

THE SPANISH CERAMIC PRODUCT REPLACEMENT MARKET: WHAT THE END-USER VALUES

**Miguel Angel Moliner Tena, Javier Sánchez García, Miguel Angel López Navarro,
Lluís Callarisa Fiol and Rosa María Rodríguez Artola.**

IMK, Innovation in Marketing
Research Group of the Advanced Services Network of
Universitat Jaume I of Castellón. Spain

ABSTRACT

The present paper sets out the results of a study conducted on the Spanish ceramic product replacement market. Based on 402 interviews performed in Madrid, La Coruña and Valencia, the study analyses the perceived post-purchase value by consumers who recently acquired ceramic products. The results show that the dimension of the perceived value that most influences satisfaction with the purchase made is the quality of the acquired product. The second most important element is the professionalism and treatment by sales staff at the sales outlet where the product has been purchased. Third is the pleasantness of the sales outlet. Fourth, in influence, is the appeal of the acquired product, and the range of products and services of the sales outlet.

1. INTRODUCTION

A perusal of the economic press reveals a predominant interest in the strategy of companies to offer their clients more and more value. The big companies show their concern for the end-buyer, studying buyer behaviour and trying to adapt their offers to the different identified segments.

The capacity of companies and organisations to transmit higher value to their clients is considered to be the true sustainable competitive advantage in the 21st century. Business organisations must become value suppliers and must do this in different ways from each other, since this ability is going to enable them to differentiate themselves, improve their results and increase their possibilities of future survival.

This paper sets out the results of a study conducted by IMK Innovation in Marketing, funded by the Generalitat Valenciana (Regional Government), on the perception of value and satisfaction by consumers of Spanish ceramic products (replacement market).

In the study two group dynamics were conducted in Madrid in September and October of 2001. On the basis of this information, a questionnaire was designed. This was followed by a survey of 402 consumers over 18 years of age, who had bought ceramic products in the last 3 years. The sample was spread evenly over three cities: Madrid, Valencia and La Coruña, such that 134 interviews were held per city. The sampling procedure was random, with shares per cities, stratified by ages. The fieldwork was conducted in December of 2002.

2. RESULTS OF THE STUDY

After tabulating the data, we proceeded to perform the analyses. First, we analysed the psychometric properties of the scales of perceived value of the purchase made, and their dimensionality. This same study was conducted for the scale for measuring satisfaction with the purchase made. Finally, the relations existing between perceived value and satisfaction were compared through a causal model.

2.1. DIMENSIONALITY AND RELIABILITY ANALYSIS OF THE SCALES OF PERCEIVED VALUE

The reliability analysis was made for each of the subscales (establishment, personnel and product).

2.1.1. Perceived value of the establishment where the ceramic tiles were bought

Factorial Analysis of Principal Components was applied. As the following tables show, four factors have been identified, which explain a very high percentage of the explained variance (69.54%).

Before proceeding with the explanation of the factors it was necessary to verify that the statistics associated with the Factorial Analysis of Principal Components were correct. The determinant of the correlations matrix was very close to 0, the Kaiser-Meyer-Olkin test was very close to 1, Barlett's test of sphericity was smaller than 0.05, and the explained variance was above 50%.

Determinant of the correlations matrix	0.000
Kaiser-Meyer-Olkin	0.922
Significativeness of Barlett's test of sphericity	0.000
Total explained variance	69.56%

After analysing the statistics of the technique used, we proceeded to interpret the factors. The results obtained enabled determining that the perceived value of the tile sales establishment was made up of four factors, which explained 69.56% of the total variance:

1. Factor 1: *Merchandising at the sales outlet*. It can be observed that this refers to functional aspects related to the internal signalling, organisation and arrangement of the sales surface, amplitude, modernity and cleanness of the facilities, and its location. That is, aspects entirely related to merchandising, with the logic that this marketing technique applies to its decisions. This factor is the most important one in the evaluation of the establishment, as it explains 46.18% of the total variance.

Item	Factorial load
The interior was well signalled	0.79
The establishment was well-ordered and organised	0.77
The installations were roomy, modern and clean	0.73
The establishment was well-located (easily locatable, centric and/or or well-communicated)	0.64
The inner distribution facilitated confidentiality and privacy in the treatment	0.63
The shop window was attractive and appealing	0.59
Explained variance	46.18%
Cronbach's alpha	0.87

Factor 1. Merchandising at the sales outlet.

