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Introducing the super consumer

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ABSTRACT

The purpose of this study is to propose a new perspective on classifying or segmenting consumers by describing a minority of them who are uniquely motivated by high levels of status seeking, brand identification, and materialism. We term this segment of individuals “super consumers.” The data came from an online survey of 351 adult US consumers. A cluster analysis using these three variables as criteria produced a two-cluster solution. Comparing mean scores between these two groups of consumers on measures of market mavenism, shopping frequency, amount of spending, age, and gender showed that the super consumers were significantly more likely to be market mavens, to shop more frequently, and to spend more than the other consumers were. The super consumers were younger in age as well, but there were no gender differences between the two groups. Copyright © 2015 John Wiley & Sons, Ltd.

INTRODUCTION

Who are our best consumers? One can imagine all sorts of businesses asking this question on a regular basis. While the spending habits of average buyers are certainly critical to most fast-moving consumer goods, the most frequent purchasers of these categories account for around 50% of all purchases (Sharp, 2010). High-frequency and high-spending consumers are considered the backbone of many successful brands especially in high-involvement categories like clothing, cosmetics, electronics, and other shopping goods. Relationship marketing and customer relationship management, key elements of modern marketing strategy, are the outgrowth of the interest in specific user segments because of their importance in terms of revenue and potential word of mouth. However, who are these best consumers? Commercially available services provide prebuilt segmentation schemes based on demographics and lifestyles (e.g., Hicken, 2013; Nielsen PRIZM) that provide descriptive information about many “types” of consumers but that seem to overlook their psychological motivations. What if we could use psychological/consumer characteristics to describe a type of consumer who shops more, buys more shopping type goods, and talks more about what they buy? What if there is a type of person who is not only market oriented but also shops and spends more than other consumers spend and has clearly identifiable motivational characteristics?

The present study is inspired by a body of research on a constellation of consumer characteristics that seem to reflect a unique consumption pattern we have come to think of as the “super consumer.” The present study uses psychologically based consumer characteristics, in that they do not directly reflect behavior but are more motivational in nature, to classify consumers into two groups, super consumers and “regular” consumers, and then contrasts these two types on gender, age, shopping, spending, and market mavenism. The goal is to begin to develop a behavioral, psychological, and demographic profile of the super consumer segment. Not only does this concept tie together several disparate concepts in consumer psychology, but it also has potential managerial application in that identifying these consumers could lead to greater profitability and long-term relationships with them. The next section outlines the empirical and theoretical basis for our proposed consumer typology.

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THEORETICAL BACKGROUND

The theoretical background for the study first presents the three criteria variables used to segment the sample: materialism, status consumption, and brand engagement with self-concept. We chose these three variables as the basis for the super consumer concept because they are consistently correlated across studies and conceptually are highly related. As discussed in the following, materialistic consumers highly value ownership of status goods. Seeking status entails brand consciousness, and combined, these concepts suggest that some consumers seek brands that express their materialistically motivated self-concept as high-status individuals. Then, we discuss five dependent variables we feel are useful profiling variables related to the unique characteristics of the super consumer: market mavenism, amount of shopping, amount of spending, gender, and age. Moreover, we hypothesize the relationships for the first three of these profile variables.

Materialism

Materialism is defined simply as a more than normal desire for physical goods (Grougiou and Moschis, 2015). It is a topic of interest and research in religion, sociology, economics, and psychology. In marketing, materialism takes on a different cast from the mostly negative and even illness-related applications in the other fields. Marketing researchers are interested in the relationship of materialism to marketplace behaviors like fashion involvement (O’ Cass and Julian, 2001; Vieira, 2009), fashion innovativeness (Park *et al.*, 2007), and satisfaction with status products (Wang and Wallendorf, 2009) for example. Consumer researchers want to construct market segments and predict purchase behavior, and consumer materialistic tendencies have proven valuable in doing that.

It is obvious that materialism is a cornerstone of the makeup of consumers who consume more than average. Trying to describe the characteristics of super consumers is bound to include materialism, but it is not the only characteristic of people who buy more stuff. Because materialistic tendencies can take the form of gathering and hoarding trash and not buying or shopping more (Frost *et al.*, 2007), it is important to define a cluster of characteristics to begin to model the super consumer who is more complex than materialism alone reveals. In addition, materialism does not capture other motivations for buying that we feel are revealed by the two additional constructs we use to define the super consumer. In this paper, we measure materialism using the nine-item version of the Material Values Scale reported by Richins (2011).

Status consumption

The desire to achieve status or a position of respect within one's social group is something intrinsic to the human condition. It is a basic human need according to sociologists including Maslow (1970) and manifests itself in many aspects of human life. More recently, Saad and Vongas (2009) show that status consumption increases testosterone levels in men, thus lending a biological basis for the practice. Marketers sell houses, clothing, jewelry, cell phones, cars, and all manner of publicly consumed products as generators of envy and admiration from family, friends, and passersby. The greater (or lesser) desire to consume for status is measured by a five-item scale developed by Eastman *et al.* (1999) and operationally defined as "the motivational process by which individuals strive to improve their social standing through the conspicuous consumption of consumer products that confer and symbolize status both for the individual and surrounding significant others" (Eastman *et al.*, 1999, p. 41). Status consumption is positively related to materialism (Fitzmaurice and Comegys, 2006), and to brand engagement with self-concept (Goldsmith *et al.*, 2012), but describes a facet of consumer psychology unique and different from them. Owing to these relationships, we propose that status consumption, materialism, and brand engagement are the basis for the unique pattern of consumption we identify as the super consumer.

Brand engagement with self-concept

Brand engagement with self-concept is a characteristic first really explored by Fournier (1998) that describes how consumers use brands to explain, display, and form their self-concepts. More recently, Sprott *et al.* (2009) developed a scale measuring brand engagement with self-concept, which they define as "an individual difference representing consumers' propensity to include important brands as part of how they view themselves" (p. 92). In other words, Sprott *et al.* (2009) define brand engagement with self-concept as an individual difference variable where some people have a greater tendency to use brands in their self-concept construction and display than others do. They present an eight-item scale to measure this tendency and find it closely related not only to materialism ($r=0.42$) but also to behavioral outcomes such as higher recall for names of branded possessions, higher levels of attention paid to brands, and even greater brand loyalty in terms of brand extensions. Research shows highly brand-engaged consumers to have more positive attitudes toward shopping (Goldsmith *et al.*, 2010), have more involvement with fashion clothing, and are more brand loyal (Goldsmith *et al.*, 2012) than their less engaged counterparts. In addition, brand engagement is positively related to status consumption (Goldsmith *et al.*, 2012); it is important to buy the right brands to reflect high status. Consequently, high brand engagement with self-concept is an important characteristic of the true super consumer. It reflects a consumer who finds personal relevance in branded goods, thus desiring and likely purchasing them more frequently as well. Thus, we argue that materialism, status consumption, and brand engagement describe similar and related constructs that should be able collectively to delineate a type of consumer who buys a lot in pursuit of status and to reflect identity.

Market manifestations of super consumerism

Materialism, consuming for status, and brand engagement with self-concept are all related to each other and conceptually all reflect an individual tendency toward increased consumption for various reasons all related to the self (Goldsmith *et al.*, 2012). Consumers who show high degrees of all three constructs are expected to be more heavily engaged with the marketplace with more shopping in general, more spending, and more communication about those activities especially with regard to shopping goods and publicly consumed goods. Consumers who shop more are mostly women, although this information is mostly anecdotal as most shopping literature focuses solely on women (e.g., Binkley, 2013). More frequent shoppers have more positive attitudes toward shopping (Dobson and Ness, 2009; Goldsmith *et al.*, 2010; Jackson *et al.*, 2011), like to bargain hunt (Kim and Kim, 2008), and are less likely to shop for groceries with a budget in mind (Dobson and Ness, 2009). More frequent shoppers are by definition more connected with the market and are likely to be bigger spenders overall. Stoel *et al.* (2004) show that time spent shopping and total money spent are positively correlated. Super consumers' value to marketers is at least partly due simply to the amount of time the consumers spend shopping. Based on these findings and the behavior of materialistic consumers, we propose the following:

H1: Super consumers shop more than other consumers do.

Consumers who spend more have more money and are younger and more urban for most categories (Bureau of Labor Statistics, 2012). While not all materialists are big spenders, some hoard castoffs (Frost *et al.*, 2007), many are. Richins (2011) gives a recent example finding materialism correlated with overuse of credit and a positive attitude toward borrowing. Not all big spenders are materialists

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either. Although government data (Bureau of Labor Statistics, 2012) show household spending steadily rising with income, we cannot conclude that more income is a result of or a cause of materialism.

Research shows that spending is related to the pursuit of status. For instance, rural Chinese consumers spend more in a competition to gain status in their communities (Brown *et al.*, 2011). Rucker and Galinsky (2008) report that low-power consumers in the USA are willing to pay more for products seen to confer status. In addition, status consumption is negatively related to price sensitivity (Goldsmith *et al.*, 2010), and increased awareness of and response to brands, especially when those brands are status brands, are associated with greater relative spending on consumer items. Consumers with higher brand engagement are less price sensitive to branded goods as well (Sprott *et al.*, 2009). Thus, our second hypothesis is as follows:

H2: Super consumers spend more than other consumers spend.

Market mavens are consumers who communicate more about their own shopping and consumption habits than other consumers. They are very interested in the market and spend time using the market to gain social capital. Market mavenism (Feick and Price, 1987) is positively related to status consumption (Goldsmith *et al.*, 2006), to materialism (Goodey and East, 2008), and to brand engagement with self-concept (Goldsmith *et al.*, 2012). Mavenism, however, is a product of the super consumer style rather than a motivator. It differs from those constructs because it is more behaviorally based than they are. Market mavenism is an important characteristic on its own because of the greater than typical influence mavens have on other consumers owing to both their behavior and their word-of-mouth communication (Williams and Slama, 1995), thus rendering mavenism a crucial element in the profile of the super consumer.

H3: Super consumers are more likely to be market mavens than other consumers are.

Finally, we assess the differences in age and gender between super consumers and regular consumers to add to the profile of this type of shopper. Demographic variables are the basic descriptor of consumers used by marketing management because of their crucial role in guiding distribution, pricing, and media aspects of the marketing strategy. Because we pose no hypotheses about these two variables, we consider these findings exploratory.

METHOD

Sample

Data for this study came from a nationwide sample of adults and were collected online using Qualtrics's online recruitment model. This process uses a panel of 540,298 consumers from all of the 50 US states, is dedicated to market research, and gives incentives for survey completion. The questionnaire was delivered in two waves, approximately 1 week apart. Overall, the method reports a completion rate of 20%. One hundred seventy-six men and 175 women completed both waves of the questionnaire ($n = 351$). Of these, 297 (88%) reported they were White, 28 (8%) Black or African American, 12 Hispanic, 7 Native American, and 6 of Asian origin. Ages ranged from 18 to 83 with a median of 54 years (four participants did not report their age). While the median ages for men and women were the same at 54, the means were different. Mean age for women was higher at 54.1 than for men at 50.5 ($t_{(345)} = 2.61$, $p = 0.009$, $d = 0.28$).

Measures

We measured the latent constructs (materialism, status consumption, brand engagement, and market mavenism) using multi-item scales found in the literature (see notes on Table 1). Each scale has exhibited high reliability and validity in multiple studies. Two 5-point scales measured shopping frequency ("I go shopping for things other than groceries" and "I go shopping for shoes and/clothing", where 1 = *only for special occasions*, 2 = *once a month*, 3 = *once every 2 weeks*, 4 = *once a week*, and 5 = *more than once a week*). A 9-point scale ("Less than $25 in a typical month" in $25 increments to "More than $200 in a typical month") measured clothing spending. These three questions were asked in both waves of the questionnaire to enhance reliability of the responses and combined to form summed measures of shopping frequency and spending.

Table 1. Descriptive statistics and correlations

					Correlations						
Variable	Items	Range	Mean	*SD*	SC	BESC	MVS	Maven	Shopping	Spending	Age
SC	5	5–25	10.6	4.2	(0.86)						
BESC	8	8–40	22.9	7.1	0.57	(0.94)					
MVS	9	9–42	24.6	6.1	0.45	0.31	(0.83)				
Maven	6	7–30	20.6	4.8	0.31	0.42	0.24	(0.88)			
Shopping	4	4.20	8.5	3.6	0.29	0.26	0.17	0.37	(0.84)		
Spending	2	2–18	4.5	3.4	0.41	0.29	0.28	0.29	0.57	(0.91)	
Age	1	19–83	52.4	13.1	−0.17	−0.09	−0.22	−0.20	−0.16	−0.13	
Gender					−0.01	0.00	0.01	0.19	0.15	0.06	−0.14

Note: $n = 347$; correlations greater than .10 are significant at $p < 0.05$; coefficient alpha on the diagonal, where 0 = male and 1 = female.
SC, Status Consumption (Eastman *et al.*, 1999); BESC, Brand Engagement with Self-concept (Sprott *et al.*, 2009); MVS, Material Values Scale (Richins, 2011); Maven, Market Maven Scale (Feick and Price, 1987).

