

# **The Moderating Effect Of Innate Innovativeness On Consumer Response To Symbolic And Functional Innovations**

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## **Abstract**

*In the present economic environment, where technological advances happen very quickly and a product's life cycle is cut short, companies need a strategy for new product development, but also need to know the factors that determine the market success of new products. Innovations arise as a result of the incorporation of new attributes to existing products; the nature of the new attributes can influence consumer reactions to innovations. In this paper, we analyse how consumers evaluate innovations and how this evaluation is affected by individual innate innovativeness. Results confirm a higher preference by high innovators for functional innovations, especially when they are added to functional products. For low innovators, both types of innovations, functional and symbolic, are equally evaluated, although symbolic innovations receive higher evaluations when they are incorporated into symbolic products.*

Keywords: product evaluation, functional and symbolic innovations, innate innovativeness

## **Introduction**

Firms invest in new product development in an attempt to attain industry leadership, thus securing high profits as well as the success of future product generations (Ofek and Sarvary, 2003). Market success depends on consumer response to products, which is motivated by consumer adoption and, to a large extent, by the consumer evaluation of the new product.

In most situations, innovations arise as a result of the incorporation of new attributes into an existing product. The impact of a new feature on product evaluations depends on four factors: 1) characteristics of the feature itself and the innovation type, 2) characteristics of the product to which the features is added, 3) characteristics of the buying task, and 4) other factors, such as the marketing strategy or the competitive and social environment (Nowlis and Simonson, 1996). Focusing on the first two factors, we propose that the impact of a new feature on product evaluations must be analysed considering not only attribute type and product meaning, but also individual characteristics, which may also affect consumers' evaluations of the new product. In this sense, innate innovativeness plays an important role in the diffusion and adoption of innovations (Blythe, 1999; Park and Dyer, 1995). Nonetheless, no research to date has analysed the effect of this variable on consumers' evaluations of an innovation. The goal of this research is to contribute to the explanation of differences in new product evaluation, by introducing arguments not related to the characteristics of the innovation. The

objective of this study is to analyse the moderating effect of individual innate innovativeness on consumers' evaluation of new products.

### **Innovation Type and Product Meaning**

The nature of the product plays an important role in consumer evaluations. It is therefore important to consider that the role the purchase plays in a consumer's life depends, at least partly, on whether the consumer perceives the product to be functional or symbolic (Fournier, 1991).

#### **Symbolic and functional meaning of the product**

People buy products not only for what they can do, but also for what they mean (Hirschman, 1986). Symbolic meaning represents those symbols and messages that are unconsciously recognized by consumers and are used as a mean to represent their personality (Gotzsch, 1999). On the other hand, functional or utilitarian meaning refers to those aspects of the product that allow users to control their environment (Allen et al., 2002), and is based on physical characteristics and benefits associated with the product (Ligas, 2000; Fournier, 1991).

#### **Symbolic and functional innovations**

Hirschman (1986; 1982; 1981) classified innovations on two dimensions: symbolic and technological. Hirschman defines symbolic innovations as those that result from the reassignment of social meaning to an existing product, generating a secondary diffusion among those identifying with the relevant reference group. Technological innovations are those that spring from the addition or alteration of tangible features in a product (Hirschman, 1982). Recently, Ziamou and Ratneshwar (2003) introduced the concept of innovation in functionality, defined as a product that makes a novel set of benefits available to the consumer. In other words, the incorporation of functional and symbolic attributes allows for the development of functional and symbolic innovations, respectively. Symbolic attributes are associated with image aspects of the product that allow consumers to identify themselves with a group or represent their self-image, and possess social meaning (Meenaghan, 1995), while being related to visual (Eckman and Wagner, 1994) or promotional aspects (Lefkoff-Hagius and Mason, 1993). Functional attributes account for the benefits realized from the product, what the product does or does not do for the user in terms of particular actions.

Based on Hirschman's (1982) and Ziamou and Ratneshwar's (2003) definitions of functional and symbolic innovations, and considering product meaning, we can classify innovations into four groups: 1) functional innovations with functional meaning; 2) functional innovations with symbolic meaning; 3) symbolic innovations with functional meaning; and 4) symbolic innovations with symbolic meaning.

#### **Effect of type of innovations on evaluation**

There is no agreement in the literature concerning the importance of attribute type on product evaluation. Some authors, such as Meenaghan (1995) and Eckman and Wagner (1994), conclude that consumers have a tendency to show a higher preference for image attributes as compared to functional attributes. However, other authors, such as Hirschman (1987) and Moreau et al. (2001), concede more importance to technical and performance aspects of the product. This discrepancy may be explained by the product meaning. Studies related to the effect of different attributes on product evaluations have observed a greater impact of brand name rather than product benefits on evaluations of products with symbolic meaning (Del Río et al, 2001). Functional products tend to be evaluated first on tangible features and cost, and second on their intangible/image attributes (Sirgy and Johar, 1985). Furthermore, in their study focused on brand extensions, Park et al. (1991) found more favourable consumer reaction when the new attribute was consistent with the brand concept than when it was not. Consumers display a more positive reaction to functional than prestige extensions for functional brands, and similarly react more positively to prestige rather than functional extensions for prestige brands. Therefore, applying this reasoning to the combination of attribute type and product meaning as described above, we propose the following hypotheses:

