondly, the situation is quite similar in the female sample, but the positions of latent dimensions have changed. The first dimension in this sample is very similar to the second dimension in the male sample, and is defined by: product advertising (.733), manufacturer's name (.609), and product availability (.728). The only, but important difference is that decision on purchase of a certain product among female buyers is considerably affected by product price (.481), while this influence is negligible among male buyers (.160). The second dimension in the female sample was defined by product quality (.859) and value vs. price ratio (.780). This factor would be almost identical to the first one, i.e. the first latent dimension among men, if it was not for the discrepancy created by product price. The female sample actually demon-

strates that when decisions are made based on the product quality and estimate of the value obtained for the price, the price of the product itself does not play any role (.062). This is not the case with men, and no matter how much they value the product quality, and value vs. price ratio, male subjects significantly calculate the price they have to or can pay.

Thirdly, these discrepancies between male and female potential buyers are not the only ones that exist. It seems that the position of latent dimensions determined by the scope of the explained variance is not accidental, and that this area hides important specificities related to the decision-making process of both genders interviewees.

**IV Discussion.** What can be noticed immediately upon the results inspection is that companies use these 6 elements with good reason to influence the consumer decision-making (Maricic, 2011; Radulovic, 1998; Bradely, 1995). This conclusion actually arises from the fact that all 6 elements constituting the main set of their offer have a significant impact on the nature of latent dimensions of crucial importance for the decision-making process.

These elements, however, do not have the same effect in terms of defining these dimensions. In the population of potential male buyers, these 6 elements are defined by 2 latent dimensions. The first of them is far more important since it contains doubled percentage of the explained variance. That dimension is determined by the "product quality" and "value vs. price ratio". This practically means that the majority of male buyers do not pay attention to product advertising when making a decision on purchase (.069), they pay very little or no attention to the manufacturer's name and product availability, i.e. whether they can take the product over immediately or they have to wait for it. Their decision is to a certain extent affected by product price, but the importance of this variable is not even close to the same level as the importance of "product quality" and "value vs. price ratio". Moreover, this relation between product quality and value vs. price ratio is the most important element in the decision-making process for men (.811).

It can be concluded that this dimension describes a "rational" approach of buyers in decision-making. More precisely, rationality as the most important criterion whether to buy or not to buy a certain product. This is why it can be identified as the "rational decision-making about the purchase". The idea of rational approach and rational decision-making is corroborated by the status held by the "product price" variable in this dimension (.557). It actually is not the priority aimed at determining the nature of a decision, but it is there, constantly "reminding" buyers they have to take care of it in terms of obtaining higher value for the accepted price (Schiffman, Kanuk, 2004).

The basis of rational consumer decision-making is the ability to control emotions, retain low impulsiveness and apply various types of cognitive abilities. This is in the male buyers population a dominating form of reaction to elements making a set of a company's offer when addressing buyers. This is at the same time a dominating form of decision-making process related to purchase within this type of buyers. Such dominance is proved by the fact that the first latent dimension in the male sample exhausts as much as 40% of the common variance of all 6 variables used to study the influence on the decision-making process.



Rationality in decision-making also exists amongst female population, although it is indisputable that women's life is more based on and rich in emotions. Research of factor structure of elements used by companies to affect these purchasing decisions resulted in latent dimension of almost identical structure for female and male population. It is also defined by the product quality in female sample as well (.859), and by the value vs. price ratio (.780). As well as in the case of men, it is in this case as well independent from product advertising (.185), manufacturer's name (.196) and product availability (.084). However, female buyers are also independent from product price (.062), and this is a "particularity" which looks small, but important, differentiating this dimension from the one in the male sample. There is also another, at first sight small, but important difference. Decision-making in case of female sample is far more dictated by product quality than by the value vs. price ratio for the product.