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RESULTS

Preliminary analyses

Prior to testing the hypotheses, we factor analyzed the individual items from each multi-item scale. In each case, save one, the results showed one-factor solutions, indicating unidimensionality. The exception was the Material Values Scale, which is supposed to have a three-factor solution reflecting the three dimensions of materialism it assesses. For the purposes of the cluster analysis, which we deemed did not need the fine-grained assessment of materialism provided by the subscales, we combined all nine items to form a single measure of materialism. Next, we computed the internal consistency of the summed scales. The coefficient alpha values in Table 1 show that all the summed scales had adequate internal consistency. Table 1 also presents the correlations among the measures. The correlation coefficients show that all the latent constructs are positively related. The two demographic variables, age and gender, manifested only weak relationships with the latent constructs, suggesting that clustering schemes that rely heavily on socioeconomic and demographic data might overlook the motivational elements of consumption that we seek to demonstrate in the present study. Age was negatively correlated with each of them, and the only gender differences detected were that women shop more than men do, hardly a surprising finding, and that women scored higher on the market maven scale than the men did. Goldsmith *et al.* (2006) report this latter finding.

Cluster analysis

We used the two-step cluster program in SPSS (IBM Corporation, Armonk, NY, USA) to segment the sample into clusters based on their scores on three criterion variables: status consumption, brand engagement with self-concept, and materialism. We chose these variables as the clustering criteria because they conceptually represent similar, related constructs and are positively correlated across numerous studies (e.g., Fitzmaurice and Comegys, 2006; Goldsmith *et al*., 2012). Cluster analysis is a "discovery" technique for finding associations and groups of individuals within data sets (Burns, 2000; Mooi and Sarstedt, 2011), and so it is appropriate for the goal of this study guided by the belief that there is a "type" of consumer that can be distinguished by high scores on these variables. The analysis (using log-likelihood distance and Schwarz's Bayesian criterion) produced two clusters, which we termed "regular" ($n = 215$, 61%) and super consumers ($n = 136$, 39%). The clustering criteria of Akaike's information criterion yielded almost identical results. The variables in order of importance to the clustering solution were status consumption, brand engagement with self-concept, and materialism. Analysis of variance (ANOVA) showed that the means of the three criteria variables were significantly different between the clusters (Table 2).

Hypothesis tests

To test the hypotheses and assess age differences between the super and regular consumer groups, we used one-way ANOVA to compare the mean scores of the four dependent variables, market mavenism, shopping, spending, and age, between the two groups of consumers, regular and super. These results appear in Table 2. The results confirm all three hypotheses. When compared with the regular consumers, the super consumers scored significantly higher on the measures of market mavenism, amount of shopping, and amount of spending. In addition, the super consumers reported a significantly lower average age (49.3 years) than did the regular consumers (54.4 years). Thus, as we hypothesized, the type of consumer we label as "super" shops more, spends more, and is more of a market maven than other more regular consumers. Interestingly, when we cross-tabulated gender with the two groups of consumers, the results were not significant ($\chi^2_{(1df)} = 0.031$, $p = 0.86$). Finally, because Levene's tests of homogeneity of variances showed that our dependent variables had unequal variances across the two groups, we computed the Welch and Brown–Forsythe tests as well. These results were identical to the ANOVA results, demonstrating the robustness of the conclusions.

Table 2. One-way analysis of variance results comparing means of criterion and dependent variables

Variable	Cluster	n	Mean	SD	F	df	p	η^2
Criterion variables								
Status consumption	Regular	215	8.3	2.6	294.4	1, 349	<0.0005	0.458
	Super	136	14.1	3.8				
Brand engagement	Regular	215	19.3	5.8	248.2	1, 349	<0.0005	0.416
	Super	136	28.6	4.7				
Materialism	Regular	215	21.8	5.0	179.8	1, 349	<0.0005	0.340
	Super	136	29.0	4.8				
Dependent variables								
Maven	Regular	215	19.5	4.8	34.7	1, 349	<0.0005	0.091
	Super	136	22.4	4.2				
Shopping	Regular	215	7.8	3.2	22.5	1, 349	<0.0005	0.061
	Super	136	9.6	3.9				
Spending	Regular	215	3.5	2.2	51.7	1, 349	<0.0005	0.133
	Super	136	6.0	4.3				
Age	Regular	214	54.4	12.5	13.0	1, 345	<0.0005	0.036
	Super	133	49.3	13.4				

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DISCUSSION

The purpose of this paper is to introduce the concept of the super consumer, a unique segment of consumers who appear to be highly motivated by the desire for status and to acquire material objects and who use brands to express their self-concept. Our study used cluster analysis of data from a sample of adult consumers to reveal an instance of this segment and to test three hypotheses regarding its other characteristics. We found that, as hypothesized, the super consumers were more likely to be market mavens than regular consumers and to shop more and spend more. They were also younger on average than regular consumers were, but there was no relationship between being a super consumer and gender in our sample. We feel that there are important theoretical and managerial implications to be derived from the study.

Theoretical implications

Much academic market research looks at consumers in terms of single-criterion variables. This practice is unrealistic in that consumers are infinitely complex and their behavior not easy to predict. By combining three psychologically based characteristics, we have moved toward a more complex description of consumer motivations. We feel that, theoretically, we have advanced the study of several aspects of consumer psychology. Researchers usually treat materialism, brand engagement, and status consumption in some isolation from each other as separate topics of study. We propose that looking at them in combination can reveal deeper insights into how they motivate consumers jointly rather than alone. Our findings suggest that these three concepts are highly interrelated.

Using three or more constructs to form clusters might yield more refined distinctions between groups of consumers and thus lead to better predictions of behavior. For example, if consumer responses to different marketing mixes were added to the clustering mixture, we might find out how small differences in motivation affect preference for small mix differences. The method we have used here has promise for delivering more sensitive measurement power when testing marketing strategy as well as building nomological networks of consumer motivation.

From a theoretical perspective, describing the super consumer has the potential to contribute expanded understanding of how customers are differently motivated. A nuanced and quantitatively based description of the motivational underpinnings of important groups of consumers could be the basis for new models of consumer behavior. Currently, the individual-based inputs to the consumer decision-making process are atomistic and measured by an ever-expanding list of scales. Grouping those inputs should clarify their importance and make them more useful in understanding and predicting the decision process.

Managerial implications

Marketers have long segmented the market using various criteria. Many companies perform this service (e.g., Nielsen, MasterCard, and PRIZM) and promote their prebuilt segmentation typologies. A recent CNN report (Hicken, 2013) illustrates this activity by describing Acxiom's analysis of a huge database of consumers it tracks that yields 70 categories of shoppers! These commercial examples, however, use demographics and purchase histories heavily to create and profile the segments, perhaps overlooking motivational elements (Sharp, 2010). Our approach in contrast uses three psychological constructs to identify a type of consumer more general than these commercial segments. It is important to note that the consumers we have identified may not differ much from others when purchasing groceries or the typical consumer packaged goods that are the main concern of commercial models. We do not propose that our findings are "superior" in any way to the commercial segmentation products, based as they are on large data sets more likely to be projectable to the US population than is ours. Instead, we propose a unique insight into consumer motivations for buying that can be converted into thinking about a type of consumer who is defined less by his or her demographic features than by their motivations to buy, especially when it comes to shopping goods rather than convenience goods.

Marketers, especially those of status-conferring or self-concept-related brands, could use this concept and the profile variables to identify buyers highly motivated to purchase their brands and emphasize these themes in marketing promotions. Promotions might focus on the product characteristics that appeal to super consumers such as the social value of their products or the specialness of the consumer who is "in the know" about a certain product. They could develop and/or market new products targeted to this segment, and based on their insights into the motivations driving these consumers, they could build long-term relationships with them. "Supers" are likely to behave like "regulars" when they buy fast-moving consumer goods, as predicted by the Duplication of Purchase Law (Sharp, 2010). When status goods are involved, however, brand names become more important because the name is the principal indicator of status. The supers are more likely to shop for status, and that status is often conferred by the brand name as much as by the item itself. While the status-conferring power of brands shifts over time, and sometimes quickly, in its moment, the brand has power. The enhanced spending and word of mouth characterizing super consumers should repay any investment in targeting them. Furthermore, if Watts and Dodds's (2007) proposal that the diffusion of market information is driven by both a small number of influentials (such as mavens) and a large number of average individuals who may actually play a larger role in a number of instances is correct, then focusing marketing efforts on getting super consumers to spread positive word of mouth might be more efficient than focusing these efforts solely on mavens.

Similarly, retailers who specialize in status-laden products like Abercrombie & Fitch, Tiffany & Co., and Fred Perry look to the super consumer type of buyer as the prime segment of shoppers with whom they would like to establish long-term relationships. By stressing the status, luxury, and self-expressive nature of the brands they carry, such stores can create stories and environments that appeal especially

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to this type of customer and also become aspirational shopping venues for regular consumers. As knowledge accumulates regarding the psychology and motivations of super consumers, these retailers can avail themselves of deep insights into their best customers.

Limitations and further research

While the study has several strong features, chiefly the adult sample and high reliability of the measures, there are limitations as well. The principal limitation lies in the exploratory nature of the cluster analysis technique. The number and size of the clusters derived from any given cluster analysis can vary depending on the analyst's choices of distance measure, clustering technique, and the number of clusters to retain (Burns, 2000, Ch. 23; Mooi and Sarstedt, 2011, Ch. 9). The results of cluster analyses can also vary by samples. Thus, the present study's findings must be considered "proof of concept" and not definitive. This conclusion especially holds for the estimated size of the super consumer segment. Different clustering approaches will reveal different segment sizes. To demonstrate this, we reran the cluster analysis using the Euclidian distance instead of log-likelihood and found a different solution in which the super consumers comprised only 10% of the sample. Comparing the two clusters for the dependent variables, however, yielded the same results as our original analysis. Thus, we feel that our study demonstrates the viability of a super consumer segment, but we hesitate to make any claims regarding its size. For the overall US population, this determination awaits the results of analyzing large-scale national samples beyond the reach of our resources.

Whenever spending is used as a measure, it is desirable to control for income, and we did not have income information in our data. Without that information, we do not know if the greater spending of our super consumers is explained totally by greater income or not. Either way, there is value in the demonstration of greater spending, but income information would shed more light on what is really happening. A next study would include a measure of income. However, not accounting for income is only a minor issue. Of course, income influences spending, but the effect is to facilitate or enable consumption behavior that is motivated by psychological characteristics.

Another limitation of the study lies in the choice of variables as criteria to define the super consumers. We based our use of three variables on their related conceptualizations and on prior empirical findings, showing them to be highly related, yet identifying different dimensions of a pattern of consumption. Other studies might use additional concepts to further refine and deepen theoretically the notion of the super consumer. In addition, further research could expand the number and type of dependent variables used to describe the behaviors of the super consumer in addition to the limited number we used. For instance, media use and price sensitivity suggest themselves as prime candidates because of their theoretical value in "fleshing out" the picture of the super consumer and their managerial applications.

Of necessity, our study raises more questions than it answers. All we have been able to do is identify a potential segment of consumers who manifest a clear pattern of consumer characteristics. These consumers appear to be materialistic, use brands to express self-concept, act as market mavens, and spend more than other consumers do. Although researchers have already studied these characteristics separately, ours is an attempt to combine them to identify an interesting and potentially important consumer segment. Future research should continue to investigate how they differ from other consumers.

The identification of a super consumer segment in no way suggests that marketers should ignore other consumers who are less driven by materialistic and status motives and who might be lighter spenders than are the supers. Attracting these consumers should also yield important sales, share, and profits to marketers who can appeal to them successfully (Sharp, 2010). Moreover, the existence of the super consumer segment also suggests its opposite, a type of consumer who is frugal, bargain seeking, and independent of the influence of others and who disregards status and material concerns (Goldsmith *et al*., 2014; Goldsmith and Flynn, 2015). Although research by Clark (2006) and Kahle (1995a, 1995b) suggests this consumption pattern, additional study of these consumers warrants attention. The frugal consumer segment would seem to be the opposite of the super consumer and thus would deserve special study in its own right.

BIOGRAPHICAL NOTES

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Emotions and cognitions in consumer health behaviors: insights from chronically ill patients into the effects of hope and control perceptions

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ABSTRACT

The lack of compliance to medical advice is a widely recognized healthcare concern with important implications to consumer well-being. Through an in-depth examination of the narratives provided by chronically ill patients, this study contributes to transformative consumer research by offering a better understanding of patients' compliance or lack of compliance with medical advice. The narratives are examined with a focus on two potential antecedents: hope and perceptions of control over health outcomes. Findings suggest that although control perceptions play a crucial role in compliance, chronically ill patients often feel that they have no control over their health outcomes. The narratives reveal that the positive emotion of hope is a motivator for positive health behaviors. Additionally, the lived experiences accounts suggest a possible relationship between hope and control perceptions: patients' belief in their ability to manage their chronic illness facilitates hope but might not be essential to it. The importance of healthcare providers' role in cultivating hope and customizing their interactions with patients is discussed. The implications also indicate that health initiatives aimed at increasing treatment compliance should consider alternatives to messages calling for patients to take control of their health. Instead, future research on health behavior should look beyond social cognition models of health behavior and focus on the role of positive emotions such as hope. Copyright © 2015 John Wiley & Sons, Ltd.

