

Product Perceived Newness: Concept, Measurement, and Validation

Abstract

This research builds on consumption value taxonomies to suggest that there are four dimensions of Product Perceived Newness: functional, emotional, social and epistemic. We aim to extend the measurement of Product Perceived Newness, working beyond existing uni-dimensional scales to develop a scale that incorporates these four dimensions.

Key words: Perceived newness, Scale development, New product Development

Claire-Lise Ackermann

Rennes School of Business, 2, rue Robert d'Arbrissel, 35000 Rennes, France

Email: claire-lise.ackermann@rennes-sb.com

Blandine Hetet

IDRAC Business School, 16 Boulevard Général de Gaulle, 44200 Nantes

Email: blandine.hetet@idracnantes.com

Imène Belboula

Faculté des Sciences Economiques, des Sciences Commerciales et des Sciences de Gestion, Université

Lounici Ali, Blida 2, Algérie

Email: i_belboula@esc-alger.dz

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1. Introduction

Since the early seventies, researchers have tried to predict new product success by measuring product newness (Blake et al., 1970). While initial attempts focused on assessing product characteristics that would make it intrinsically new to the market, it is now well accepted that newness is an attribute granted to a product by an observer (Blythe, 1999). Accordingly, this research defines Product Perceived Newness (*PPN*) as a subjective characteristic accorded to a product by a consumer that refers to the perceived discrepancy between the characteristics of this product and the characteristics of the typical product in that class or previous versions in the same or proximal categories (Blake et al., 1970; Blythe, 1999; Sethi and Sethi, 2009).

PPN is central to the success of new products because it positively influences their evaluation by consumers (Wells et al., 2010). Academic and business periodical literature is replete with stories of new product failures, and an absence of *PPN* has been shown to be an important underlying explanation for new product failure (Sethi et al., 2001). This is calling for a reliable and recognized measurement instrument of *PPN*. The consumer behavior literature usually adopts a uni-dimensional measure of *PPN*, capturing the extent to which consumers perceive the product to be new (e.g., Sethi et al., 2001; Stock and Zacharias; Truong, 2013). This approach is problematic because it does not assess what makes a product new in the eyes of consumers, and thus disregards attributes that may prompt consumers to purchase the new product. We suggest that consumers adopt a new product if they perceive value in it. Therefore, we posit that consumers are more likely to pay attention to the attributes of newness valuable to them. We base our research on Vandecasteele and Geuens (2010) who recognize the crucial role that consumption value plays in adoption of innovations.

We therefore would like to extend the measurement of *PPN*, working beyond existing uni-dimensional scales to construct a *PPN* scale that incorporates a diversity of characteristics that make a product new. Thus, the main objective of our research is to develop and validate a multi-dimensional *PPN* scale based on value taxonomies that takes into account the different sources of perceptions of newness. A *PPN* scale that is more balanced will address the differences between products in terms of not only their level of newness but also their type of newness. Several studies will be carried out to develop and validate the scale. This paper reports the results of the first quantitative pilot study aimed at assessing some basic psychometric properties of the initial *PPN* scale and to purifying the scale.

2. Theoretical background

2.1. Product Perceived Newness

Product Newness can be first understood in terms of technical newness and/or the changes it implies for companies and consumers. Here, the focus is on the extent to which the new product will require changes to a firm's knowledge, skills and process on the one hand, and consumer learning on the other hand, thus distinguishing between product newness to the firm and product newness to the market (Atuahene-Gima, 1995; Bonner, 2010). Specifically, product newness to the market is captured from the perspective of managers, and most of the time measured with Atuahene-Gima's (1995) scale which captures the extent to which managers believe consumers will find the new product difficult to understand. Other approaches to measure product newness to the market involve more objective measures of the extent to which the product is actually new to customers, captured by the time at which it was first commercially introduced (Namwoon and Sungwook, 2012), or by its market share (Bonner, 2010).