If we analyze this latent dimension in whole, it comes out that decisions made by female population are made rationally, primarily based on product quality and independently from advertising, manufacturer's name, availability, even the price. It seems that this dimension can also be identified as "rational decision making about the purchase", since it is almost identical to the one in the male sample. The problem in determining its real nature is created by a complete absence of the influence of the product price on that structure. If decisions are made only based on knowledge about the quality and benefits obtained from that quality, while completely ignoring the price of the desired product, then we have either a very rich or very pragmatic person. It is more probable that we have the latter case, and that is why it seems that nature of this dimension is rather pragmatic, not rational behavior in decision-making process. Due to that reason, this latent dimension will be identified as "pragmatic decision making process" in purchasing. The finesse we here insist on is more of theoretical than of practical nature. This is an important detail because it makes companies free to create specific models for product advertising for male and female buyers. Of course, we are talking about the products that are not specifically intended for women or men only.

Pragmatics in making a purchase decision is not actually the most important characteristic of the decision making process when female buyers are in question. Latent dimension of that meaning is the second in range, and it exhausts only 15.94% of the joint variance. This is, compared to the variance percentage exhausted by the "rational decision making about the purchase", in the male sample, double less (15.94% : 39.98%). This discrepancy is probably a consequence of different personality complexes between the people of different genders, maybe of the above mentioned emotions, but this does not mean that companies should stop addressing these buyers as well. Far more important latent dimension in female population, actually the one that affects the decision on purchase to the greatest extent, is defined by product advertising (.733), manufacturer's name (.609) and possibility of immediate taking over (.728). That dimension is the first one isolated from the female sample of 6 variables companies use in their attempts to influence buyers, and it exhausts 36.81% of the common variance of these variables. This percentage of the common variance is the reason why it can be claimed that it has more important status, and that decision making based on these elements is dominating in female population. The nature

of these elements and direction of correlations between them and latent dimension show that this decision making model related to purchase will be more often among those women who are exposed to advertisements to greater extent, and who want to have the product immediately available. It is important to stress that this dimension is significantly affected by product price (.481), although it does not affect the core content of the latent dimension. This variable is this time a subject of interest because it has different meaning from the time it participated in the description of first dimension isolated in the male sample. In the female sample product price is in conjunction with advertising, manufacturer's name, and product availability, and in that context, but not in the interaction with quality, makes the decision-making process related to purchase more probable. Even in this case we are not talking about easier and faster decision-making when the price is low. We are not talking about the decisions made by the members of population who have to take care of product price due to economic reasons. If this was the case, the correlation of this variable and latent dimension would be higher than the correlation of other variables, and would be dominating in defining the structure of that dimension. This position of the "product price" can be best explained through the nature of that latent dimension. This dimension is, as already stated, basically determined by the frequency of advertising, manufacturer's name, and product availability, i.e. possibility to take the product over without waiting. This set of variables almost ideally describes the "impulsive decision making", so this latent dimension should be interpreted in such way. Impulsive decision making is based on permanent repetition of well designed message placed in the middle of potential buyers' attention in different ways. An inseparable part of such message is statement of product brand and the way how to get to it. The buyers with high scores of impulsiveness and suggestibility accept such messages perceiving only those elements. Product price is in their mind only when it is stressed in advertisement, but not even in such case if they do not have money problems or if a product can be paid for in crediting installments. Product price is therefore a collateral, side part of advertisement, and that is why its role is collateral in case of impulsive purchase.

Impulsive decision-making is not, however, a characteristic of female buyers only. Latent dimension of the same structure is also found in the male sample, but it is in the second place and exhausts only 16.01% of the common variance compared to 36.81% as in the female sample. It is in this case also defined by the same variables and describes those male buyers who make decisions about the purchase if they are more frequently exposed to advertisements (.823), and taking care of manufacturer's name (.696), as well as of the possibility to take the product immediately (.647). The product price is still present, but with far less influence than in the female sample (.160). Excessive domination of product advertising in determining the nature of this dimension compared to other variables suggests there are buyers in male population who pay far more attention to advertisements than to other elements of the offer, such as manufacturer's name or product availability.