INTRODUCTION

Many chronically ill individuals fail to comply with medical advice (Dellande *et al*., 2004; Schuchler and Kivinicm, 2006). This lack of compliance remains a widely recognized concern with important social and marketing implications. Although modern technological and medical advancements have decreased mortality rates, they have increased the prevalence of chronic diseases such as heart disease, HIV, diabetes, and cancer (Jacoby and Keinan, 2003). Chronic conditions, the most frequent causes of death in the USA (Glanz *et al*., 2008), require lifelong behavioral adaptation and compliance with health regimens. However, the cognitive and emotional factors that are important to understanding why some individuals comply while others do not are not fully understood (Schuchler and Kivinicm, 2006; Quine *et al*., 2012). Diseases and medical decision-making are two of the pressing issues and fundamental problems in life that have not been tackled enough in consumer research. "Enhancing consumer welfare" is one of the goals of transformative consumer research, which focuses on such social problems and challenges as consumer health (Mick, 2006).

This study contributes to the call for an increased marketing emphasis on "improving well-being through transformative research" (Ostrom *et al*., 2010: 9) by illustrating the experiences of chronically ill consumers and showing how their emotions and cognitions affect their behavioral outcomes, especially their compliance with medical regimens. It aims at providing a lens for examining consumer health behavior through models that incorporate – in addition to cognitive factors – the role of affect, especially positive affect, in consumer judgments and decision-making. Specifically, the objective of this research is to offer a better understanding of patients' compliance or lack of compliance by examining two antecedents: hope and perceptions of control over health outcomes and behavior requirements, through the narratives of informants living with chronic illness.

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Social cognition models of health behavior

In the health behavior literature, intrinsic cognitive factors such as knowledge, risk perceptions, behavior efficacy, and control perceptions have been the focus of social cognition models, which are often used to predict health behaviors (Conner and Norman, 1996). These models emphasize the rationality of human behavior, and although they have provided strong theoretical bases, they have failed to recognize the impact of other variables such as emotions and interpersonal relationships (Conner and Norman, 1996; Cox *et al*., 2010). The concept of perceptions of control has been a widely used central component of social cognition models since its introduction in the theory of planned behavior (Ajzen, 1988). The positive effects of perceptions of control on health are well documented in consumer research and consumer psychology studies. In fact, past research results have revealed that higher perceived control is associated with lower depression symptoms in cancer patients, better adjustment to chronic illness (Thompson *et al*., 1993), increased coping efforts, more positive self-image, and decreased distress (Helgeson, 1992). Benefits of control perceptions also include more positive adaptational outcomes to the disease and treatment reflected through better daily functioning, improved physical well-being through increased compliance with the treatment, enhanced interpersonal relationships and a lower focus on the limitations imposed by the disease, and avoidance of negative psychological effects that can result from loss of control (Tangsrud and Smith, 2000).

As a result, health messages frequently urge patients to "take control" of their health, despite the inherent differences in how patients make decisions (Scammon *et al*., 2011), and in the emotional and cognitive factors that motivate them to perform positive health behaviors (Haley *et al*., 2011; Mai and Hoffmann, 2012). These one-message-fits-all strategies fail to recognize that chronically ill patients often perceive that they lack control over their health and experience pain, uncertainty, and fear (Berry and Bendapudi, 2007). What about patients who feel that they lack control? Does loss of control explain today's low compliance levels? What role do emotions play in consumer health decisions? The focus of social cognition models on cognitive factors that influence consumer health behaviors, including control perceptions, ignores the importance of emotions, which deserve a central role in understanding consumer judgment and decision-making (Pham *et al*., 2001).

The role of positive emotions

For the past decade, the role of emotions has blossomed in marketing research. The explored relationships between emotions and consumer behavior aspects included the following: the effect of negative emotions on adherence to positive recommendations (Khan and Frances Luce, 2003), the effects of anxiety and fear of death on the nature of consumption (Pavia and Mason, 2004), the relationship between anxiety caused by mortality salience and self-regulation or self-indulgence behaviors (Ferraro *et al*., 2005), the effects of different negative emotions on coping (Ragunathan *et al*., 2006), the role of positive versus negative emotions in consumer processing of information (Argawal *et al*., 2007), the effect of emotions on the evaluation of service outcomes or more specifically on satisfaction with these outcomes (Dubé *et al*., 1996), and the effect of hope on search, processing, and evaluation of information and on consumer attitudes and satisfaction (MacInnis and De Mello, 2005; De Mello *et al*., 2007).

Health care is a highly emotional credence service context in which affect has a complex relationship to outcomes (Garry, 2007). Negative emotions such as anxiety have been more commonly investigated in the healthcare context (Dubé *et al*., 1996). Yet, illness is a source of psychological stress accompanied by a coping process, therefore resulting in both negative and positive emotions that are not mutually exclusive (Garry, 2007). The role of positive affect as it impacts health outcomes such as coping still needs further understanding (Folkman and Moskowitz, 2000; Cavanaugh *et al*., 2007; Griskevicius *et al*., 2010; Winterich and Haws, 2011). Although studies of general effects of positive emotions benefit the marketing literature, some researchers have called for studies of individual emotions for beyond-valence effects (Dubé *et al*., 1996; Lerner and Kelner, 2001; Ragunathan *et al*., 2006). In fact, emotions of the same valence and intensity can have varying effects on consumer decision-making because they hold different information value as posited by the affect-as-information literature (Pham, 2004; Pham, 2009).

A major research gap in health behavior is "the role of positive emotions in coping, including ideas such as love and hope" (Glanz *et al*., 2008: 229). Hope is "a positively valenced" (MacInnis and De Mello, 2005), second-order intellectual emotion for which we have a limited understanding (Williamson, 2002). Hope is related to better outcomes in athletics, physical health, psychological adjustment, and psychotherapy (Miller, 2007); however, its role as a positive emotion "has not been a center of theoretical attention and research in social sciences," despite being vital for humans (Lazarus, 1999: 676). What if patients experience loss of control but have high levels of hope? How do patients experience hope and how does it affect their health behaviors? Are the constructs of hope and control perceptions related? If so, how?

STUDY

Method

To better understand compliance behaviors of chronically ill patients and to learn about hope and control perceptions as they affect behavioral consequences such as compliance with medical regimens, a qualitative discovery-oriented method is used because it allows for capturing the complexity of consumer thoughts, feelings, and behaviors (McCracken, 1988). Specifically, this research is based on phenomenological interviews. Phenomenology focuses on the lived experiences of individuals and seeks to describe those experiences thematically from the "first-person view". Although there are many ways to conduct phenomenological research, the interview method has benefits to meeting the objectives of this study because it is powerful in getting to an in-depth understanding of the experiences of chronically ill patients as they are lived (Thompson *et al*., 1989).

Most informants were recruited from the student and employee population at a large northeastern state university through advertisements on university bulletin boards requesting interviews with adult men and women who have been diagnosed with a chronic illness and who have medical coverage (to control for the effects of negative emotions and stress caused by lack of health insurance). Additionally, to insure better immersion in patient discourses, multiple information sessions and support groups run by the podiatric medical school for diabetic patients were attended, which led to the recruitment of two informants.

The study is based on the narratives of 10 participants (Table 1), three men and seven women, from 28 to 50 years old, with at least some college education. Participants were paid $20. Each informant has a lifestyle-changing chronic condition such as type 1 diabetes, type 2 diabetes, asthma, hypertension, HIV, and lupus. The face-to-face phenomenological interviews lasted between 1 and 2 hours. The interviewer was a non-directive listener for the major part of the dialogue with informants. The interviews were semi-structured in that the interviewer used non-leading descriptive questions related to the topic of the research, with spontaneous questions that follow the flow of the dialogue in between (Englander, 2012). Examples of these descriptive questions include "what was it like to be diagnosed with (chronic illness)?" "tell me about the times when you did

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Table 1. Description of informants ($N = 10$)

Name (alias)	Age (years)	Ethnicity/race	Employment	Marital status	Chronic condition and duration
Julie	30	Indian American	College student	Single	Insulin resistance: 4 years
Sara	50	African-American	Unemployed	Widowed	Type 2 diabetes: 18 years
Dana	28	European American	College student	Single	Type 1 diabetes: 17 years
Allen	29	European American	College student	Married	Asthma: 14 years Hypothyroid: 4 years Gastroesophageal reflux disease: 1 year
Harry	41	European American	College student	Married	Hemiplegia: 7 years
Rachel	29	European American	College student	Single	Superior mesenteric artery syndrome: 4 years
Kathy	43	European American	Director	Married	Lupus: 9 years Chronic sinusitis: 6 years Hypothyroid: 2 years Hypertension: 1 year
Nora	29	European American	College student	Single	Severe asthma: 24 years
Mark	35	European American	Educator	Married	Hypertension: 4 years
Molly	37	African-American	College student	Single	HIV: 20 years

not follow your doctor's recommendations," "can you describe how much control you feel you have over your health?" and "tell me about how you foresee your future and the progress of your condition." The interviews were recorded, professionally transcribed, and then analyzed following the established guidelines of the phenomenological approach. Each transcript was analyzed autonomously to interpret the lived experience of the informant. Global themes were then identified by looking for similar experiences across interviews, using an iterative process moving continuously between individual interviews and the set of interviews as a whole (Thompson *et al.*, 1989; Thompson, 2005).

Narratives: living with a chronic illness

The narratives revealed differences among informants in terms of their control perceptions with a prevalence of informants who perceived a loss of personal control regarding their health outcomes when they found themselves living with chronic illnesses. Although the interviewer did not mention hope, the respondents revealed that hope is primary, salient, and profound in affecting informants' health behaviors. The lived experiences accounts revealed three principle emergent themes.

First, many informants experienced loss of personal control over their health, which led to negative emotional states of frustration, fear, and helplessness. These informants admitted that they were less compliant with their treatment than they should be. Conversely, those who perceived that they had personal control over their health outcomes reported that they were highly compliant with their treatment regimens.

Second, whether informants had high or low control perceptions, all indicated the importance of hope both as a mechanism they used to cope with setbacks and as a motivator for changing their health behavior. Additionally, they indicated that positive emotions such as hope might be related to their perceptions of control. In fact, by learning to manage their chronic conditions and thus having more control over their health, they experienced positive emotional change over time.

Finally, the narratives made it evident that informants had high perceptions of disease severity. They knew that lack of compliance could lead to serious and severe complications. However, their perceptions of susceptibility for disease complications were relatively low in that they hoped that they would somehow escape the dangers. Many informants either dismissed the more severe complications in their discourse or explicitly stated, "this will not happen" to them.

Loss of control: emotional and behavioral consequences

There were differences among informants in terms of their perceptions of control over their health outcomes. Many expressed feeling fear, frustration, helplessness, and a loss of control, particularly when they had been compliant but still experienced complications. It is not surprising that negative emotions accompany the stressful experience of an illness, especially when patients do not believe they have control over their health outcomes (Berry and Bendapudi, 2007).

> *I don't feel that I have significant control… Hypertension is genetic and I don't have either of the two risk factors smoking and being overweight. I blame genetics (Mark, 35, European American male: hypertension).*
>
> *I do not feel mostly in control of my diabetes. Why my blood sugar was high the other day… I don't know. I feel really frustrated but I have to accept it… I get really scared that this is happening and I feel that it is not fair because I am doing everything (Dana, 28, European American female: type 1 diabetes).*
>
> *On occasion, I'll feel helpless. Again, it's when I've done what I'm supposed to do. I've taken all my pills. I've gotten a good night sleep and I still feel bad. You know, the allergy pills only do so much… and so you get to a stage where you can't do anything more; you've done all you can. It's frustrating when you've done all you can and you still don't feel better (Allen, 29, Caucasian male: asthma, hypothyroidism, and gastroesophageal reflux disease (GERD)).*

The negative affective states that chronically ill individuals experience are expected to contribute to their health decisions by providing information about for instance, risks, motives, and the level of effort required by the situation (Pham, 2004; Pham, 2009). The following narratives by informants such as Dana, Mark, Allen, and Nora emphasize

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the importance of control perceptions and show that individuals who experience loss of control do not always comply with their treatment regimens, despite the negative consequences of noncompliance. Additionally, the informants' negative emotional states seem to be exacerbating the situation by signaling that the task requirements, such as having to take a pill every day or to cut down on sodium intake, are effortful (Pham, 2004).

I check my blood more than necessary but sometimes I make the decision not to follow guidelines… I feel bad later but I do it anyway. Nothing is really hard except that it always and constantly has to be done. I cannot take a day off which is incredibly annoying (Dana, 28, European American female: type 1 diabetes).

I almost take my medication everyday… I definitely lost weight but I did not cut down on caffeine or sodium. Sodium makes food tasty and I love eating. I am just not going to give that up (Mark, 35, European American male: hypertension).

I'm forgetful or I have a lot of things on my mind, and I don't always remember them as well as I should. I know if I don't take the pill, which I didn't take this morning, I'll feel it. I'm pretty good as far as taking the pills in general, maybe 90% of the time (Allen, 29, Caucasian male: asthma, hypothyroidism, and GERD).

It is very frustrating because I feel it doesn't matter what I do. I get really frustrated about doing all this when I feel like this… The medication affects my health in that it allows it not to get worse than this but there is no control over the setbacks… It is hard with the medications that have very bad side effects… weight gain, mood, no sleep, muscle pain… I push the time longer to take them. Then I feel everything is so exhausting and I get out of breath if I take a shower. I feel like giving up (Nora, 29, European American female, severe asthma).

Conversely, for informants with high perceptions of personal control over their health behaviors and outcomes, the narratives support the role of control perceptions in predicting healthful behaviors. People who believe that their actions influence their health are more likely to take responsibility for engaging in health-promoting behaviors (Conner and Norman, 1996). In some instances, informants reported having full control over their health. They blamed themselves and looked for actions they could have taken to prevent negative outcomes. Sara, for example:

I have complete control over my health… Sometimes my blood sugar level is high… and I wish I paid more attention to myself. Sometimes I do everything I had to do, but the blood sugar levels are up. We couldn't figure out why. I go back and think: why? Something else must have caused it… My sugar is reactive to stress, so I know I have to deal with things in life (Sara, 50, African-American female: type 2 diabetes).

