

Motivated Consumer Innovativeness: Concept and Measurement

Abstract

Existing consumer innovativeness scales ignore the multitude of motivation sources of buying innovations. The objective of this paper was to incorporate motivation research into a multi-dimensional innovativeness scale to better account for the consumer-product relation. An exploratory and confirmatory study (with 768 respondents in total) indicated that four types of motivations seem to underlie consumer innovativeness: functional, hedonic, social and cognitive. The proposed 28-item Motivated Consumer Innovativeness scale proved to be reliable, valid and apparently goes beyond existing innovativeness scales.

Keywords: Consumer innovativeness, Motivation, Scale development

Track: Consumer Behaviour

Since the early seventies, several researchers have tried to predict consumers' innovative buying behavior (i.e., the purchase of innovations or new products) by means of different scales intended to measure innovativeness as a personality trait. However, the correlation between innovativeness as measured by these scales and actual innovative buying behavior is rather weak: inherent innovativeness explains only 10 percent of the variance of innovative behavior (Roehrich, Valette-Florence, & Ferrandi, 2002). Thus, the measurement instruments of consumer innovativeness (CI) currently available fail short in accurately predicting consumers' innovative behavior. An important reason for this appears to be the disregard of the consumer-product relation (Gatignon & Robertson, 1985; Goldsmith & Flynn, 1992; Subramanian & Mittelstaedt, 1991): consumers who buy every new product that they are aware of are rare, even non-existent. In addition, Ostlund (1974) states that it is not the personality traits that are relevant as a predictor variable, but the consumers' product perception. Therefore, in order to understand CI well, attention must be paid to the complex interaction between the consumer and the product itself. As a first attempt, Goldsmith and Hofacker (1991) launched the idea of domain-specific innovativeness. However, Baumgartner (2002, p. 287) argues that "personality is best understood in terms of the goals that people pursue in their lives [...]." Also, Lüthje (2004) states that users who experience new needs not addressed by existing market offers expect a high benefit from an innovation earlier than others. Building on the foregoing, we would like to take the idea of product-consumer interactions in CI one step further by constructing a new CI scale which incorporates a diversity of underlying goals and motivations to buy an innovation. Most of the current innovativeness scales ignore the multitude of motivational sources. Using an innovativeness scale that is more balanced with respect to potential purchase motivations might go beyond existing innovativeness scales and therefore increasing the predictability of the innovativeness trait for innovative buying behavior.

1. Theoretical Background

Rogers and Shoemaker (1971, p. 27) define innovativeness as "the degree to which an individual is relatively earlier in adopting new ideas than the average member of his social system". This definition clearly focuses on the behavioral level of innovativeness, which is observable. However, as Midgley and Dowling (1978) point out, innate innovativeness is a hypothetical construct and by definition not observable. It is situated on a higher, more abstract level than realized innovativeness (Foxall, 1988, 1995; Hirschman, 1980; Midgley & Dowling, 1993; Steenkamp, Hofstede, & Wedel, 1999). Consumer innovativeness (innate innovativeness concentrated on consumer behavior) can be conceptualized as "the tendency to buy new products in a particular product category soon after they appear in the market and relatively earlier than most other consumers in the market segment" (Foxall, Goldsmith & Brown, 1999, p. 41) and is assumed to predict innovative consumer behavior in a better way than innate innovativeness. Leavitt & Walton (1975) are amongst the first researchers to develop a self-report measure of CI and others (e.g., Goldsmith & Hofacker, 1991; Hartman, Gehrt, & Watchravesringkan, 2004; Le Louarn, 1997; Manning, Bearden, & Madden, 1995; Roehrich, 1994; Steenkamp & Baumgartner, 1992; Tellis, Yin, & Bell, 2005; Venkatraman & Price, 1990) follow with different scales. But, as mentioned above, the majority of the scales appear to possess low predictive validity accounting at best for 10 percent of the behavioral variance (Cotte & Wood, 2004; Foxall, 1995; Foxall & Haskins, 1986; Hirunyawipada & Paswan, 2006; Im, Bayus & Mason, 2003; Roehrich, 2004).

