



Research report

Social and individual determinants of adolescents' acceptance of novel healthy and cool snack products [☆]Maria Kümpel Nørgaard ^a, Bjarne Taulo Sørensen ^b, Klaus G. Grunert ^{b,*}^a Arla Foods Strategic Innovation Centre, Food Design, Roerdrumvej 2, DK-8220 Brabrand, Denmark^b MAPP Centre for Research on Customer Relations in the Food Sector, Aarhus University, Bartholins Alle 10, DK-8000 Aarhus C, Denmark

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ABSTRACT

Four new, healthy snack products, consisting of fruit, vegetables, bread, dip and topping, were tested with 600 Danish adolescents aged 9–16. Participants could view, handle, and test the products in a school setting. Acceptance was measured by overall buying intention, as well as buying intention contingent on specific substitutes and on the social situation. Price consciousness, health consciousness, snack neophobia, peer influence, social activities and word-of-mouth were measured as potential determinants of acceptance of the novel products. An exploratory analysis in TETRAD suggested that the measured constructs form three layers, with overall buying intention as the terminal causal effect, health consciousness, word of mouth, snack neophobia and peer influence as endogenous determinants, and social activities and the contingent buying intentions as mediators. Estimation of the causal relationships was conducted in LISREL. Findings show a predominance of social factors as determinants of novel snack acceptance, whereas health consciousness had only a weak and indirect effect on buying intentions and the effect of snack neophobia was partly mediated by social factors.

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Introduction

Adolescents are in a transition period with regard to their role as food consumers, going through a process of creating their own identity, which includes distancing themselves from parents and parents' food-related values (Story, Sztainer, & French, 2002). They become increasingly aware of their own preferences and become more critical in their choices (Pagliarini, Gabbiadini, & Ratti, 2005), and their food preferences expand and increase in complexity (Zeinstra, Koelen, Kok, & de Graaf, 2007). They also start searching for new food experiences and are increasingly neophile, trying novel food as an attempt to distinguish themselves from parents. Snacks are often among the first food products adolescents buy with their own money outside a family context; these products are easy to buy and consume in small amounts in between meals (Brown, McIlveen, & Strugnell, 2000; Nicklaus, Boggio, Chabanet, & Issanchou, 2004; Ton Nu, MacLeod, & Barthelemy, 1996).

Many snack products offered today have a high content of saturated fat, salt and refined sugar, which have been related to negative health consequences (Fagt et al., 2004; Lloyd-Williams, Mwatsama, Ireland, & Capewell, 2009), and not many snacks based on fresh fruit and vegetables are targeted to adolescents on the European market. Adolescents typically prefer and choose less healthy snack alternatives, and many adolescents do not eat the recommended amount of fresh fruit and particularly vegetables (Bower & Sandall, 2002; Yngve et al., 2005). Health considerations are not widespread among many adolescents (Elverdam & Sørensen, 2003), and typically they tend to let their parents take care of this (Nørgaard & Brunsø, 2009).

Other aspects seem to be more important in adolescents' snack consumption. Early studies have found that snacking represents the least rule-bound type of food consumption among adolescents (Douglas & Gross, 1981). Despite adolescents' longing to become independent consumers, they are very insecure about their own identity (Gjødesen, 2010). Previous research has found that adolescents tend to follow scripts defined by peers about snacking situations (Holm, 2001). Recent research among adolescents has found strong snacking conventions and peer pressure regarding the consumption of snacks (Bech-Larsen, Jensen, & Pedersen, 2010; Nørgaard, Hansen, & Grunert, 2013).

Attempts to introduce healthier snack products to adolescents need to build on insights into the determinants of acceptance of such products. We expect that the determinants of acceptance are a combination of social and individual factors, as individual factors like health consciousness will interact with social factors due to the fact

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that snacks are often bought and consumed in the presence of peers. In this paper we present a study on determinants of acceptance of a range of new, healthy, fruit-and-vegetable based snack products targeted at adolescents, and in studying those determinants we look at the interplay of individual factors like health consciousness, snack neophobia and price consciousness with social factors like peer influence and word of mouth. As the causal relationships among these factors in influencing new snack acceptance are not well established, we employ an inductive approach that first identifies and then tests for the most likely causal structure relating the constructs in the study.

Determinants of snack acceptance

Taking departure in the Total Food Quality Model (TFQM) developed by Grunert, Larsen, Madsen, and Baadsgaard (1996), Grunert (2005a) argues that perceived quality and competitive differential are decisive in consumer acceptance of new food products. Perceived quality is an individual construct that includes the product's perceived healthfulness together with other quality aspects like expected taste and convenience, whereas competitive differential refers to the price-quality relationship as evaluated against existing products to which the new product would be regarded as a possible substitute. We extend this approach by incorporating the social dimension, i.e., adolescents' view on the way the snack product could be used in a social context. We therefore seek to explain acceptance of the new snack product by three individual constructs, health consciousness, price consciousness and snack neophobia, and three social factors, peer influence, social activities, and word-of-mouth.