Kathy expressed feeling in control, being responsible for her actions, and being willing to face their consequences.

I have control. Life is what it is and sometimes you have to do your responsibilities. I know if I make a choice, that I will face the consequences (Kathy, 43, European American female: lupus, chronic sinusitis, hypothyroidism, and hypertension).

Harry is another informant who said that his actions determine his health status and that he finds pathways to avoid or cope with situations beyond his control.

I have control over my health… things I do are clearly the primary factor determining my health, but it's certainly not the only factor… The physiological problem controls how your body understands fatigue, and so what happens is that I don't really have control over when I am tired… so I just try to prepare for it, plan around it happening, and not put myself in a situation where if I get exhausted quickly, I can't handle it (Harry, 41, Caucasian male: hemiplegia).

Past research has shown that perceptions of control generate increase coping efforts, enhance self-image, and cause more positive adaptational outcomes that are reflected in better daily functioning (Helgeson, 1992; Tangsrud and Smith, 2000). Sara, Kathy, and Harry perceived that they have high control and categorically expressed that they comply highly with doctor-prescribed medical regimens, unlike their counterparts who had low perceived control. In some instances, informants who perceived high personal control felt that they had extraordinary recovery and health status because of their control. They expressed a common theme of taking compliance to another level by devising their own systems and ideas, or by advocating for disease prevention among friends and family.

I have to exercise and take pills. I have a stationary bike; I spend a lot of time on that. And I walk as my primary form of transportation…. Rarely I miss doing what I have to do… I'm almost certain that I'm better because I respond to their ideas [the doctors] and I was looking for some new ideas because I've always taken an aggressive approach to my care… I push myself… They don't actually know how to explain how I am where I am because physiologically I shouldn't be this well off (Harry, 41, Caucasian male, hemiplegia).

Always … I even tell people what to do. I have more knowledge than others. I look out for myself, my mother, and my children. I take the pill every time… I think I am better than most people in following guidelines (Sara, 50, African-American female: type 2 diabetes).

I never disagree with my doctor… I take 11 different pills daily and watch caffeine because meds make you hyper. I never forget… CVS know exactly when to send a re-order. The hardest thing is scheduling doctor appointments and getting there but now I have a system (Kathy, 43, European American female: lupus, chronic sinusitis, hypothyroidism, and hypertension).

Hope: a coping tool and a motivator for behavior change

The narratives consistently showed that the emotion of hope is salient in the informants' minds. When they were asked to

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foresee how their conditions will progress in the future, many study participants expressed hope for a better tomorrow. Some hoped that they will no longer need medication, while others hoped that science will find a cure.

If I improve my diet and maintain a healthy life, my health would definitely improve, and I hope that I might not even need medicine anymore (Molly, 37, African-American female: HIV).

I might definitely have strokes and possible heart attack. They are pretty likely to happen – maybe in my sixties, but I am hoping that science advances and finds a solution for this. I hope that hypertension would go away (Mark, 35, European American male: hypertension).

My hope is that medical advances continue and one day I will not have to deal with it at all. I will be cured… in terms of progression, I am sure something might occur, but I don't see it progressing to be worse. I hope physicians will be able to catch it early and fix it (Dana, 28, European American female: type 1 diabetes).

The salience of emotions increases their role in consumer judgments and decision-making (Pham, 2004). Although few studies have investigated the relationship between hope and compliance, hope has been shown to lead to better adjustment and coping, lower distress, fewer doctor visits, and longer enrollment in drug treatment programs (Snyder, 2002). Consumer research has also supported the role of hope in enhancing self-regulatory outcomes, ceasing maladaptive consumption practices (MacInnis and De Mello, 2005), and increasing the occurrence of self-control behaviors such as avoiding unhealthy snacks (Winterich and Haws, 2011). The informant narratives showed that when participants faced bad days, their hope for better days generated intentions to make positive behavioral changes.

I just hope that the next day I feel better. I tell myself that the next day I am going to change, eat differently, exercise more, and have less stress (Rachel, 29, European American female: superior mesenteric artery syndrome).

One participant, a hemiplegia (cerebral hemorrhage) sufferer paralyzed on his left side, reported having hope from the beginning of his diagnosis, causing him to work very hard at improving his health and leading to phenomenal results.

It was obviously disappointing but I hoped I could overcome it. I have to some extent… I was told I would never be out of a wheelchair; that was a difficult thing to hear. But fortunately I am no longer in a wheelchair. I have a lot to live for so I push myself very hard (Harry, 41, Caucasian male: hemiplegia).

Emotions such as hope can convey goal-relevant signals and consequently have an adaptive role in consumer judgments (Pham, 2004). High hope has been found to motivate patients to strategize ways for enduring and countering pain, to initiate those strategies, and to continue using them (Snyder, 2002). Hope is also necessary for accepting life's setbacks (Lazarus, 1999). When goals are not reached, hope can still help individuals cope with failure (Snyder, 2002). Even when informants expected health setbacks, most informants hoped that they would not experience future major setbacks such as going blind or minor ones such as moving to higher medication dosages. Consistently, the informants mentioned positive behavioral change and adherence to treatment guidelines along with hope.

What I know I have to watch out for is neuropathy, my eyes, and cholesterol … What scares me most is that I could go blind. My hope is that when I am my mother's age, I will have some complications but not as much as her. Hopefully, I will have no cholesterol or eye problems. I am hoping that I will be able to drive (Sara, 50, African-American female: type 2 diabetes).

Overtime with negligence, I expect to have my medicine regimen changed to a higher dose. I don't want to switch to a new medicine so I try to follow guidelines as close as I can. I am hoping not to switch (Molly, 37, African-American female: HIV).

If I continue to eat what I want to eat and I do not follow the medications, that's a precursor to cancer. Also, if I eat sugar, diabetes is the biggest type of immediate threat… Positive attitude and acceptance have helped a lot. I hope that I will not have diabetes. Again, there was a transition in the initial phase when I used to fight then I realized that I needed a solution. The solution is behavioral changes and the way I live life… change used to be a mandate, now I enjoy it (Julie, 30, Indian American female: insulin resistance).

Being realistic I might have problems like not being able to have children or need lung remodeling. I hope I never get there. I hope that it will get better, I like to hope that the things I am doing will help (Nora, 29, European American: severe asthma).

Lupus can have irreversible kidney damage but I never had these problems. Everything is under control. I am hopeful. I still can have everything I want in life and be able to do everything I want to do. I don't feel sorry for myself, I never feel like a victim (Kathy, 43, European American female: lupus, chronic sinusitis, hypothyroidism, and hypertension).

Past consumer research is lacking in its investigation of the relationship between hope and control perceptions. A few researchers have made suggestions about the relationship between these two constructs. Henry (2004) posited that helplessness or loss of control leads to hopelessness, while Lazarus (1999) believed that control perceptions can facilitate hope but are not necessary for it. Perceptions of control and positive emotions such as hope clearly seem to be related in Kathy's narrative: "Everything is under control. I am hopeful." Although many informants had low perceptions of personal control over their health, several said that as they learned to manage their chronic illness over time, they gained control and consequently experienced more positive emotional states.

I'm really happy now that it's under much better control with medication and the steps my doctor suggested taking. So, it's under good control. I'm happy with that (Allen, 29, European American male: asthma, hypothyroidism, and GERD).

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I wasn't sure what's wrong with me, I wasn't sure about anything, and I was frustrated because I didn't think there's hope and that I am just going to keep feeling bad and worse… but then when I actually started feeling better, and I realized that I can do something about it, that actually changed. I feel that it is manageable… Now I feel better, I feel healthy (Rachel, 29, European American female: superior mesenteric artery syndrome).

I realized that after a while, I wasn't going to drop dead and that I had to go back to school. After some time of not being sick, I realized that I might be able to manage it. Now I feel like I got a lot accomplished, I get up, take medication, exercise, and feel positive and focused (Molly, 37, African-American female: HIV).

Risk of noncompliance perceptions: the unlikely severe risks

When Sara was asked about the future progression of her chronic illness, she mentioned blindness as her most severe risk, but then she dismissed it by imagining herself driving in the future. Julie, quickly dismissing fears of cancer, hoped that her insulin resistance will not lead to diabetes, a less severe risk. Positive emotions have been found to lead to lower risk perceptions (Chaudhuri, 2001), which could cause a non-coping-related negative outcome in higher susceptibility to risk and fraud; that is, strong hope can alter consumer perceptions of risks and rewards and make them willing to undertake more risks (MacInnis and De Mello, 2005). Although hope can signal higher risks through its association with uncertainty, which drives individuals towards lower risk options such as following the doctor's orders (Ragunathan *et al*., 2006; Pham, 2009), it seems that when asked to make judgments related to the distant future, consumers tend to discount that informational value of hope (Chang and Pham, 2013). This was evident in the narratives of many informants who, similar to Sara and Julie, when asked about possible noncompliance consequences, either dismissed the severe risks or clearly stated that it is unlikely for them to experience these risks.

I could die. I could go to sleep and not wake up if my lungs shut down. I don't think it will happen because I know when I am getting into a dangerous spot (Nora, 29, European American female: severe asthma).

Well, the hypothyroid could lead to death if I don't take the pill but I just don't even think about it… I don't forget to take the pill… so it's nothing that enters my thought process (Allen, 29, European American male: asthma, hypothyroidism, and GERD).

If I have the symptoms for prolonged time, I probably should see a physician, because I probably would require surgery… See, I don't feel they [the complications] are likely to occur to me… it's just because I'm doing well, I don't think I'm going to be one of those who would actually need the surgery (Rachel, 29, European American female: superior mesenteric artery syndrome).

DISCUSSION

This study contributes to consumer research by highlighting the role of positive affect in consumer health behavior and the importance of examining consumer judgments and decision-making through models that incorporate both cognitive factors such as perceptions of control and positive emotions such as hope. Compliance with medical regimens for people living with chronic illnesses constitutes a fundamental problem in today's society. The present research provides insights into the lived experiences of chronically ill patients and furthers our understanding of healthful compliance behaviors, through the exploration of control perceptions and the positive emotion of hope. It, therefore, also contributes to the transformative consumer research movement aimed at enhancing consumer well-being (Mick, 2006; Ostrom *et al*., 2010).

Aligned with social cognition models of health behavior, the findings of this study indicate that participants who believe they have control over their health outcomes are more likely to engage in positive health behaviors. Those who believe they lack personal control are less likely to comply with doctors' recommendations, despite being aware that noncompliance could have harsh consequences. Although perceptions of control are important for patient compliance and have dominated the health behavior research literature, health behavior models are greatly limited in their lack of attention to emotions (Glanz *et al*., 2008).

Consumer emotions were prevalent in the informants' narratives. While many informants experienced loss of personal control, most narratives showed that the emotion of hope is salient in consumers' minds and prevalent as a coping resource and motivator for better health behaviors. In the context of chronic illness, emotions such as hope can provide beyond-valence information about risks, consumer motives, and the level of effort required by tasks such as compliance with medical regimens (Pham, 2004). Although researchers have been reluctant to address the concept of hope (Lazarus, 1999: 654), several studies have posited that hope plays a considerable role in consumer coping styles (Henry, 2004), decision-making, information processing, product evaluation and choice, satisfaction, and risk perception (MacInnis and De Mello, 2005; De Mello *et al*., 2007). The narratives confirm that hope affects compliance and is linked to risk perceptions. In fact, while hopeful informants are motivated to engage in positive health behaviors such as following the doctor's orders, they also tend to dismiss their susceptibility to severe risks and complications resulting from noncompliance.

Substantial implications

Affect can play an important adaptive role in consumer judgments and decision-making because it can convey goal-relevant signals and provide informational value (Pham, 2004; Pham, 2009). In the health services context, positive emotional states have been shown to improve customer participation in health services and consequently lead to higher satisfaction and better health outcomes (Gallan *et al*., 2013). There remains however a major gap in the consumer

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research literature regarding the beyond-valence effects of individual emotions (Dubé *et al*., 1996; Lerner and Kelner, 2001; Ragunathan *et al*., 2006), and more specifically positive emotions such as hope and its role in consumer health decisions (Glanz *et al*., 2008). The main contribution of this study is in providing a deeper understanding of the specific role of hope in consumer health behaviors beyond its positive valence effect.

Furthermore, this research provides a preliminary picture of the nature of the relationship between hope and control perceptions, two important potential antecedents of compliance with medical regimens. Types III emotions, such as hope, are based on the individual's controlled appraisal of the situation's characteristics, for example, having low control or high uncertainty (Pham *et al*., 2001; Pham, 2004). How do appraisals of control affect hope? Some researchers have suggested that hope and control have a merely correlational relationship, assuming that individuals who feel they have control over their environment have resources to exercise control and therefore have higher levels of hope (Jacoby and Keinan, 2003), while others have hypothesized that helplessness is a necessary antecedent to hopelessness (Henry, 2004). MacInnis and De Mello (2005) and Lazarus (1999) posit that the appraisal dimension of agency – control over the situation's outcome – is not relevant to the emotion of hope, while the dimension of certainty is. Consistent with these expectations, the narratives in this study suggest that hope is salient and accessible even for informants experiencing loss of control, and that hope and other positive emotions rise when consumers gain more personal control through better illness management. Therefore, perceptions of control seem to facilitate hope but are not essential to it.