*H1: For products with functional meaning, functional innovations will improve product evaluations more than for symbolic innovations.*

*H2: For products with symbolic meaning, symbolic innovations will improve product evaluations more than for functional innovations.*

### **Innate Innovativeness and its effects on innovation evaluation**

Innovators have been identified as the first individuals that adopt an innovation (Rogers, 1995; Midgley and Dowling, 1993; Bass, 1969). However, it is necessary to distinguish between the innate innovativeness, which is stimulated by consumers' genes (Hirschman and Stern, 2001), and the moment of the adoption. Due to the moderating effect of the innovation characteristics, marketing strategies and situational effects (Steenkamp et al., 1999; Midgley and Dowling, 1978), individuals with high innate innovativeness are not always the first to adopt. Im et al. (2003) define innate innovativeness as a generalized unobservable predisposition toward innovations applicable across product classes.

Individuals judge innovations differently according to their level of innate innovativeness (Blythe, 1999; Park and Dyer, 1995). The literature has not specifically analysed the effect of innate innovativeness on individuals' preference for the different types of attributes (functional and symbolic). However, it has been found that highly innovative people present greater preferences for discontinuous innovations (Aggarwal et al., 1998; Foxall and Haskins, 1986). The greater preference is motivated by the characteristics of these highly innovative people since they are more radical (Foxall and Haskins, 1986; Kirton, 1976) and possess more favourable attitudes toward change (Rogers, 1995). In addition, discontinuous innovations are associated with functional innovations because they possess fundamentally new features rather than more or less intense assignments to referent groups (Hirschman, 1982). Therefore, we propose the following hypothesis:

*H3: The improvement of product evaluations derived from a functional innovation is greater for individuals with high innate innovativeness than with low innate innovativeness, with no differences expected for symbolic innovations.*

Individuals with high innate innovativeness not only seek functional innovations, but they are also more concerned about product performance (Venkatraman, 1991), and therefore about the benefits to be realized from the product (as a group of benefits derived both from the previous concept of the product and from the new attribute). High innate innovativeness individuals, then, will show a greater preference for functional innovations with functional meaning. Furthermore, consumers will react more positively to consistent innovations (functional attributes-functional products; symbolic attributes-symbolic products), as is the case with consistent brand extensions (Park et al., 1991). Therefore, we propose:

*H4: For individuals with high innate innovativeness, functional innovations will improve functional product evaluations more than for symbolic product evaluations, with no differences expected for symbolic innovations.*

## **Method**

In order to test the above hypotheses, two hundred and nine students participated in the 2 x 2 x 2 experiment. The eight conditions consisted of high vs. low innate innovativeness, innovation type (functional/symbolic) and product meaning (functional/symbolic). Fifteen students were asked to write a list of products with symbolic meaning as well as a list of products with functional meaning. Another group of forty students were then asked to evaluate the functional and symbolic meaning of the most common products mentioned by the previous group (Allen et al., 2002; Allen and Ng, 1999). The most frequently listed functional product was the personal computer and the most frequently listed symbolic product was casual sports shoes. To distinguish between functional and symbolic innovations, a pretest was conducted with sixty students in which they classified a list of forty-eight attributes related to PCs and twenty attributes related to casual sports shoes as either symbolic or functional. For the personal computer, the functional innovation selected for the study was the Intel Pentium V 3.2 Ghz processor, and the symbolic innovation selected for the study was a new design with the slogan “Dimension 4600C, the PC for those who enjoy the future, nowadays”. For the casual sports shoes, the functional innovation selected was the new Ultralite midsole technology (a more flexible and light sole), and the symbolic innovation selected was a new design, presented with the slogan “Columbia 23, for those who want something different”. Both products and new attributes were selected based on preliminary studies with groups of university students.

The questionnaire used in the main study was structured in three sections. The first page presented a photo of the product (PC or casual sports shoes), which informed subjects about the product attributes but not the brand name. The selection of attributes to include was based on the analysis of actual PC and sports shoes ads, as well as interviews with experts. Subjects were then asked to evaluate the product on a six-item, seven-point scale anchored by “bad/good”, “like/dislike”, “not useful/useful”, “desirable/undesirable”, “high quality/low

quality”, “favorable/unfavorable” (Mukherjee and Hoyer, 2001; Peracchio and Tybout, 1996). After completing this initial evaluation, subjects were asked to complete the product meaning scale (Allen et al., 2002; Allen and Ng, 1999) and the innate innovativeness scale (Im et al., 2003). The last page showed the innovation (the product with the new attribute). The functional and symbolic innovations for the PC were evaluated by 53 and 52 subjects respectively, whereas 53 and 51 subjects respectively evaluated the functional and symbolic innovations for the casual sports shoes.