In contrast to this stream of research, others have recognized that product newness is, to a large extent, in the “eye of the beholder” (Danneels and Kleinschmidt, 2001). In other words, product newness does not only derive from the characteristics of the product but also from the characteristics of the consumer and it is therefore highly likely that perceptions of newness differ extensively across consumers (Wells et al., 2010). From this perspective, the focus should be on perceptions of newness, which are informed by past experiences of the consumer with products in the same product category. Product Perceived Newness (*PPN*), which is the focus of our research, is thus broadly defined as the perceived discrepancy between the characteristics of the new product and the characteristics of the typical product in that class or previous versions in the same or proximal categories (Blake et al., 1970; Blythe, 1999; Sethi and Sethi, 2009). Perceptions of product newness have been shown to influence the adoption of innovative products, either because it has a positive effect on the evaluation of the new product, or on purchase intention, in different industries and across different countries (e.g. Roehrich, 1987; Truong, 2013; Wells et al., 2010). Intention to purchase has been shown to increase with increased perceptions of product newness in the category of household products (Roehrich, 1987). Truong (2013) has shown that *PPN* of a new service positively influences the attitude toward the same new product in three different countries, implying that perception of newness is a salient determinant of attitude in different cultural contexts. Perceptions of newness of an electric meter have been shown to mediate the positive effect of brand innovativeness on the evaluation of the new product (Hetet et al., 2020).

2.1. Toward a multi-dimensional conceptualization of Product Perceived Newness

The conceptualization of *PPN* as the degree to which a new product is perceived to be different from a typical product in a product category or from previous versions in the same or proximal categories is underlied by an unidimensional approach. Consequently, from an operationalization point of view, *PPN* is captured with uni-dimensional scales aimed at capturing an overall perception that the product is new and typically use items such as novel, unusual, unique, original, innovative, unconventional, or predictable, usual, ordinary, commonplace, to characterize newness or lack of newness (e.g. Jin et al., 2019; Sethi and Sethi, 2009; Sethi et al., 2001; Truong, 2013). However, classifying a new product on one of the two opposite ends of the newness spectrum may not be sufficient to adequately define what makes it new in the eyes of consumers and *PPN* could be better conceived as a continuum on several dimensions. The literature has already highlighted that different properties of the product can contribute to perceptions of newness. For example, Talke et al. (2009) suggests that conceptualization of product newness should go beyond technical newness, which focuses on the core technology and technical components of the product, by considering design newness which assesses the product’s external appearance. However, it may be argued that some consumers may show little interest for technical newness or design newness, and may nevertheless perceive newness in a product because they perceive other novel benefits. Therefore, our research aims to adopt a holistic approach to *PPN* that recognizes the different aspects of what makes a product new to a consumer. In particular, we suggest that the attributes which make a product actually new to the consumers are the attributes that capture its attention because of their intrinsic interest to the consumer. This approach is supported by prior research that has highlighted that product newness should also be understood in terms of benefits that are not only unique to a given product but also perceived as meaningful by customers (Jin et al., 2019; Sethi et al., 2001). As long noted by Hirschman (1982, p. 538), newness may arise “not from the novel [products’] tangible features ..., but rather from a change in the social meaning ... assigned to the product”. Further supporting our view, it has also been demonstrated that the positive effect

of *PPN* on evaluation of the new product is increased with increased meaningfulness (Lowe and Alpert, 2015).

Adopting an exchange paradigm and viewing consumption value as the perceived utility acquired by a product to bring benefits to the consumer (Sheth et al., 1991), we suggest that consumers adopt a new product if it is relevant and meaningful to them, i.e. if they perceive value in it. Therefore, we posit that consumers are more likely to pay attention to the attributes of newness valuable to them.. Based on generally accepted consumption value taxonomies (Sheth et al., 1991; Sweeney & Soutar, 2001), we suggest that there are four dimensions of *PPN*:

1. *Perceived functional newness* refers to the extent to which consumers perceive the *new product* to possess *new* functional, utilitarian and physical attributes,
2. *Perceived emotional newness* refers to the extent to which consumers perceive the *new product* to offer *new* opportunities to arouse feelings or affective states,
3. *Perceived social newness* refers to the extent to which consumers perceive the *new product* to offer *new* opportunities to be associated with one or more specific social groups,
4. and *Perceived epistemic newness* refers to the extent to which consumers perceive the *new product* to be able to arouse curiosity for the *new* and/or to satisfy a desire for learning of *new* knowledge, especially in terms of new technologies.