This study has limitations that tamper with the implications and findings, which are suggestive at best. As an exploratory study, it does not allow empirical testing of the relationships between control perceptions, hope, and compliance. Also, chronically ill individuals certainly have more complex experiences than the interviews revealed. Future research should examine the effects of hope on health outcomes, health behaviors including compliance with treatment regimens, and satisfaction with health service providers and their treatment recommendations. Future studies should also empirically examine the cognitive appraisal properties of hope, its relationship to control perceptions, and how it influences consumer behaviors in other service contexts that require consumer participation, such as financial and insurance services.

Strategies to increase compliance

Better patient compliance can enhance countless lives, but patients vary in terms of how much control they perceive they have over their health outcomes. Therefore, a unified message focusing on "take control of your health" might not work for everyone. Providers must manage patient affect (Gallan *et al*., 2013) and foster hope if they are to improve patient compliance (Clayton *et al*., 2008). Also, health messages aimed at motivating positive health behaviors should find a balance between different cognitive and emotional factors that motivate consumers (Haley *et al*., 2011). Messages about hope can be effective and powerful. This research takes an important step towards better understanding the lived experiences of chronically ill patients. These experiences are rich in emotions, and hope plays a central role as a salient and pervasive positive emotion that can drive consumers towards more positive health behaviors.

BIOGRAPHICAL NOTE

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The moderating role of consumer entitlement on the relationship of value with customer satisfaction

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ABSTRACT

This research provides an extension of Oliver's (1980) expectancy disconfirmation model of satisfaction by examining the moderating role of consumer entitlement in the relationships between service quality and perceived value with customer satisfaction. Using a sample of season ticket holders of the National Hockey League franchise in the southeastern USA ($n = 234$), we found that consumer entitlement moderates the relationship of value with satisfaction, such that the impact of consumer-perceived service value on satisfaction is mitigated for highly entitled consumers. That is, the positive value–satisfaction relationship is stronger for individuals low in consumer entitlement. This finding suggests that highly entitled consumers' satisfaction judgments are dominated by expectations, while less entitled consumers rely more on disconfirmation assessments. Strengths, limitations, suggestions for future research, and practical implications are offered. Copyright © 2015 John Wiley & Sons, Ltd.

In recent years, the popular press has shown a burgeoning interest in the concept of entitlement. Greenberger *et al.* (2008) reported a 300 per cent increase in newspapers' use of "sense of entitlement" between 1996 and 2006. Similarly, empirical research has found that Americans are experiencing unprecedented levels of narcissism (Twenge, 2006). To wit, the youngest members of the millennial generation (often referred to as the "entitlement" cohort) have been characterized as "possessing a greater sense of entitlement" than its older millennial cohort members (Debevec *et al*., 2013). Psychological entitlement and narcissism are both characterized by unrealistic expectations (American Psychiatric Association, 1994; Harvey and Martinko, 2009), which suggest that these constructs may have important implications for services marketing (which is all about managing expectations). In particular, how does consumer entitlement (Boyd and Helms, 2005) affect the long established service quality and perceived value with customer satisfaction relationships?

Using a sample of a professional sports franchise's season ticket holders, we examined these relationships. We chose this sample for a number of reasons. Empirical research found upper class individuals to exhibit increased levels of entitlement (Piff, 2013); season ticket holders tend to be higher in income than the majority of fans (51% of our sample reported an income of over $100,000). Additionally, season ticket holders have traditionally been treated like special customers, with perks such as lower ticket prices, prime seating, priority access to playoff tickets, discounts on merchandise, and better parking. Currently, a popular trend is to provide season ticket holders experiential benefits not available to others. This can include special autograph sessions, photo days, access (and good seats) to early batting practice, and play day on the field for kids. One of the authors, a former front office employee of a Major League Baseball franchise, recalls a very popular offering of an opportunity for season ticket holders to participate in live batting practice on the field with a member of the team's pitching staff. One can imagine that such perks could certainly serve to increase expectations and influence levels of entitlement of season ticket holders. Fisk and Neville (2011, p. 391) related that "elevating customers' status may serve to fuel perceived entitlement, making it difficult for employees to manage patrons' service-related expectations." Finally, the individual's perception of being a special customer is central to the very definition of consumer entitlement as introduced by Boyd and Helms (2005).

Based on Oliver's expectancy disconfirmation paradigm of satisfaction, it is likely that higher levels of consumer entitlement will mitigate the positive effects of service quality and perceived value on customer satisfaction. This suggests that service quality and perceived value may in a sense become "hygiene factors" (Herzberg, 1987) for service marketers with entitled customers. While their presence may not lead to customer satisfaction, their absence could certainly limit it, potentially hurting an organization's revenue gains and profitability. An attempt to shed more light on the complexity of these relationships is one goal of this research.

We believe that this paper will make a number of contributions to empirical research and practice. First, this study will answer Anderson's (2007) call for research that provides a richer understanding of the service quality and perceived value with customer satisfaction relationships, given their fundamental role in producing customer retention and profitability. Second, this study will help to fill a noticeable gap in the marketing literature on the concept of consumer entitlement, especially its impact on the formation of satisfaction judgments. Third, we hope that our results will inspire service marketers to provide highly entitled consumers with increasing opportunities to participate or "co-create" their service experiences, minimizing the potentially negative effects of consumer entitlement.

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BACKGROUND AND RESEARCH HYPOTHESES

Consumer entitlement

Although still in its academic infancy, consumer entitlement is grounded in the construct of psychological entitlement. Harvey and Harris (2010) defined psychological entitlement as "a stable tendency toward highly favorable self-perceptions and a tendency to feel deserving of high levels of praise and reward, regardless of actual performance levels" (p. 1640). Similarly, Fisk (2010, p. 104) suggested that entitlement is "fueled by inaccurate perceptions regarding the number or type of outcomes owed to the self (formed in response to distorted views of the validity of one's performance inputs) that exceeds what would be considered normative according to prevailing social allocation rules and that when acted upon, may negatively impact others." Not surprisingly, research has associated the construct with perceptions of inequity (King and Miles, 1994), unethical behavior (Hamilton, 2003), poor working relationships, job dissatisfaction (Naumann *et al*., 2002), pay dissatisfaction (Graham and Welbourne, 1999), supervisor conflict, and turnover intentions (Harvey and Martinko, 2009).

The study of psychological entitlement has emerged from the literature on narcissism. According to The American Psychiatric Association, narcissism is a pervasive pattern of grandiosity, self-focus, and self-importance (Diagnostic and Statistical Manual of Mental Disorders (DSM-IV); American Psychiatric Association, 1994). Entitlement is one of the seven factors of the Narcissistic Personality Inventory (Raskin and Terry, 1988). Critical of the face validity of the entitlement subscale, Campbell *et al*. (2004) developed the Psychological Entitlement Scale to measure psychological entitlement. It should be noted that the authors emphasized two distinct elements of psychological entitlement: deservingness and entitlement. While these two terms are often used interchangeably, in their conceptualization, the source of each element differs. Specifically, deservingness refers to the expectations that accompany one's efforts or character, but entitlement connotes rewards due to a social contract.

In their effort to introduce the personality variable of psychological entitlement into a retailing context, Boyd and Helms (2005, p. 273) have defined consumer entitlement as "the extent to which the buyer perceives himself or herself to be a special customer of the firm." From its foundations in the study of narcissistic behavior, entitlement includes an individual's expectation of special treatment and automatic compliance to his or her wishes (DSM-IV; American Psychiatric Association, 1994). Kivetz and Zheng (2006) found that entitlement can be used by consumers as a justification for indulgent consumption (subsequent to hard work), suggesting that entitlement may be situational in nature as well as personality based. Finally, Van Steenburg *et al*. (2013) studied the role of entitlement on the formation of attitude toward the company and repatronage intentions among consumers who have experienced frustration in checkout encounters. Specifically, they found that individuals higher in entitlement held more positive attitudes and repatronage intentions when alone than when others were present, suggesting that their entitlement was somewhat of a "performance to demonstrate and reinforce their privileged beliefs" (p. 396).

Fisk and Neville (2011) found that frontline employees that were charged with serving and interacting with entitled customers realized negative outcomes for their efforts such as negative affect, feelings of dehumanization, and burnout. In concert with the conceptualization of Boyd and Helms (2005); Fisk and Neville (2011) found that "the behaviors of entitled customers seem to reinforce the notion that these individuals perceive themselves as superior to others" (p. 394). The common theme found in both psychological entitlement and consumer entitlement research is that there are potentially negative outcomes associated with the construct, warranting additional inquiry into consumer entitlement and its role in customer satisfaction.

Satisfaction

Despite his assertion that everyone knows what satisfaction is until they are asked to define it, Oliver (1997, p. 13) defined satisfaction as "a judgment that a product or service feature, or the product or service itself, provided (or is providing) a pleasurable level of consumption related fulfillment, including levels of under- or over-fulfillment." Operationally speaking, satisfaction is an assessment based on what is expected and what is realized in a service situation. More specifically, building on early laboratory work by Cardozo (1965); Oliver (1980) conceptualized satisfaction as a function of two facets, performance-specific expectation and expectancy disconfirmation. Despite its name sounding inherently negative (Oliver, 1997), disconfirmation refers to both service performance that are assessed to be below expectation standards (negative disconfirmation) and above expectations (positive disconfirmation).

The importance of satisfaction in creating desirable consumer outcomes for manufacturers and retailers alike has been well documented in the literature for a number of years. For instance, customer satisfaction has been found to positively impact both customer repurchase intentions and customer loyalty (e.g., Cronin and Taylor, 1992; Selnes, 1998), arguably two of the most vital outcomes for services marketers. Despite that findings that suggest its impact on behaviors can vary across customer segments and industries (Mittal and Frennea, 2010) and that the nature and magnitude of its impact on customer loyalty is still a work in progress (Kumar *et al*., 2013), there is a general consensus among marketing researchers and practitioners on the importance of satisfaction.

Service quality and value

Service quality has been defined as a consumer's judgment about a product's overall excellence (Zeithaml, 1988). The delivery of quality service has been characterized as conforming to customer expectations on a consistent basis (Lewis and Booms, 1983). One of the earliest and most widely adopted operationalizations of service quality is *SERVQUAL* (Parasuraman *et al*., 1988), which measures the five distinct factors of reliability, responsiveness, assurance, empathy, and tangibles. The positive impact of service

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quality on customer satisfaction is well documented in the marketing literature (e.g., Bahia *et al.*, 2000; Cronin *et al.*, 2000; Brady and Robertson, 2001). While this relationship has been validated on a number of occasions, there have been recent calls for a more thorough understanding of the nature of the relationship (Anderson, 2007). Efforts have challenged the assumption of a linear relationship between service quality and customer satisfaction, finding that changes in service quality levels may actually have an asymmetric effect on satisfaction. In particular, a decrease in service quality could have a greater negative effect on satisfaction than the positive effect of an increase in service quality (Mittal *et al.*, 1998; Anderson and Mittal, 2000). More recently, Falk *et al.* (2010) explored asymmetries and dynamics of this relationship through a comparison of functional and hedonic service quality as well as the experience level of the customer. Whether consumer entitlement plays a role in service quality's impact on customer satisfaction, however, has not yet been addressed.

In addition to service quality, customer-perceived value has been studied at length in the services marketing literature. The theoretical definition of value is generally accepted to be an assessment of quality and price; it is a consumer's perception of what they obtain for what they give (Zeithaml, 1988). This conceptualization of value includes a specific acknowledgement that what is given and what is received is all inclusive; it includes the tangible and intangible benefits of what is obtained (e.g., benefits due to personal interaction and image of the product) and the full sacrifice of what is given up for the purchase (e.g., time and search costs). This relationship holds for our study in that perceived service quality is an antecedent to value assessments. Value has been associated with desirable marketing outcomes such as repurchase loyalty (Baker *et al.*, 2002; Chaudhuri and Ligas, 2009) and willingness to pay a price premium (Netemeyer *et al.*, 2004). Most relevant to our study, Cronin *et al.* (2000) found a positive link between value and satisfaction, and Patterson and Spreng (1997) found that the impact of perceived value on desirable behavioral intentions is mediated through satisfaction. These well-established services marketing relationships serve as a basis for our first set of hypotheses and, in concert with our theorized role of consumer entitlement, serve as a background for our conceptual model, which can be examined in Figure 1.

H_1: A consumer's perceived level of service quality will have a direct, positive impact on their perceived value assessment.

H_2: A consumer's perceived level of service quality will have a direct, positive impact on their level of satisfaction.

H_3: A consumer's perceived level of value will have a direct, positive impact on their level of satisfaction.

The sample employed for this study consists of season ticket holders, who generally receive special treatment in exchange for their loyalty and the revenue realized from their patronage. The status among this customer group would suggest a potentially high degree of consumer entitlement, perhaps situational in nature (Kivetz and Zheng, 2006). "Elevating customers' status may serve to fuel perceived entitlement, making it difficult for employees to manage patrons' service-related expectations" (Fisk and Neville, 2011). Furthermore, Boyd and Helms (2005, p. 276) proposed that "entitled customers may be characterized by a heightened proclivity to presume that a service provider will meet their expectations." Given the heavily expectation-influenced nature of service quality, value, and satisfaction assessments, it would seem quite likely that consumer entitlement would play a role in those relationships. Specifically, because entitled customers are likely to "presume" a certain (probably higher) level of service, it would stand to reason that, while less entitled customers will tend to be more satisfied as perceptions of service quality and value increase, the satisfaction level of more entitled customers will be less affected by high levels of perceived service quality and value.