**V. Conclusion.** The factor analysis of 6 variables used by companies to affect the decision-making related to purchase of their products, conducted on the large samples of potential male and female buyers, has generated a range of valuable and interesting results. In brief, they can be expressed through the following regularities:



1. 5 of 6 elements used by companies to encourage buyers to opt for their product function in reliable and proper way. This conclusion is a result of the fact that they significantly participate in defining the structure of the existing latent dimensions, and that they have high correlation coefficient correlation with those dimensions. This conclusion is corroborated by the fact that defining these dimensions included a simple structure phenomenon. A certain deviation from these regularities is shown through the "product price" variable, correlations of which with latent dimensions suggest its supporting role and possible belonging to other space.

2. These 6 variables enabled isolation of 2 latent dimensions in each sample, i.e. 2 in the male and 2 in the female sample. The interior structure of those dimensions is almost the same: there are latent structures in both male and female samples, meaning of which is identified as: 1) "rational decision-making about the purchase" and 2) "impulsive decision-making".

3. Smaller discrepancies in the interior structure of those dimensions are more of theoretical than of practical meaning. The dimension "rational decision-making about the purchase" in the female sample, for example, contains more of pragmatics than of rationality. Still, the basic nature of the dimension has not significantly changed and can be used in one and another meaning.

4. Really emphasized and important discrepancies between genders have been noticed in positions of these dimensions, and are expressed within the scope of the exhausted common variance of the initial variables. In the male sample, this variance scope is highly dominated by the "rational decision-making related to purchase", while in the female sample, the dominating one is the "impulsive decision making".

5. This "impulsive decision-making" is a collateral dimension among men, while dimension of the "rational decision-making related to purchase" is collateral one among women.

6. The implications of these results in practice are multiple. It seems that the most remarkable are those related to the structure of latent dimensions and discrepancies between genders. In case of all the products intended for men, and those that most commonly fall under their scope of decision-making (technical goods, cars, and so on), the focus should be placed on high quality and cost effectiveness, since this will be taken into account on the occasion of a purchase. As for the products intended for women, or those that fall under the scope of their decision making, the focus should be placed on advertisements and adjustment of commercials to their personal and social characteristics. Due to very high degree of participation of the variable describing the possibility to take the product over immediately among women, presentation-related sales should also be the focus.

7. Companies' marketing experts should never forget, that a smaller, but very important part of male population reacts to advertisements and makes purchase-related decisions impulsively, as well as that female population has a smaller part who puts the product quality high above other aspects, being very rational in purchase-related decision-making.

8. The set of latent dimensions of the "impulsive decision making" for both male and female samples contributes to fast decision-making process related to purchasing in shops, especially if a product can be taken over immediately.

**References:**

1. *Armstrong, G., Kotler, Ph.* (2005). *Marketing. An Introduction*. Seveth edition, Pearson Prentice Hall, Inc. Upper Saddle River, New Jersey.
2. *Bradely, F.* (1995). *Marketing management, providing, communicating and delivering value*, Prentice -Hall, London.
3. *Jansson-Boyd, V.C.* (2010). *Consumer psychology*, Open University Press Mc Gaw Hill New York.
4. *Kotler, Ph., Keller, K.L.* (2006). *Marketing Management*, twelfth edition, Pearson Prentice Hall, Upper Saddle, River, NJ.
5. *Maricic, B.* (2011). *Ponasanje potrosaca* Centar za izdavacku delatnost Ekonomskog fakulteta Univerziteta u Beogradu.
6. *McCracken, M.* *Women as Consumers*, URL: <http://unpac.co/economy/consumers>.
7. *Radulovic, D.* (1998). *Psihologija marketinga*, Institut za kriminoloska i socioloska istrazivanja, Beograd.
8. *Schiffman, G.L., Kanuk, L.L.* (2004). *Consumer behavior*, eight edition, Pearson Prentice Hall, Inc., Upper Saddle River, New Jersey.
9. *Sollomon, M., Stuart W.E.* (1997). *Marketing: Real People, Real Choice*. Prentice Hall International Inc Upper Saddle River, New Jersey.
10. *Wells, D.W., Prensky, D.* (1996). *Consumer Behavior*, John Wiley and Sons, Inc. New York.

Стаття надійшла до редакції 03.10.2012.