2. Factor 2: *Range of products and services at the sales outlet*. This is the second factor in importance in the evaluation of the ceramic tile sales establishment. It also refers to cognitive or rational aspects, such as the assortment of ceramic tiles, their quality, product support services, quality of the services offered and value for money of the establishment. However, the private buyer of ceramic tiles values these aspects much less than the merchandising of the establishment. In fact, this factor explains 10.64% of the total variance.

Item	Factorial load
There was a great variety of ceramic tiles	0.77
They were high quality products	0.72
The establishment offered a wide variety of product support services (tile installation, transport, guarantee, financing...)	0.72
The above services were high quality	0.71
In general the establishment was not expensive for the quality offered	0.67
Explained variance	10.64%
Cronbach's alpha	0.83

Factor 2. Range of products and services at the sales outlet.

3. Factor 3: Pleasantness of the sales outlet. This captures aspects related to emotions (feeling relaxed, comfortable, enjoyment, pleasure) that the establishment has generated in the buyer. Its importance is not very high (it explains 7.3% of the total variance), but the reliability is very good, since Cronbach's alpha is 0.90.

Item	Factorial load
I felt relaxed in it	0.78
I felt at ease in it	0.77
I enjoyed buying in it	0.72
I liked it	0.59
<i>Explained variance</i>	<i>7.3%</i>
<i>Cronbach's alpha</i>	<i>0.90</i>

Factor 3. Pleasantness of the sales outlet

4. Factor 4: Social value of the sales outlet. The fourth identified factor refers to the evaluation that is made of the persons who buy in this establishment. It refers to the improved perception and social approval that the purchaser achieves by buying in the establishment. The third item identifies the importance of the reference group. It explains 5.42% of the total variance, and its level of internal coherence is also very high, since Cronbach's alpha is 0.87.

Item	Factorial load
Buying in that establishment has improved the way I am perceived by others	0.90
The people who buy in that establishment obtain social approval	0.90
The people who buy in it have a certain status and style	0.72
<i>Explained variance</i>	<i>5.42%</i>
<i>Cronbach's alpha</i>	<i>0.87</i>

Factor 4. Social value of the sales outlet

Thus, the study of the reliability and dimensionality of the measurement scale of perceived value of the ceramic tile sales establishment has led to the identification of four factors which explain 69.56% of the total variance. The reliability study allows concluding that the scale obtained is reliable, since Cronbach's alpha for each identified factor exceeds 0.83. It has not been necessary to eliminate any item from the scale to increase the reliability; therefore, the original scale displays good psychometric properties.

As far as the interpretation of the results is concerned, it may be noted that the two most important factors are cognitive or rational responses (merchandising at the sales outlet and range of products and sales services), whereas the two least important factors are emotional responses (pleasantness and social impact). While the two cognitive dimensions account for 56.82% of the total variance, the affective dimensions sum 12.72% of the total explained variance. Therefore, in the consumer's evaluation of the establishment in which the ceramic tiles have been purchased, the rational and cognitive components are prioritised and, in particular, the merchandising of the sales outlet.

2.1.2. Perceived value of the sales force in the establishment where the ceramic tiles were bought

First, we applied Factorial Analysis of Principal Components to the designed scale to measure the perceived value of the sales force in the ceramic tile sales outlet. The statistics that determines the goodness of the analysis are correct.

Determinant of the correlations matrix	0.000
Kaiser-Meyer-Olkin	0.926
Significativeness of Barlett's test of sphericity	0.000
Total explained variance	65.59%

Two factors have been identified that explain 65.59% of the total variance. In the interpretation of these factors it is also easy to differentiate the cognitive component from the emotional component:

1. Factor 1: *Treatment by personnel at the sales outlet*. The first identified factor is an eminently emotional dimension, since it refers to the feelings aroused by the attitude and behaviour of personnel. This is the most important factor in the perceived value of sales staff at the sales outlet where the tiles were bought, since, by itself, it explains 56.13% of the total variance. The analysis of reliability through Cronbach's alpha displays a value of 0.91.