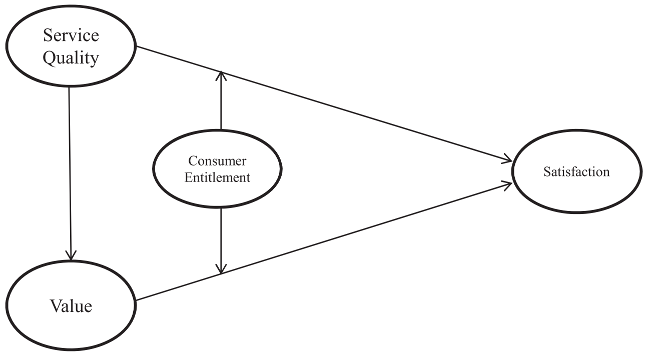

Figure 1. Conceptual model.

In their seminal piece on determinants of satisfaction, Oliver and DeSarbo (1988, p. 496) suggested that "It may be instructive to consider the possibility that some consumers are more expectations-influenced, some are more disconfirmation-influenced, and others use both as separate effects in the satisfaction response." This study takes this suggestion into account through examination of the level of entitlement of consumers and how this ultimately impacts satisfaction level. It has been suggested that satisfaction is more responsive to positive disconfirmation increases than to expectation level increases (Oliver, 1997). Furthermore, Oliver describes situations in which each of disconfirmation and expectations can dominate the resultant satisfaction realized by the consumer. When vdisconfirmation is relied upon, the consumer reacts to performance in a straightforward manner (e.g., negative performance, given favorable expectations, results in negative disconfirmation, and dissatisfaction). Additionally, Babin *et al.* (1994) found that involvement enhances the impact of both positive and negative disconfirmation. Our sample of season ticket holders, unquestionably a highly involved consumer group, would be expected, then, to rely primarily on disconfirmation when making satisfaction judgments. However, it is the contention of this study that our focal construct, consumer entitlement, would provide a caveat to this finding.

Oliver also related situations when expectations, rather than performance disconfirmation, dominate assessments of consumer satisfaction. He suggested that this happens in

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situations where judging the performance is either difficult or impractical, or more relevant to this study, in situations where the consumer is unwilling to measure performance. In addition, Oliver believed that individuals may be unwilling to assess performance for fear that it may reflect poorly on their previously made decisions. This reliance on expectations fits the profile of an individual high in consumer entitlement. Given their self-serving attribution style (Harvey and Martinko, 2009), highly entitled consumers are expected to behave consistently with assimilation theory (Hovland *et al*., 1957). Assimilation theory provides the groundwork for an expectations-oriented satisfaction response tendency and assumes that "individuals are reluctant to acknowledge discrepancies from previously held positions and therefore assimilate judgment toward their initial feelings" (Oliver and DeSarbo, 1988, p. 496). Because individuals higher in entitlement have been found to hold a self-serving bias, they would likely seek to control perceived outcomes favorably, which would require an adjustment (assimilation) of their satisfaction assessments to match expectations going into a service experience. This is particularly possible in the case of a large investment like a season ticket; the purchase reflects the self and if the self is held in high regard (as is so with highly entitled individuals), consistency would demand that the level of satisfaction follows in kind. This assimilation provides a framework for our prediction that consumers high in entitlement will be expected to rely on expectations for their satisfaction judgments and that their satisfaction level will, therefore, be less affected by the levels of perceived service and value received. Hence, the following set of hypotheses:

> *H_4:* Consumer entitlement will moderate the relationship between service quality and satisfaction with the service, such that the impact of consumer perceived service quality on satisfaction will be mitigated for highly entitled consumers. That is, the positive service quality–satisfaction relationship will be stronger for individuals low in consumer entitlement.

> *H_5:* Consumer entitlement will moderate the relationship between value and satisfaction with the service, such that the impact of consumer-perceived value on satisfaction will be mitigated for highly entitled consumers. That is, the positive value–satisfaction relationship will be stronger for individuals low in consumer entitlement.

METHOD

Sample

The data were collected in conjunction with the management of the National Hockey League franchise located in a non-traditional market. The organization sent a customer survey link to 750 season ticket holders. The use of season ticket holders for our sample is important for two reasons. First, season ticket holders are customers who are generally regarded as special, lending additional credence to the idea that they may be more entitled than other customers. Second, it allows investigation into the service quality/value–satisfaction relationships for a specific case of long-term customers, the dynamics of which are likely different than that of newly acquired customers (Falk *et al*., 2010).

After removing cases for missing items, the final sample size was 234. This represents a response rate of 31 per cent for the study. The sample was predominantly male (71%) and Caucasian (97%) with a mean age of 47 years (60% of the respondent's ages fell within the range of 40 to 60 years). The sample also was highly educated, with 75 per cent holding at least a 4-year college degree (32% held graduate degrees). Finally, the sample respondents represented high incomes, with 51 per cent reporting an income over $100,000.

Measures

The study constructs were all measured via reliable, established scales or subsets of scales previously used in the marketing literature, modified to fit the proper sample context. The scales were all multi-item, and responses, unless noted otherwise, were recorded via a 5-point Likert-type format with endpoints of strongly disagree (1) and strongly agree (7). *Consumer entitlement* was measured using the original nine-item scale developed by Boyd and Helms (2005), in addition to the four items that were subsequently added by Butori (2010) due to content validity concerns. After 10 items were deleted for insufficient loading, the resultant subscale (construct reliability = 0.81) consisted of three items from the original scale. Butori (2010) found the construct of consumer entitlement to consist of three factors related to distinction, high expectations of services quality, and high expectations in a service failure context. However, we found the subscale used in this study to be unidimensional. *Satisfaction* was measured via a five-item subscale of Oliver's (1997) consumption satisfaction scale. The scale's construct reliability was 0.95. *Service quality* was measured using the five perception-only items of *SERVQUAL* (Parasuraman *et al*., 1988), representing the reliability factor. This factor is consistently recognized as the most important determinant of service quality to consumers in the USA. The construct reliability exhibited by the scale was 0.93. Finally, *value* was captured via a six-item scale to measure the consumer's perception of how good the deal was for the price paid (Grewal *et al*., 1998). One item was deleted for insufficient loading, resulting in a subscale with a construct reliability of 0.90. Table 1 contains a list of the items used for the study.

RESULTS

Prior to testing our hypothesized model, a confirmatory factor analysis (CFA) was run for further assessment of the study measures. The CFA was run using maximum likelihood estimation via LISREL 8.8 software (Jöreskog and Sörbom, 2006), with a covariance matrix as input. Of the 18 indicators, representing the four study constructs, all items loaded significantly on their intended construct. The fit

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Table 1. Study measures used

Items	Completely standardized loading
Service quality (Parasuraman *et al*., 1988), CR = 0.93	
1. When the organization promises to do something by a certain time, it does so.	0.82
2. When you have a problem, the organization shows a sincere interest in solving it.	0.68
3. The organization performs the service right the first time.	0.88
4. The organization provides its services at the time it promises to do so.	0.93
5. The organization insists on error-free records.	0.61
Value (Grewal *et al*., 1998), CR = 0.90	
1. My ticket package appears to be a bargain.	0.78
2. The price is less than what I expected to pay.	0.69
3. The price is less than average market price.	0.53
4. This ticket package is a great deal.	0.87
5. At this price, I save a lot of money.	0.78
Consumer entitlement (Boyd and Helms, 2005), CR = 0.81	
1. In some real sense, I feel that a store's personnel should cater to my every whim.	0.71
2. In this modern age of technology, I should be able to ask a salesperson any question and have it answered instantly.	0.72
3. As a valuable customer, I have earned the right to deal exclusively with a store's most talented staff members.	0.74
Satisfaction (Oliver, 1997),CR = 0.95	
1. I am satisfied with my decision to be a season ticket holder.	0.84
2. My choice to become a season ticket holder was a wise one.	0.93
3. I think that I did the right thing when I chose to become a season ticket holder.	0.91
4. I am not happy that I became a season ticket holder (*R*).	0.55
5. I truly enjoy being a season ticket holder.	0.67

Note: Items are measured using a 5-point Likert-type response format with anchors ranging from 1 = strongly disagree to 5 = strongly agree. Unless otherwise noted (*R*), all items are worded in the positive direction. CR, construct reliability.

statistics further suggested that the measurement model provided an adequate fit to the data, with all values within the suggested ranges (Hu and Bentler, 1999) as follows: $\chi^2(df = 129,\ n = 234) = 228.51$ ($p < 0.001$), Comparative Fit Index (CFI) and Incremental Fit Index (IFI) at 0.98, Tucker Lewis Index (TLI) at 0.97, and Root Mean Square Error of Approximation (RMSEA) at 0.057. Validity of the measures was assessed following the recommendations of Fornell and Larcker (1981). Specifically, convergent validity was examined through a calculation of the average variance extracted (AVE) by each construct, relative to error. An AVE of at least 50 per cent provides evidence of convergent validity. Each study construct met this requirement (consumer entitlement = 0.59, satisfaction = 0.079, service quality = 0.72, and value = 0.65). Discriminant validity was also confirmed, such that the AVE for each construct was found to be greater than its shared variance with any other constructs. These results, correlation, descriptive statistics, and construct reliabilities can all be examined further in Table 2.

The hypothesized structural model was tested for path estimates and overall model fit. The model exhibited good overall fit as follows: $\chi^2(df = 160,\ n = 234) = 269.10$ ($p < 0.001$), CFI and TLI at 0.95, IFI at 0.96, and RMSEA at 0.054. A summary of these results can be found in Table 3.

Hypothesis 1, predicting that service quality would positively impact value, was supported with a significant path coefficient of 0.42. Likewise, Hypotheses 2 and 3, predicting service quality and value's effects on satisfaction, were also supported, with significant path coefficients of 0.14 and 0.53, respectively. Hypothesis 4, on the other hand, was not supported. Specifically, consumer entitlement was not found to moderate the relationship between service quality and satisfaction. Hypothesis 5, however, was supported by the data. The significantly negative path coefficient of the consumer entitlement–value interaction term (−0.21) indicates that consumer entitlement does act as a moderator of the value–satisfaction relationship. An examination of critical ratio differences confirmed that consumer entitlement was a significant moderator of the value–satisfaction relationship (z-score = −2.361, significant at 0.01 level).

To further confirm the moderating role of the value–satisfaction relationship, hierarchical regression analysis

Table 2. Means, standard deviations, correlations, reliabilities, and convergent/discriminant validity assessment of the measurement model

Variable	M	SD	AVE	1	2	3	4
1. Consumer entitlement	02.76	00.71	0.59	**0.81**	0.00	0.00	0.01
2. Satisfaction	04.57	00.54	0.79	−0.02	**0.95**	0.14	0.25
3. Service quality	03.73	00.67	0.72	0.04	0.37[a]	**0.93**	0.17
4. Value	03.25	00.65	0.65	0.09	0.50[a]	0.41[a]	**0.90**

Note: Listwise $n = 234$. Construct reliabilities are provided on the diagonal in bold. Shared variances are reported above the diagonal. Pearson correlations are below the diagonal.
M, mean; SD, standard deviation; AVE, average variance extracted.
[a]Correlation is significant at 0.01 level (two-tailed).

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Table 3. Structural model results and maximum likelihood estimates

Hypothesized path	Path coefficient	R^2	Support
H_1:. Service quality → value	0.42*	0.17	Supported
H_2:. Service quality → satisfaction	0.14*	0.41	Supported
H_3:. Value → satisfaction	0.53*		Supported
H_4:. Consumer entitlement* service quality → satisfaction	0.03		Not supported
H_5:. Consumer entitlement*value → satisfaction	−0.21*		Supported
Structural model results			
$\chi^2(df = 160, n = 234) = 269.10$, $p < 0.05$; CFI = 0.95; TLI = 0.95; IFI = 0.96; RMSEA = 0.054			

*$p < 0.05$ (two-tailed).

was conducted. All predictors were mean centered. In order to control for the possible effects of gender, age, education, and income on personal satisfaction, these variables were entered in the first step. The main effect term of value was entered in the second step. In the third step, the main effect term for consumer entitlement was entered. In the fourth and final step, the value–consumer entitlement interaction term was entered. A significant change in R-squared in the final step offers evidence of an interaction effect between predictor variables. Regression results can be examined in Table 4.

The interaction term explained incremental criterion variance ($\beta = -0.29$, $p < 0.05$, $\Delta AdjR^2 = 0.05$, $p < 0.05$) in satisfaction, supporting Hypothesis 5. The interaction between value and consumer entitlement was graphed (Figure 2), and the simple slopes were tested per Aiken and West (1991) using high and low levels of consumer entitlement (±1 standard deviation). The results provided additional support for the interaction effect as the impact of value was weaker when consumer entitlement was high and stronger at lower levels of consumer entitlement. Specifically, at low levels of entitlement, the effect of value, respectively, was stronger on satisfaction ($\beta = 0.73$, $p < 0.05$). At high levels of consumer entitlement, this effect dropped substantially ($\beta = 0.17$, $p > 0.05$).