Already in the fifties, marketing researchers (e.g., Levy, 1959) recognize the existence of psychological and symbolic aspects of consumption next to the more functional ones. Since then, several motivation taxonomies have been proposed (e.g., Chulef, Read, & Walsh, 2001; Ford & Nichols, 1987), as well as broad categories of consumer needs which can be categorized into three groups: (1) functional motivations (physiological needs to solve problems, to work more effectively and to create more utility), (2) hedonic motivations (the “just for fun” motivations such as cognitive and experiential needs) and (3) social motivations (including status, prestige and symbolic needs) (e.g., Brown & Venkatesh, 2005; Foxall et al., 1999). Also, shopping motivation research has frequently used this division into three motivations (e.g., Dholakia, 1999; Tauber, 1972; Westbrook & Black, 1985).

Turning to CI studies, several researchers do acknowledge the importance of different motivations such as functional motivations (e.g., Hirschman, 1984; Venkatraman, 1991) and social or symbolic innovativeness (Arnould, 1989; Fisher & Price, 1992; Roehrich, 2004; Simonson & Nowlis, 2000). But still, the number of motivation sources included in current CI scales is limited to two at a maximum (e.g., Roehrich, 1994; Venkatraman & Price, 1990). It is surprising that – notwithstanding the acknowledgement of its importance – hardly any innovativeness scale has been developed that includes a broader variety of potential consumer motives. Therefore, the main objective of the current paper is to fill this gap and to develop and validate a multi-dimensional CI scale, the Motivated Consumer Innovativeness (MCI) scale.

2. Study 1: Exploratory Research

2.1 Exploratory interviews

After a thorough literature review of consumer innovativeness and consumer motivations, we explored the domain of consumer innovativeness further by means of depth interviews with consumers who recently bought innovations (i.e., experts and individuals from relevant populations, Netemeyer et al., 2003). Respondents were selected based on self-reports of their innovative buying behavior, taking the following descriptions into account: “*An innovative consumer is a consumer who frequently buys innovations earlier than the average consumer*” and “*An innovation is a newly (<two years) launched product, service or brand on the consumer market which replaces an existing solution for consumer needs or which fulfills these needs differently.*” The sample consisted of a convenience sample of 37 innovative adult consumers of mixed age (mean age=35.2 years) and gender (22 males versus 15 females).

The objective of the interviews was to further enrich our pool of items and to make sure that all content areas of the construct were incorporated. To this end, consumers were asked to come up with reasons for buying certain innovations. Each interview took about one hour and followed a laddering process (based on Reynolds & Olson, 2001). According to the Means-End Chain (MEC) theory, laddering is a useful technique to reveal the link between product attributes and more abstract (consumption) goals and values. Furthermore, we also kept Cohen & Warlop’s (2001) remark in mind that “functional benefits need not to be connected – at least in consumers’ minds – to these more abstract or higher level sources of value” (p. 407).

About 73 very diverse products were discussed. The motivations the respondents came up with fit in with the taxonomy found in the literature and more specifically with the distinction in functional, hedonic and social motives. On the basis of the depth interviews, at least the following three different motivation sources of consumer innovativeness seem to be important.

Functional Motivated Consumer Innovativeness (fMCI) can be defined as consumer innovativeness motivated by functionality, usefulness, handiness, compatibility, efficiency, comfort, ease, quality, reliability, etc. Hedonic Motivated Consumer Innovativeness (hMCI) can be conceptualized as consumer innovativeness motivated by variation, pleasure, fun, sensation, fantasy, excitement, enjoyment, tension, experimentation, desire, stimulation, discovery, irresistible urge, creativity, etc. Social Motivated Consumer Innovativeness (sMCI) can be considered as consumer innovativeness motivated by differentiation and uniqueness, status, standing, prestige, distinction, opinion leadership, visibility, social reward, trendiness, symbolism, showing success, sense of belonging, image, etc.