Item	Factorial load
I really felt appreciated by the establishment staff	0.83
They gave me positive feelings	0.77
The staff was friendly and nice	0.70
There was always a willingness to satisfy my desires as a client, independently of the product that I wished to buy	0.69
The staff was pleasant	0.69
One noticed that the staff was very helpful	0.64
I was not pressed to make a rapid decision	0.64
The staff was suitably dressed and tidy	0.59
Explained variance	56.13%
Cronbach's alpha	0.91

Factor 1. Treatment by personnel at the sales outlet

2. Factor 2: *Professionalism of personnel at the sales outlet*. The second factor is a cognitive response, related to staff professionalism. This factor captures features like their professionalism, knowledge of ceramic tiles, how up to date their information is, knowledge of sale techniques, and the advice given. It explains 9.45% of the total variance, and the scale has a Cronbach's alpha of 0.89.

Item	Factorial load
The staff was a good professional	0.84
The staff knew the tiles in the establishment well	0.79
The staff member was well-informed of the latest products and tendencies	0.79
The staff knew his/her work well	0.75
The advice was valuable	0.69
Explained variance	9.45%
Cronbach's alpha	0.89

Factor 2. Professionalism of personnel at the sales outlet

Therefore, in the perceived value of sales outlet personnel, an emotional component and a cognitive one are clearly identified. In the case of the perceived value of sales outlet staff where the ceramic tiles were bought, the treatment and the attention to the public was fundamental to making the sale, since it explains 56.13% of the total variance. The scale obtained is reliable, since Cronbach's alpha for each of the foregoing factors is above 0.89.

2.1.3. Perceived value of the acquired ceramic tiles

The third aspect to be measured in the perceived value was the perceived value of the acquired products or services. After analysing the dimensionality and reliability of the scale relating to the physical conditions and to the sales force at the sales outlet, we studied the scale designed to measure the perceived value of the acquired products or services.

Determinant of the correlations matrix	0.000
Kaiser-Meyer-Olkin	0.888
Significativeness of Barlett's test of sphericity	0.000
Total explained variance	77.40%

With regard to the dimensionality of the scale relating to the perceived value of the acquired ceramic tiles, the Factorial Analysis of Principal Components also displays acceptable statistics that confirm the goodness of the analysis.

Four factors have been identified that explain 77.40% of the total variance. Therefore, also in this case, the total explained variance is very high. The factors identified are discussed below.

1. Factor 1: *Product quality*. The first dimension refers to acquired product quality. In particular, it captures aspects like the tile's performance, its durability, manufacture, comparison in quality with other ceramic tiles and the tile's value for money. This factor explains 45.79% of the total variance. Cronbach's alpha reaches an excellent value of 0.89.

Item	Factorial load
They have performed as expected	0.83
The quality of the tiles has lasted throughout time	0.81
They were well made or fabricated	0.79
They had an acceptable level of quality compared with other ceramic tiles	0.77
It has been a good purchase for the price paid	0.62
<i>Explained variance</i>	<i>45.79%</i>
<i>Cronbach's alpha</i>	<i>0.89</i>

Factor 1. Product quality

2. Factor 2: *Product appeal*. It is an eminently emotional factor. It captures aspects relating to emotions (feeling relaxed, enjoyment, comfortable, pleasure) that the purchased tiles have aroused in the buyer. This is an important factor, which explains 16% of the total variance. Cronbach's alpha reaches a value of 0.89.

Item	Factorial load
I feel relaxed	0.83
I enjoy them	0.83
I feel comfortable with them	0.81
I like them	0.52
<i>Explained variance</i>	16.0%
<i>Cronbach's alpha</i>	0.89

Factor 2. Product appeal

3. Factor 3: *Social value of the product*. This factor is an emotional dimension; however, it is related to people who buy that same brand of tiles. It refers to social approval and to the perception of improvement that the buyer obtains by acquiring these tiles. The third item identifies the importance of the reference group. This factor explains 9.03% of the total variance. Cronbach's alpha reaches a value of 0.90.

Item	Factorial load
The people who purchase these obtain social approval	0.92
Buying these improves the way I am perceived by others	0.90
They are people of a certain status and style	0.83
<i>Explained variance</i>	9.03%
<i>Cronbach's alpha</i>	0.90

Factor 3. Social value of the product

4. Factor 4: *Product price*. The fourth factor is an eminently cognitive dimension, since it captures two aspects relating to tile price. Therefore, although price is an important purchase criterion, it is not the fundamental one. It explains 6.57% of the total variance. Cronbach's alpha is notable (0.71).