Table 4. Results of hierarchical regression analysis – value

	Consumer satisfaction ($n = 234$)		
	β	R^2	ΔR^2
Step 1. Control variables			
Gender	0.004		
Age	0.005		
Education	0.000		
Income	−0.004	0.02	0.00
Step 2			
Value	0.457*		
		0.26	0.24*
Step 3			
Consumer entitlement	0.044		
		0.26	0.00
Step 4			
Value * consumer entitlement	−0.285*		
		0.31	0.05*

*$p < 0.05$ (two-tailed).

DISCUSSION

This study examined the moderating role of consumer entitlement on the relationships of service quality and perceived value with customer satisfaction. The tests of these moderated relationships were mixed in that only the relationship between value and satisfaction was moderated by consumer entitlement. Specifically, the impact of value on customer satisfaction was mitigated for customers high in entitlement. Vital to the finding is the implication that, for highly entitled customers, the importance of value to their ultimate satisfaction appears to be somewhat diminished. Although the interaction with consumer entitlement was found to be insignificant, the impact of consumer perceptions of service quality is also indirectly mitigated through its impact on perceived value. Given the evidence that entitlement has increased from 1996 to 2007 (Trzesniewski *et al*., 2008), this implication is somewhat alarming to what have been considered firmly established tenets of services marketing (i.e., the vital roles of service quality and value in the creation and maintenance of customer satisfaction). Additionally, these findings highlight the application of consumer entitlement to the satisfaction literature and, specifically, Oliver's expectancy disconfirmation paradigm of satisfaction. The findings of this research indicate that consumers low in entitlement behave as predicted by the original expectancy disconfirmation conceptualization, relying on a comparison of expectations to perceived performance to assess their level of satisfaction or dissatisfaction. On the other hand, entitled consumers tend to rely more

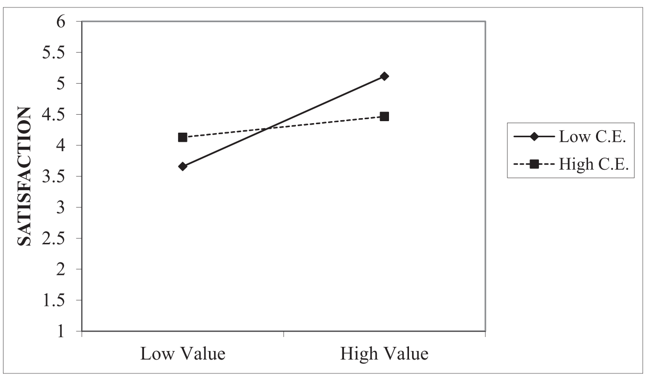

Figure 2. The moderating role of consumer entitlement on the value–satisfaction relationship.

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on their original expectations to assess their satisfaction level, independent of perceived performance.

Consistent with these contentions, highly entitled customers experienced higher levels of satisfaction at low levels of perceived value than did their less entitled peers. In addition to a reliance on expectations for satisfaction judgments, this may be due to a higher, perhaps irrationally high, level of self-confidence in decision-making ability held by highly entitled consumers. After all, psychologically entitled individuals hold positive views of themselves (Snow *et al*., 2001). An alternate, although related, possibility refers back to assimilation theory and perhaps an escalation of commitment, particularly so because the sample surveyed consisted of season ticket holders. Cialdini (2007, p. 58) discussed the role of commitment and consistency in decision-making in his work on influence. He wrote that "Once a stand had been taken, the need for consistency pressured these people to bring what they felt and believed into line with what they had already done. They simply convinced themselves that they had made the right choice and, no doubt, felt better about it." While Cialdini's work reflected human nature across the board, this phenomenon especially applies to the highly entitled consumer, whose self-serving bias will not allow for admitted failure. When making an investment of this magnitude, an artificially high self-opinion could lead customers with high consumer entitlement to report being more satisfied (because how could I have made a mistake in becoming a season ticket holder?) than service quality or perceived value would have otherwise warranted. "When directly confronted with failure, narcissists find ways of undoing it; they might even distort and restructure past events to soften the blow" (Morf and Rhodewalt, 2001, p. 185). In addition, it has been suggested that entitled individuals react negatively to criticism (Campbell *et al*., 2004) and view feedback that does not support their positive self-image as flawed (Harvey and Martinko, 2009).

Taken as a whole, these findings add credence to the assertion that currently essential service characteristics like service quality and value may become, to an increasingly entitled customer base, what Herzberg (1987) referred to as "hygiene factors." That is, the presence of high levels of quality and perceived value may no longer be enough to directly impact customer satisfaction. However, judging by the fact that both service quality and value were significantly related to satisfaction, their absence will still be sufficient to result in dissatisfaction. Of course, customers are not wearing signs that read descriptors such as "entitled" (or "hard to satisfy," "gullible," "cranky," etc.). On a micro level, like any other tendency, the service provider can only ascertain the entitlement level of any one customer based on a cumulative set of interactions. The overall trend, however, is that entitlement is on the rise among consumers, particularly among millennials who are an increasingly large segment of the population and will continue to grow as a potential target market for a variety of services. If this is indeed the future, marketers would be wise to proactively determine strategies for maintaining relationships with and keeping the attention and interest of entitled customers. This could be accomplished through more one-to-one marketing (i.e., customization to communicate how special the customer is to the firm), increased customer involvement, and co-creation. Given the entitled customers' inflated opinions of themselves, it would seem appropriate in increase their role in the service delivery. Additional participation could result in an increased level of buy-in on the part of the consumer. While the reason is not always specified, multiple studies have found that active participation in a service context can impact outcomes such as satisfaction (e.g., Kelley *et al*., 1992; Dellande *et al*., 2004; Auh *et al*., 2007). Consumer entitlement could certainly be one the explanatory factors in this phenomenon. Because not all customers of a given service would be high in entitlement, it makes sense to keep level of participation optional in practice, so that only those who would like to participate more in service provision need to do so. Although outside the scope of this study, it may be that level of entitlement has an inverted u-shape relationship with desire to participate in service provision. That is, those who are moderately entitled wish to co-create services they experience, while those that are extremely entitled feel that services should be wholly provided for them.

Despite being the central focus of this paper, it is interesting to note that, overall, the surveyed season ticket holder sample was not found to be extreme in its level of entitlement. The sample mean for entitlement was 2.76 out of 5, just over the midpoint. While consumer entitlement was not significantly correlated with age, the sample was relatively old with a mean age of 47 years, and 60 per cent of the respondent's ages fell within the range of 40 to 60 years. This finding somewhat corresponds with the suspicion of Campbell *et al*. (2004) that entitlement may, as narcissism has been reported to (Foster *et al*., 2003), "diminish as individuals get older and are repeatedly exposed to the unfortunate realization that life does not give you what you want all the time" (p. 42). To this end, perhaps there is a glimmer of hope.

Strengths, limitations, and suggestions for future research

There are strengths to this research effort that warrant mention here. One of the key strengths of this research is the application and extension of Oliver's disconfirmation theory of satisfaction. Specifically, this study examined the understudied and increasingly important construct of consumer entitlement and its role as a moderator of satisfaction. In so doing, the authors found that entitled consumers tend to rely more heavily on expectations for satisfaction judgments, while less entitled consumers are more focused on expectation disconfirmation. This application of entitlement provides a theoretical extension to Oliver's rich stream of satisfaction research. Finally, the sample is a strength, as season ticket holders to a professional sports franchise provide an exceedingly appropriate context to the study of consumer entitlement.

As with all research, there are limitations to this study. First off, the generalizability of the results is necessarily limited to the sample used. Specifically, a sample of season

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ticket holders for the National Hockey League franchise, while strong in its appropriateness to this study, is relatively specific in nature. The findings reported here may or may not transfer to other samples. Because of this, the authors recommend that similar studies exploring consumer entitlement's role be conducted on various consumer groups and settings, perhaps with a younger sample. Similarly, the sample was also quite homogenous, demographically speaking. Similar studies exploring consumer entitlement among samples with distinct cultures would be interesting. Additionally, an examination of entitlement among buyers in business-to-business markets may yield different results. The study was also limited by the choice of variables included for study. While the importance of customer satisfaction, service quality, and value is generally accepted, there are many additional variables that could have been included as antecedents in the study (e.g., trust in the service provider and servicescape assessments). Likewise, additional outcomes, and the impact of consumer entitlement on them, could have been included (e.g., loyalty, positive/negative word of mouth, and willingness to pay price premiums). The self-report nature of the survey also could be seen as a limitation. Because entitled is a descriptor most individuals would likely rather not be labeled, there is a chance that some underestimated their responses to the consumer entitlement items (which could also help to explain the lower-than-expected mean of consumer entitlement, incidentally). Finally, the authors did not collect consumer expectations of satisfaction; the addition of this data could add richness to the study results.

Given the relative dearth of its application to the marketing literature to this point, there are endless opportunities for future studies on the consumer entitlement construct. Particularly relevant to marketing practitioners would be additional inquiry into how the highly entitled consumer reacts to various elements of the marketing mix. For instance, are some types of promotion more effective for the highly entitled consumer than others? Consumers that are high in entitlement may prefer to shop online, where only their vast knowledge of the product category for which they are shopping is required or desired. Further, more studies into how consumer entitlement is manifested are warranted. Entitled individuals have been characterized as reacting in an aggressive and hostile manner when they do not obtain what they expect (Fisk and Neville, 2011). This assertion lends itself to future research efforts into complaining behavior among the highly entitled consumer and, by extension, recovery strategies for the same. Finally, again, examination of entitlement in different contexts with various consumer groups could shed more light on its role in consumer satisfaction and other desirable and undesirable outcomes for marketers. These are but a few examples of a myriad of potential avenues to explore on consumer entitlement. Clearly, much work is still needed in this area.

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Facets of country image and brand equity: Revisiting the role of product categories in country-of-origin effect research

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ABSTRACT

The country-of-origin effect is a topic central to the field of international marketing. Country of origin has been found to exert a particularly potent effect on consumer evaluation in situations where there is a strong link between a country and a particular product category. The present study provides further insight into how this particular effect can be understood. Drawing on a novel conceptualization of how country image and product categories interact, this study tested the relative evaluative relevance of product category with respect to estimates of brand equity across a variety of product categories. The findings suggest that facets of a country's image that are more closely related to the evaluation situation exert a greater influence on the evaluation of brands. This result encourages scholars as well as practitioners to re-evaluate which situations might cause the country of origin effect to hold managerial relevance and paves the way for new paths toward a more comprehensive understanding of the effect. Copyright © 2015 John Wiley & Sons, Ltd.

INTRODUCTION

The country-of-origin effect (COE) describes the situation in which a consumer's judgment is altered owing to an association between a product, service, or brand and a place. This concept has been a central issue in the international marketing research literature for some 50 years (Pharr, 2005; Usunier, 2006; Magnusson *et al.*, 2011). Indeed, it has received a rather impressive amount of attention, sometimes even being referred to as a staple of international marketing research (Tan and Farley, 1987; Usunier, 2006). Yet, this attention has also been coupled with a fair amount of criticism that has pointed to a great variety of issues—from the lack of theoretical development in the field (Bloemer *et al.*, 2009) to methodological issues (Bilkey and Nes, 1982; Samiee, 2010)—and questioned the practical relevance of the effect (Samiee, 1994; Usunier, 2006, 2011).

One key to understanding how an association to a place can affect consumer judgment is the influence of categories (Josiassen *et al.*, 2013). This influence can be exemplified by examining the case of Colombian coffee. For consumers in Europe and North America, the image of Colombia as a country may evoke associations with violence, drug cartels, sunny beaches, and the sprawling cityscape of Bogota—imagery that in many cases may hinder the attachment of positive characteristics to products associated with the country. In the product category of coffee, however, the association with Colombia can have quite a potent positive effect on consumer evaluation (Kotler and Gertner, 2002), suggesting the strong potential moderating effect derived from categories.

Numerous studies have investigated the effect of categories and their role in the context of origin effect (Niffenegger *et al.*, 1980; Roth and Romeo, 1992; Diamantopoulos *et al.*, 2011; Josiassen *et al.*, 2013). It has been suggested that the COE is stronger for categories that are relatively closely associated with a particular place (O'Shaughnessy and O'Shaughnessy, 2000) as exemplified in the case of the country Colombia and the product category coffee. In a recent study, Josiassen *et al.* (2013) developed and tested a framework that divided the basis of the association to a place into three facets: general place image, product image, and category image. All three facets exert an effect on a consumer's summative judgment of product quality. In doing so, this model can explain variations in the effect of the association with a place on judgment with greater accuracy than models that view categories as a moderator. What is particularly interesting about the Josiassen *et al.* framework is that the relative significance of these different facets can be compared.

The present paper extends the work of Josiassen *et al.* (2013) by testing the premise of their framework on a number of brands as opposed to making general judgments about product quality and purchase intentions. While Josiassen *et al.* focused on consumers' product evaluations, the present paper is concerned with consumers' attitude towards brands. In recent decades, several authors have emphasized the centrality of brand in the context of COE, suggesting that the "origin" in country of origin should be understood as perceived brand origin (Pharr, 2005; Thakor and Lavack, 2003). In effect, consumers appear to "place" products and services based on the perceived origin of the brand. Accordingly, brand origin can be understood simply as the place a consumer associates with a brand (Magnusson *et al.*, 2011). Considering the immense commercial relevance of brands

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for marketing success (Keller, 1993; Ambler, 2003), the issue of how various facets of place–category interrelations influence brand equity (BE) has emerged as an interesting avenue for advancing the knowledge of origin effects in general. Furthermore, it can be argued that brand evaluation constitutes a type of evaluation that has greater applied relevance in a marketing context than hypothetical product evaluations, as it provides a closer proxy for consumer behavior.