Health consciousness

Health consciousness is a major driver of food choice (Grunert, 2005b), but also one that competes with other drivers (Chrysochou, Askegaard, Grunert, & Kristensen, 2010) in the mind of adolescents (Bech-Larsen & Kazbare, 2014). Recent research found that adolescents typically focused more on health when their parents had taught them to do so (Nørgaard & Brunsø, 2009). Thus, adolescents may know the importance of behaving healthily, but just like many adults they do not always act upon that.

Price consciousness

While the role of price consciousness in purchasing is well established (e.g., Lichtenstein, Ridgway, & Netemeyer, 1993; Urbany, Dickson, & Kalapurakal, 1996), not much price research has been conducted among adolescents and at school canteens. Adolescents' pocket money level and disposable amount are relatively high, and the consumption of especially sweet snacks is relatively high (Tufte, Puggard, & Gretlund, 2009). However, adolescents may be more price sensitive when it comes to spending their pocket money on particularly healthy food, which they may expect to get for free from their parents. Consequently, price consciousness may be a determinant of adolescents' buying intentions with regard to healthy snacks.

Snack neophobia

Fear of trying something new such as novel food is termed neophobia (Dovey, Staples, Gibson, & Halford, 2008). Previous research has found that food-variety seeking and food neophobia influence adolescents' food choices (Birch, 1999; Lähteenmäki & Arvola, 2001; Nicklaus, Boggio, Chabanet, & Issanchou, 2005). Neophilic adolescents are more willing to try novel food than neophobic adolescents (Loewen & Pliner, 2000; Pliner, 1994); the response difference between the two groups may depend on the amount of information

about sensory characteristics available prior to purchase (Raudenbush, Schroth, Reilley, & Frank, 1998). Children are typically more neophobic than adults (Hursti & Sjöden, 1997), and whereas young children primarily prefer food that looks familiar (Alridge, Dovey, & Halford, 2009; Søndergaard & Edelenbos, 2007), older children are more willing to taste novel foods (Loewen & Pliner, 2000). Consequently, snack neophobia may be a determinant of adolescents' snack buying intentions.

Peer influence

Social awareness and dual perspectives increase with age, and when children reach adolescence, they become very aware of peer behaviour (John, 1999; Moschis & Churchill, 1978). Previous research has found that peers influence adolescents' food consumption and dietary behaviour in various respects. For instance, research has found that perceived normative beliefs were significantly correlated with consumption of fruits and vegetables (Cullen et al., 2001), and that perceived peer behaviour was significantly related to fruit and vegetable consumption (Vereecken, Van Damme, & Maes, 2005). More recent research has found that adolescents' individual snack consumption was significantly related to peer-group snack consumption (Nørgaard et al., 2013; Wouters, Larsen, Kremers, Dagnelie, & Geenen, 2010). Other recent research based on the Food and Friend Scale developed by Georgiou and Kavalana (2005) has found that peer approval of new eating habits was a significant positive predictor of healthy eating and a significant negative predictor of unhealthy eating (Kavalana, Maes, & De Gucht, 2010). Consequently, peer influence may be a determinant of adolescents' buying intentions.

Social activities

Sensation seeking, including seeking out highly stimulating food experiences, has been found to play an important role in adolescent behaviour (Pliner & Melo, 1997; Roberti, 2004; Zuckerman, Eysenck, & Eysenck, 1978). Previous research has also found that adolescents use peer groups for experimentation with food, as it may be more secure to try novel food among close friends (Huotilainen & Tuorila, 2005). Thus, adolescents seem to utilise the opportunity to mirror their own behaviour in their peers' behaviour as a way to explore individual food preferences, thereby distinguishing themselves from their parents and developing as individual consumers (Nicklaus et al., 2005). Consequently, social activities with peers around snack meals may be a determinant of adolescents' snack buying intentions.

Word-of-mouth

Socially visible products like snacks consumed together with peers are especially prone to word-of-mouth effects (Berger & Schwartz, 2011). The opportunity to be able to recommend novel snacks to family and peers may be a determinant of adolescents' snack buying intentions, as it gives an opportunity to share an experience and receive both social and individual gratifications (Alexandrov, Lilly, & Babakus, 2013).

While all the factors listed above are plausible determinants of acceptance of new healthy snack products, there is no theory on how these causally interact with each other and jointly affect acceptance of new snack products. Finding the appropriate causal structure among the various constructs is therefore part of the analysis, and no specific a-priori model of causal relationships will be specified.

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