Item	Factorial load
They had a reasonable price	0.81
The price was the principal decision criterion	0.76
<i>Explained variance</i>	6.57%
<i>Cronbach's alpha</i>	0.71

Factor 4. Product price

The results show that the perceived value of the product is a multidimensional construct made up of four 4 factors. The most important factor is quality in a broad sense, although the emotional components acquire great importance. Indeed, the cognitive responses explain 52.36% of the total variance, whereas the emotional responses account for 25.03% of the total explained variance. In addition, the obtained scale is reliable, since Cronbach's alpha for each of the foregoing factors is above 0.71.

2.2. DIMENSIONALITY AND RELIABILITY ANALYSIS OF THE SATISFACTION SCALE

Having concluded the reliability and dimensionality analyses of the perceived value measurement scale, we proceeded to perform the same analyses for another construct being studied: satisfaction. This variable has been measured for the two sectors of activity, which is why the analyses were performed separately.

Factorial Analysis of Principal Components was applied and, as the following table shows, the statistics that determine the goodness of the factorial analysis of principal components are acceptable.

Determinant of the correlations matrix	0.002
Kaiser-Meyer-Olkin	0.842
Significativeness of Barlett's test of sphericity	0.000
Total explained variance	65.51%

A single factor has been identified that explains 65.51% of the total variance. That is to say, all the items used to measure the satisfaction with the establishment and the acquired ceramic tiles are captured in a single factor that we shall term satisfaction with the purchase made.

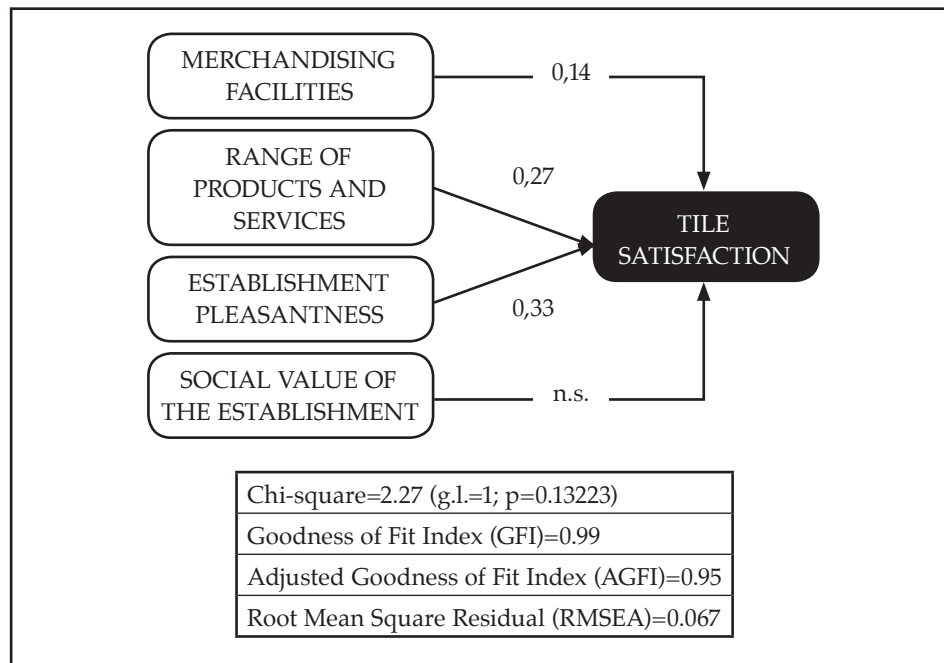
Item	Factorial load
I am satisfied with the tiles bought	0.84
The expectations I had regarding the establishment have been met at all times	0.82
The expectations I had regarding the acquired tiles have been met	0.81
With regard to other tiles that I have seen, the degree of satisfaction is high	0.80
I have always felt satisfied with the establishment	0.79
The level of satisfaction reached has been high in comparison with that in similar establishments	0.79
<i>Cronbach's alpha</i>	0.89

This construct captures the satisfaction with the acquired product, the satisfaction of the expectations formed of the sales outlet and of the acquired product, the degree of satisfaction with respect to the product in regard to other competitors, the satisfaction with the establishment and the degree of satisfaction with the sales outlet compared to that with similar establishments. The scale is reliable, since Cronbach's alpha reaches a value of 0.89.

2.3. ANALYSIS OF THE CAUSAL RELATIONS BETWEEN PERCEIVED VALUE AND SATISFACTION

After performing the preliminary analyses that confirmed the good psychometric properties of the scales and which, in addition, have enabled identifying a set of factors, we proceeded to study the causal relations which were established between the two variables being studied: the perceived value and satisfaction.