2.2 Quantitative exploration of consumer innovativeness motives

In a second exploratory study, a quantitative follow-up is made, by means of a comprehensive list of general human motivations (Chulef et al., 2001). The objective of this quantitative follow-up is twofold: (1) to get a quantitative overview of the different motivations why an innovative person could buy an innovation and (2) to know how motivations would cluster together in main motivation dimensions.

About 279 respondents filled out an online survey (mean age=27 years, 87 men). The respondents were kindly asked to evaluate the 135 motivation items proposed by Chulef et al. (2001). The items were randomly presented and introduced by the sentence “I think people acquire innovations (and therefore are innovative) because...” which was followed by the motivation statements (e.g., “...they can be in a better position to make a decision for others”). Respondents answered on a five-point Likert scale (1 = “strongly disagree”, 5 = “strongly agree”). Finally, they filled out their sociodemographic characteristics.

An exploratory factor analysis with promax rotation on the motivation items that have a mean significantly greater than three (this means that these motivation items are of importance for CI) and with Eigenvalues greater than 1 (Hair, Anderson, Tatham, & Black, 1998), results in eight factors. However, the scree plot suggests a four-factor structure: the three motivation sources mentioned previously (hedonic, social and functional) and a new cognitive dimension that deals with intellect, knowledge and ambition. This dimension has occurred previously in value research (Sheth, Newman & Gross, 1991; Sweeney & Soutar, 2001) and can be defined as “the perceived utility[...] to arouse curiosity, provide novelty, and/or satisfy a desire for knowledge” (Sheth et al., 1991, p. 162). Because next to the previously defined dimensions, this cognitive dimension could be important for the purchase of innovations, we decided to incorporate it as well in our further studies. We define cognitive Motivated Consumer Innovativeness (cMCI) as consumer innovativeness motivated by knowledge, information, intelligence, wisdom, eagerness to learn, logic thinking, insight and understanding, education, reason, brainpower, stimulation of the mind, etc.

3. Study 2: Scale Development

3.1 Item generation and content validation

A total set of 254 items was constructed. This item pool originated from the literature review (n=68), the different existing CI scales (n=77) – both dealt with in the theoretical background section of the paper – the interviews (n=67) and the exploratory quantitative research (n=42)

described above (i.e., Study 1). The authors, seven expert and six consumer judges (following Hardesty & Bearden, 2004) critically evaluated all items. The judges were asked to pay especially attention to content validity, representativeness, dimensionality, comprehensibility and unambiguousness. From the moment two judges had a problem with assigning an item to the intended dimension, the item was deleted. This procedure resulted in 90 remaining items of which 24 are functional, 24 hedonic, 22 social and 20 are cognitive.

3.2 Pilot study

This quantitative pilot study wants to assess some basic psychometric properties of the MCI scale and to purify the scale towards a more manageable number of items.

3.2.1 Procedure and measures

We recruited 452 respondents (54% women, mean age: 36) for an online survey via 35 web forums and snowball sampling. The questionnaire included the 90 MCI items (randomly presented). Further, to be able to establish convergent and discriminant validity, for half of the respondents the Hedonic and Social Consumer Innovativeness (H-SCI) scale of Roehrich (1994) was included, whereas the EAP (Exploratory Acquisition of Products) variety seeking subscale of Baumgartner & Steenkamp (1996) and the Extraversion scale of Eysenck, Eysenck, & Barrett (1985) was added for the other half of the respondents. Finally, respondents had to fill out questions about their sociodemographic profile.