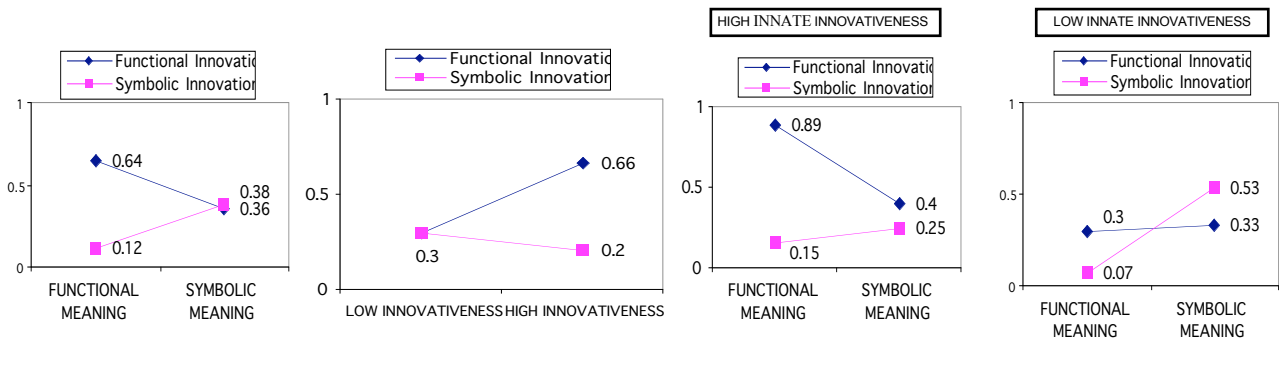
The level of novelty for each new attribute was measured and analysed; very similar values were obtained for each attribute. Although no actual products had the specific combination of characteristics showed in the study, all of the attributes were real and currently exist in the marketplace. A manipulation check was performed for the product meaning for both products and showed that the computer was rated as more functional than symbolic ( $M_F=5.82$  vs  $M_S=3.73$ ;  $t=13.76$ ;  $p<0.001$ ), while shoes were rated as more symbolic than functional ( $M_S=4.51$  vs  $M_F=4.02$ ;  $t=4.60$ ;  $p<0.001$ ).

## Results

An ANOVA analysis was used to test the first two hypotheses. Results show that the effect of innovation type ( $F(1,205)=4.809$ ,  $p<0.05$ ) and the interaction effect of product meaning and innovation type ( $F(1,205)=16.144$ ,  $p<0.001$ ) were significant and in the expected direction. The functional innovation improved the evaluation of the functional product more so than the symbolic innovation ( $t=3.308$ ,  $p<0.05$ ), providing support for H1. For the symbolic product, the functional and the symbolic innovations were equally valued, so H2 was not supported ( $t=0.083$ ,  $p=0.934$ ).

In order to test H3 and H4, the sample was divided into two levels of innate innovativeness by conducting a median split. High innate innovativeness was attributed to those individuals who scored higher than the median, while the rest were classified in the low innate innovativeness group. The difference between two groups was significant ( $t=19.071$ ;  $p<0.000$ ). An ANOVA analysis showed that there was no significant effect of innate innovativeness ( $F(1,205)=1.072$ ;  $p=0.302$ ), though the interaction effect of innate innovativeness and innovation type was significant ( $F(1,205)=3.758$ ;  $p<0.10$ ). In accordance H3, for individuals with high innate innovativeness, the functional innovation improved product evaluations more than for low innate innovativeness individuals ( $t=2.020$ ;  $p<0.05$ ), but there were no significant differences for symbolic innovations. Consistent with H4, for high innate innovativeness individuals, the functional innovation improved product evaluation more when it was added to a functional product than when it was added to a symbolic one ( $t=1.991$ ;  $p<0.05$ ), with no significant differences for the symbolic innovation (see Figure 1). Although there was no proposed hypothesis related to low innate innovativeness individuals, the marginal means show a different pattern of evaluation from high innate innovativeness individuals. Low innate innovativeness individuals evaluated the symbolic innovation significantly higher when it was added to the symbolic product than when it was added to the functional product ( $t=2.004$ ;  $p<0.05$ ), whereas no differences were found for the functional innovation.

**Figure 1. Effects of Innovation Type, Product Meaning and Innate Innovativeness on Product Evaluations Improvements**



### Conclusions and Implications

The findings of our study show that the impact of the innovation on product evaluation depends on the type of innovation as well as the meaning of the product to which the innovation is added, and that this relationship is moderated by consumer innate innovativeness. As such, for functional products, the effect of functional innovations is higher than the effect of symbolic innovations, with no significant differences for symbolic products. In addition, as proposed by Park and Dyer (1995) and Blythe (1999), there are behavioural differences between high and low innate innovativeness individuals. Analysing the groups independently, results show that for individuals with high innate innovativeness the addition of a functional attribute to the product produces a greater increase in product evaluation than for individuals with low innate innovativeness. Finally, functional innovations are more highly valued when added to a product with functional meaning than when added to a product with symbolic meaning for individuals with high innate innovativeness.

In summary, these findings suggest that developing functional innovations is recommended for functional products. Furthermore, functional innovations should be specifically addressed to highly innovative individuals, as they will evaluate them more positively. On the other hand, symbolic innovations are only recommended for symbolic products, given that the value is the same.

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