Thus, starting with the mean values of the items that comprise each of the dimensions obtained in the confirmatory factorial analyses, the causal relations between the perceived value and satisfaction were established. First, we studied the existing relation between the perceived value of the sales outlet where the product was acquired and the satisfaction with the purchase made.



Graph 1. Causal relations between the dimensions of perceived value of the sales outlet where the tiles were bought and the satisfaction with the purchase

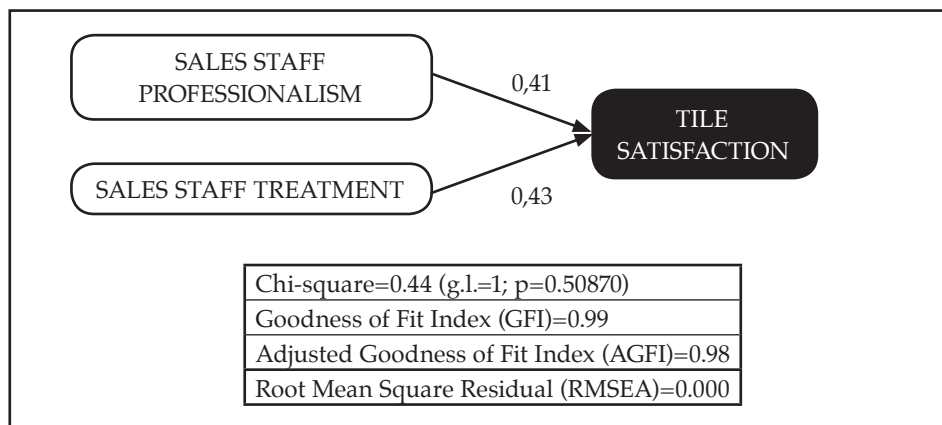
The causal model is based on the analysis path. The model fits satisfactorily, since the probability of the chi square statistic exceeds 0.05, the GFI and the AGFI are close to unity, and the RMSEA is close to zero. The causal relations shown are significant (value $t > 1.96$); in the case a relation is not significant this is indicated by the abbreviation 'n.s.' The parameters shown are the ones relative to the completely normalised solution.

With regard to the interpretation of the results in Graph 1, it may be concluded:

1. First, the dimension of the perceived value of a ceramic sales outlet that most affects the satisfaction with the performed purchase is the pleasantness of the sales outlet.
2. Secondly, the next most important effect stems, in both models, from the range of products and services at the sales outlet.
3. Thirdly, the last significant relation stems from the merchandising at the sales outlet.
4. Finally, the social value of the establishment has no significant influence on the satisfaction with the purchase made.

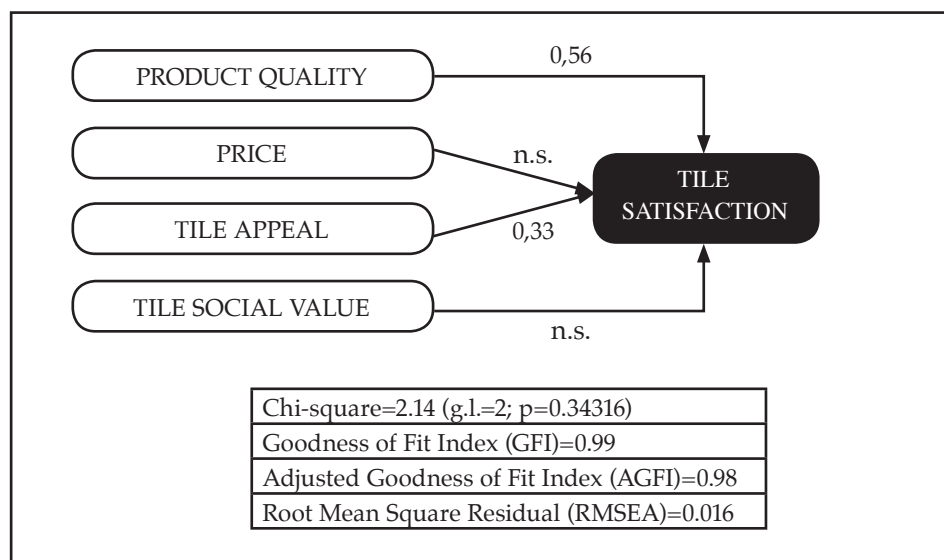
Therefore, while the factors that generated value in the establishment were basically the cognitive ones, in regard to satisfaction, the most important factor relating to the establishment was emotional.