3.2.2 Factor analysis results

Principal component analysis (promax rotation) resulted in 14 factors with Eigenvalues greater than 1 (Hair, et al., 1998). Only items that loaded higher than .50 on one and not higher than .30 on another dimension were retained. A second analysis pointed to 4 factors (as the scree plot suggested as well) and resulted in 10 social items, 12 functional items, 13 hedonic items and 8 cognitive items (i.e., 43 items in total). The Cronbach's alpha's for the MCI scale ($\alpha=.958$) and the four dimensions separately ($\alpha_{sMCI}=.929$; $\alpha_{fMCI}=.907$; $\alpha_{hMCI}=.928$; $\alpha_{cMCI}=.902$) are comfortably high. The four factors accounted for 57.7% of the variance and each factor minimally explained 5.4% of the total variance, which fulfills the minimal requirements of Netemeyer et al. (2003). All item-to-total correlations exceeded .50 and the inter-item correlations exceeded .30 of each dimension. On the basis of a confirmatory factor analysis (with AMOS 6.0), we deleted the items with factor loadings below .60 and squared multiple correlations below .50. CFA on the remaining 28 items resulted in an acceptable overall fit (TLI=.946, CFI=.951, RMSEA=.050). Also, the factors proved to possess high internal validity and showed sufficient discriminant validity. Composite reliability (CR) and average variance extracted (AVE) was satisfying for sMCI (CR=.93, AVE=.70), fMCI (CR=.87, AVE=.54), hMCI (CR=.91, AVE=.56) and cMCI (CR=.91, AVE=.57). AVE is always larger than the squared correlations between the factors (cf., Fornell & Larcker, 1981).

3.2.3 Socio-demographic differences according to MCI

A one-way ANOVA with the MCI scale and its dimensions as dependent variable and age as independent variable shows a significant main effect ($F=5.220, p<.001$). There are significant

effects for MCI and the dimensions sMCI, hMCI and cMCI: all these (sub)scales of MCI have a declining course when respondents grow older. With respect to fMCI, there is no difference between age categories. When introducing gender, education, income and family situation in the model, the significant difference for cMCI disappears.

3.2.4 Convergent and discriminant validity

To check for convergent validity, half of the respondents were asked to fill in Roehrich's (1994) CI scale. The coefficient alpha estimates for this scale (alpha H-SCI=.922), as well as for its two dimensions (alpha hedonic dimension HCI=.866, social dimension SCI=.887), are satisfactory. The most interesting results are the strong correlations between MCI and H-SCI ($r=.824$), between sMCI and SCI ($r=.799$), and between hMCI and HCI ($r=.740$). Furthermore, as expected, slightly weaker correlations emerged between fMCI and H-SCI ($r=.534$) and between cMCI and H-SCI ($r=.612$). All correlations were significant at the .001 level.

The second half of the respondents were asked to fill in the EAP dimension of the ECBB scale (Baumgartner & Steenkamp, 1996) and the Extraversion scale of Eysenck, et al. (1985). Coefficient alpha is .863 and .901 for EAP and extraversion respectively. The EAP scale correlates moderately (r between .211, $p=.003$ for fMCI and .273, $p=.001$ for hMCI) but significantly with MCI and all its subscales, except for sMCI ($r=.096$, $p=.193$). Finally, except for a weak significant correlation with hMCI ($r=.150$, $p=.043$), MCI and its dimensions do not significantly correlate with the Extraversion scale.

4. Discussion

There are several reasons why this new CI scale is useful. To begin with, the first dimensionality, reliability, convergence and discriminant validity tests of MCI proved satisfactory and indicated that the general accepted thresholds are met. Secondly, this study provided a first proof that MCI measures more than the existing CI scales: (1) it disproved the general consensus that older people are always significantly less innovative than younger people. Most existing innovativeness scales focus on hedonic and (to a lesser degree) social innovativeness. As older people are less interested in hedonic and social matters, it is straightforward that they are not innovative according to these scales. However, the results of the current study indicate that older consumers are as innovative as younger consumers when they are functionally or cognitively motivated by the innovation. (2) The correlations between Roehrich's (1994) H-SCI and the social and hedonic dimension of MCI is larger than the correlation with the functional and cognitive MCI dimensions. We interpret this as a first proof that the functional and cognitive motivation sources of being innovative are less represented in Roehrich's scale. Further validation of the nomological network and the predictive validity of this scale will be carried out during the coming months.

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