3. Scale development and refinement

3.1. Item generation and content validation

A total set of 123 items is constructed. This item pool originates from the (1) review of the literature on perceived newness and consumption value, and (2) semi-structured interviews in which we probed attributes that confer newness to a product using a convenience sample of consumers who had recently bought a new product they perceive to be novel, unique, unusual, original, different and innovative when compared to existing products within the product category (N= 17). The relevant items all correspond to one of the four a priori defined dimensions. Thus, the importance of each of the four dimensions is confirmed, and there are no indications that an additional dimension should be taken into account. Given the importance of expert judgments to correctly define a construct (Rossiter, 2002) the authors and seven experts critically evaluated all items. The judges were asked to pay attention to representativeness, dimensionality, comprehensibility, and unambiguousness. If two judges disagreed on one of the evaluation criteria, the item was deleted. This procedure yielded an initial *PPN* scale.

3.2. Study 1: pilot study

This quantitative pilot study is intended to assess some basic psychometric properties of the initial *PPN* scale and to purify the scale, limiting it to a more manageable number of items. A student sample (N=424; 63% women) was recruited. Participants were randomly exposed to one out of two new products drawn from the 2020 CES Innovation Award¹ list, and required to evaluate it on each of the *PPN* scale items. *PPN* items were randomly rotated. The three items of Zhao et al.' (2009) uni-dimensional scale of product perceived newness were also included to establish convergent validity. All items were measured using a seven-point Likert scale (1=strongly disagree, 7=strongly agree). Finally, the respondents answered socio-demographic questions.

An exploratory factor analysis (promax rotation) yields 8 factors. After this procedure, only items that load higher than .50 on their focal factor and not higher than .30 on another were retained (Hair et al., 1998). A second analysis of the remaining items points to five factors, with one factor encompassing two reverse-coded items that relate to one of the theorized factors. These two items were deleted, and the final analysis provides a 4 factor solution. The four factors account for 57 %

¹ <https://www.ces.tech/Innovation-Awards/Honorees.aspx>

of the total variance. A confirmatory factor analysis of the remaining items indicates an acceptable overall fit ($CFI > 0.90$ and $RMSEA < .06$). Additionally, the factors possess high internal validity and discriminant validity. Composite reliability (CR) indexes and average variance extracted (AVE) meet the acceptable levels suggested by Fornell and Larcker (1981). The average variance extracted is always larger than the squared correlations between the factors, proving the discriminant validity of the dimensions (Fornell & Larcker, 1981). Finally, each *PPN* dimension is significantly correlated with Zhao et al.' (2009) uni-dimensional measure of perceived newness, which provides evidence of convergent validity.

4. Next stages

This working paper details ongoing research and our research will follow well-accepted psychometric scale development and validation procedures. Study 2 will aim to confirm the results of the initial quantitative study, to further refine the scale, and to investigate its nomological validity. 450 students from a French University (different from those involved in study 1) will be randomly exposed to one out of two new products drawn from the 2020 CES Innovation Award list (different from those used in study 1). The survey will include the items retained after study 1 and socio-demographic questions. Items measuring some selected innovation characteristics (Rogers, 2003) will be added to investigate the *PPN* scale nomological validity. Study 3 will test *PPN* scale predictive validity by testing a model in which *PPN* represents the mediational pathway for the positive effect of consumer innovativeness on new product adoption. 450 members of an US opt-in consumer panel will be randomly exposed to one out of two new products drawn from the 2020 CES Innovation Award list (different from those used in studies 1 & 2). The online survey will include the items retained after studies 1 & 2, consumer Innovativeness scale items, different items aimed at measuring new product adoption, and socio-demographic questions.

5. Conclusion

Results from Study 1 are promising and encouraging. It is surprising that *PPN* existing scales do not include a wider array of potential sources of perceptions of product newness. Our research will not only contribute to the academic debate about *PPN*, but also help managers to identify different sources of perceived newness more effectively and efficiency, which is critical for new product development and new product launch.

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