Secondly, we studied the relation existing between the perceived value of the sales outlet staff where the product was bought and the satisfaction with the purchase made. Graph 2 shows the model resulting from the Path analysis. The perceived value of sales staff professionalism and treatment are observed to have a significant influence on satisfaction with the purchase made. The influence of the affective dimension is a little more important than the cognitive one. In the model, the cognitive value and the affective value regarding personnel display a significant correlation (value $t > 1.96$).



Graph 2. Causal relations between the dimensions of perceived value of the personnel of the establishment where the tiles were bought and satisfaction with the purchase made

Finally, a study was performed of the causal relations existing between the perceived value of the acquired product and satisfaction with the purchase made. The last model (Graph 3) allows drawing a series of interesting conclusions:



Graph 3. Causal relations between the dimensions of value perceived of the acquired tiles and satisfaction with the purchase made

1. The quality of the product acquired is the factor that most influences satisfaction with the purchase made.
2. The next most important relation is the appeal of the acquired product.

3. The influence of the social dimension of the value is not significant.
4. Price has no significant effect on satisfaction.

Therefore, although in the factorial analyses a series of factors have been identified that make up the perceived value, their influence differs in the satisfaction with the purchase made. Together with the foregoing relations, it may be noted that the four dimensions of value considered in this section are correlated in a significant way (value $t > 1.96$).

3. CONCLUSIONS

The study has identified 10 factors that make up the perceived value of a purchase (four relating to the sales outlet; two relative to sales outlet staff, and four relating to the product).

Although the study has been conducted in parts, it suggests that the dimension of perceived value that most influences satisfaction with the purchase made is the quality of the acquired product. The second most important element is the professionalism and treatment of the sales outlet staff where the product was acquired. Third is the influence of the pleasantness of the sales outlet. In the fourth place, there is the appeal of the acquired product and the range of products and services at the sales outlet. Finally, the merchandising at the sales outlet also has an influence on satisfaction with the purchase made, although this is smaller. The social value is the only factor that has no general influence, in any of its aspects, on satisfaction with the purchase made.

The ceramic product consumer identifies a series of elements, which are those that provide an offer with value, and make it more attractive than that of the competition. The fundamental elements are the merchandising at the sales outlet, treatment by the sales staff of the establishment, and product quality. From the point of view of a ceramic product manufacturing company, to strengthen its competitive edge, the company must look after its distribution policy, choosing those sales outlets that carefully attend to their sales floor, because these are much more likely to be chosen by the buyer. The company must also pay attention to the sales staff in these stores, and attempt to gain their favour through economic ties (sales promotions, extras, prizes, gifts, trips, training...) and emotional ties (treatment, favours, confidence, commitment). Finally, it is necessary to attend to product quality, in which there is also a third agent involved: the tile fixer. It should be noted that the price is not a determining element in the purchase of the ceramic product, since there are other elements to which the end-consumer pays closer attention.

However, not everything that has value for the consumer and, therefore, makes the consumer choose a particular ceramic product, over those of the competition, is also a reason for satisfaction. Satisfaction is generated after use, and is a key element in fidelity and repetition of purchases, whether this is in a certain establishment or in a brand of ceramic products. It is also the basis for word of the mouth communication, which is so influential in the emotional purchasing behaviours identified in the qualitative study. In this case, the elements that need to receive particular attention are product quality in a broad sense, sales outlet personnel in their cognitive and emotional aspects, and the emotional aspects related to the establishment and the product, as well as the cognitive aspects related to the sales outlet.

These remarks raise a critical question for a great majority of the companies in the ceramic sector: when the end-consumer does not recognise a brand, the fidelity is towards the establishment. Thus, if the establishment changes its ceramic products manufacturer, this will not cause the consumer any traumas, because the manufacturer's brand is not valued. In other words, most companies in the sector have followed a 'push' strategy (promoting themselves among the distributors), leaving in the background the 'pull' strategy (promoting themselves among the end-consumers). Complementing the 'push' strategy with the 'pull' strategy will get the consumer to value the ceramic brand, which then becomes an element that has an emotional value and, therefore, becomes an important element when it comes to choosing a product.