It seems likely that consumers' perceptions of brand quality are more strongly influenced by their opinions about specific product categories from the brand's country of origin than by their more general perceptions of products from the country or their general view of the country. In this article, this idea is tested by means of an experimental study. In the following section, a theoretical model and a set of hypotheses are developed and presented. The method is then described, including a description of the participants and the specific test procedures. The results are presented thereafter, lending support for this idea and the key hypotheses. These findings have a number of implications for theory and practice, some of which are explored in the last section.

CONCEPTUAL FRAMEWORK AND HYPOTHESES

On the practical relevance of the origin effect

The question of when origin effects constitute an important aspect in a marketing context remains a difficult one to answer, despite researchers having investigated it for some time. On a general level, it has been observed that the origin effect (i.e., the way in which the image of a place manifests itself in the context of consumer evaluation) greatly depends upon the perceived level of general development of the country from which a product, service, or brand originates (Cordell, 1992; Samiee, 1994; Verlegh and Steenkamp, 1999; Zeugner-Roth and Diamantopoulos, 2009; Chu *et al.*, 2010). At first glance, this principle seems valid, as consumers might expect higher quality products and services from a country they perceive to be more economically and technologically developed. However, this relationship between a country's development and the perceived quality of its exports is grounded in very large differences in development, such as those between "developed" and "developing" countries. Although this connection is useful for marketers on a practical level, this knowledge only provides a very general idea of when and how an origin effect can determine marketplace success. Moreover, the dichotomy of "developed" and "developing" has become much more tenuous in recent years. Indeed, this dichotomy could be replaced with the more apt distinction between developed, transitional, and pre-transitional economies. In addition, other changes in international trade patterns linked to globalization and the evolution of value-chain configurations have made it difficult for the core concepts of origin effect research to remain relevant.

In the past, one such conceptual problem that caused some difficulty was the poor accuracy of consumers' origin recognition in terms of brands (Samiee *et al.*, 2005) and products (Balabanis and Diamantopoulos, 2008). If consumers are unable to correctly identify the country of origin of brands (Samiee *et al.*, 2005) and, thus, do not consider it in a typical purchase situation (Balabanis and Diamantopoulos, 2008), one may question the relevance of origin effect. For non-branded products, the origin effect may indeed have lost its relevance (Balabanis and Diamantopoulos, 2008). However, the increasing saturation of the commercial world by brands and the logic of branding has emerged as a dominant theme in marketing discourse and practice. Changing value-chain configurations, such as the increasing specialization and division of activities in production chains, has led some scholars to suggest that the focus of origin effect research should shift away from products and toward brands (Thakor and Lavack, 2003; Pharr, 2005; Josiassen and Harzing, 2008; Usunier, 2011). Furthermore, the generally poor level of accuracy in brand origin recognition does not necessarily mean that the origin effect is irrelevant. For instance, Magnusson *et al.* (2011) found that consumers were influenced by a brand's *perceived* association with a country, even if that association was not based on the actual value-chain configuration of the brand's products or services. In effect, origin effect can have a great influence on consumer evaluations, even if the brand's origin is incorrectly identified.

Contingencies of the origin effect

The conceptual shift toward a focus on brand origin and the acknowledgment that origin is determined by consumers' perceptions have enabled origin effect to retain its relevance. Yet the greater question remains: Under what conditions can an origin effect serve as a critical determinant of consumer judgment, attitude formation, and decision making?

In many ways, the observations made by scholars when the concept of origin effect was in its infancy still hold. A stream of research on origin effect has focused on how the effect is moderated by a number of conditions that affect how a country's image can influence an evaluation situation. For example, researchers have found that the characteristics of the consumers making the evaluation (Ahmed and d'Astous, 2008), such as their materialism or ethnocentrism, can influence how the effect manifests itself (Sharma, 2011). Certainly, the characteristics of one's potential customers are of crucial relevance to any wider marketing intelligence analysis, but other influencing factors may apply across consumer groups. One such factor that has been studied extensively, but is still not fully understood, is the influence of the category of the product, service, or brand being evaluated (Wang and Lamb, 1983; Obermiller and Spangenberg, 1989; Roth and Romeo, 1992; Peterson and Jolibert, 1995; Pappu *et al.*, 2007; Usunier and Cestre, 2007; Thanasuta *et al.*, 2009; Diamantopoulos *et al.*, 2011; Usunier, 2011).

Many studies have been centered on this issue, typically finding that product category does exert a great influence on origin effect (cf. Roth and Romeo, 1992; Thanasuta *et al.*, 2009). There have been numerous suggestions as to how to pinpoint which characteristics of a country's image prompt divergent outcomes in the association between product and country in terms of the product's category. Explanatory concepts have included "product–country fit" (Roth and

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Romeo, 1992), "product ethnicity" (Usunier and Cestre, 2007), "product category image" (Diamantopoulos *et al.*, 2011), and "specific product–country image" (Hsieh *et al.*, 2004). All of these conceptualizations imply that the country's image includes some facet that is specific to a particular product category. Numerous studies have dealt with the issue of product categories as a strong influencing factor in the context of COE, but none have tested their influence across a large number of categories. Insch and McBride (2004) asserted that it may be impossible to arrive at a general understanding of the influence of these factors, as this influence may vary across different contexts. Testing the influence of categories across various categories would be a step toward determining the extent to which categories matter. However, in order to achieve this outcome, we must first understand how the influence of categories can be understood in relation to country image. Country image has been discussed as an antecedent of the COE at least since Akira Nagashima (1970), who defined the concept of country image as the sum of impressions and associations held about a country. This definition bears a great resemblance to how Kevin Keller (1993) defined customer-based BE. What the two definitions share is the emphasis upon the perceptual nature of these images, which can lead to a great variation in what consumers actually associate with a given image. Since Nagashima (1970) defined country image as it applies to the COE, there has been some development in how the "source" image of the origin effect is typically conceptualized. A distinction is now made between what consumers generally think of a country, that is, basic country image (BCI), and what consumers generally think of the products from a given country, that is, product–country image (PCI; Zeugner-Roth and Diamantopolous, 2009). The former of these constructs can be aptly defined as "the total of all descriptive, inferential and informational beliefs one has about a particular country" (Martin and Eroglu, 1993: 193) and the latter as "consumers' perceptions about the attributes of products made in a certain country; emotions toward the country and resulting perceptions about the social desirability of owning products made in the country" (Nebenzahl *et al.*, 2003: 388). It is crucial to note that these two constructs are typically not used in combination in the extant literature but rather seen as different ways of conceptualizing the underlying image construct from which a potential origin effect is derived.

The distinction between the more general BCI and the more product evaluation-specific PCI is an interesting problem in itself. But the more pressing issue addressed by the present work is the conditions that underlie and precede the origin effect. As some scholars have suggested (O'Shaughnessy and O'Shaughnessy, 2000; van Ittersum *et al.*, 2003; Diamantopoulos *et al.*, 2011), a country association might prove to be most relevant when a consumer makes a perceptual connection between a country and a product category. In the present paper, this factor is approached as a characteristic of a country's image, the basic assumption being that attitudes toward a given country range from "good" to "bad" (cf. Ajzen, 2001)—a view that is widely accepted. More specifically, this suggests that it is possible for consumers to hold divergent attitudes toward a country's BCI, its PCI, and the evaluative relevance of a country with respect to each specific product category (from here on referred to as category–country image (CCI)). In the present study, these three levels of country image were tested for their relative evaluative relevance with regard to BE (H1a, H2a, and H3) and for their interrelation (H1b, H1c, and H2b). For example, one could argue that France as a country may evoke an attitude based on reference to the country as a whole, products from the country in general, and products in a specific category. In this study, these three levels were represented by the constructs BCI, PCI, and CCI in accordance with the model presented by Josiassen *et al.* (2013).

Previous studies have shown that general attitudes toward a particular country tend to influence the evaluation of products associated with that country, regardless of the level of consumer knowledge and experience of the products themselves (Laroche *et al.*, 2005). This suggests that BCI affects BE, regardless of the influence of the PCI and CCI constructs. Meanwhile, most origin effect research has identified PCI as the source construct for origin effect (Zeugner-Roth and Diamantopoulos, 2009). Both of these constructs, however, operate on a general level and fail to fully account for the influence of product categories. In practice, there are numerous situations in which consumers could evaluate the BCI and PCI as poor but nevertheless positively evaluate products from a specific product category from the same country of origin. Examples of this principle can be found with Colombian coffee (Kotler and Gertner, 2002) and Russian vodka (Nebenzahl *et al.*, 1997). There are also cases in which an association to a country which transfer positive perceptions to a brand based on BCI and PCI can be amplified to an exceptionally positive effect on the evaluation of particular product categories associated with that brand, as in the case of German automobiles (Thanasuta *et al.*, 2009) or French cosmetics (Leclerc *et al.*, 1994).

The three constructs can be thought of as different levels of place image that result from various interrelations between place and brand, which are simultaneously activated in an evaluation situation (Hsieh *et al.*, 2004; Josiassen *et al.*, 2013). These levels represent the fact that, when combined, two symbols can emerge or manifest as something that deviates dramatically from the sum of its parts. This new meaning that emerges from the combination of symbols is sometimes referred to as the formation of iconicity (Deacon, 1997: 60). In the present study, the first level is represented by the BCI construct alone; it captures consumers' general perceptions of a country, without considering any particular context (e.g., product). The second level is represented by the PCI construct through which consumers evaluate countries based on their perceived capacity to produce quality products. In other words, evaluation of stimuli can be contextual; that is, a country's meaning may shift if it is evaluated in the context of product quality as opposed to in a more general sense. Sometimes, a combination of different stimuli may lead to a completely different evaluation than the same stimuli separately (Deacon, 1997: 71). It may even completely alter the meaning of the different stimuli. The concept of iconicity refers to such an effect, that is, altering

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the meaning a particular country carries as a result of its interrelation with a particular product category (cf. Keller, 1993). Numerous authors have observed such a phenomenon in highly diverse contexts. For instance, Martínez and Alvarez (2010) noted that even though Turkey evoked negative responses from respondents when evaluated in general, it was still highly regarded as a potential tourist destination. Here, "Turkey" in itself was negative but became positive when thought of as a "destination."

The third level of image is represented by the CCI. The same principle applies as for the second level (PCI) in that the country image should be thought of as made relevant in a specific context, but the image is here composed of a combination of a country image and a specific product category rather than products in general. In essence, this level captures the effect on evaluation evoked by, for instance, France combined with automobiles or fashion apparel. Such combinations of countries and categories potentially affect attitude formation in a variety of ways. The underlying logic of this argument is that the combination of a country and a product category activates a set of associations in the consumer's mind that potentially diverges from the associations he or she would make with respect to the country alone.

Theoretical model and hypotheses

The first premise of the present study is the postulation that the three levels of place image, defined earlier as different kinds of interrelations between country and product, function as facets of the relationship between a country and a brand. While Josiassen *et al.* (2013) used the term "origin image" to refer to the construct at source of the COE, this paper exclusively views place at the country level. Therefore, the different levels of place image will be referred to as levels of *country* image. The second step is accounting for how these different levels of country image influence BE, as well as each other. Figure 1 displays a simplified theoretical model outlining the relationships between the latent constructs involved. Here, the constructs are assumed to be interrelated, exerting a simultaneous influence on BE, with the more general levels of country image also exerting influence upon the more specific levels.

Based on the theoretical model, a set of hypotheses was formulated. Hypothesis 1 outlines the relationship between the first, and most general, level (BCI) and the other

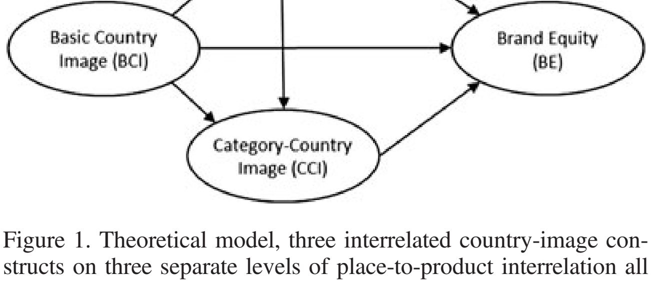

Figure 1. Theoretical model, three interrelated country-image constructs on three separate levels of place-to-product interrelation all simultaneously exerting predictive influence on the exogenous variable brand equity.

variables. Based on Laroche *et al.* (2005), this variable is assumed to influence BE via a general affective attitude toward the country, which is transferred to the brands associated with the country (H1a). This variable is also assumed to influence the other levels of interrelation in the model (H1b and H1c).

H1a: The general, or basic, country image (BCI) influences the BE of brands associated with the country.

H1b: Basic country image influences PCI.

H1c: Basic country image influences CCI.

In line with the bulk of the literature on origin effect (cf. Bilkey and Nes, 1982; Nebenzahl and Jaffe, 1996; Baldauf *et al.*, 2009; Zeugner-Roth and Diamantopoulos, 2009), the PCI variable is hypothesized here to influence BE (H2a). This variable is also assumed to affect the CCI variable as the closest superior image level (H2b).

H2a: Product–country image influences the BE of brands associated with the country.

H2b: Product–country image influences CCI.

The final and most specific level is represented by the CCI variable, which is hypothesized to influence the dependent variable BE (H3) in accordance with findings reported by Roth and Romeo (1992) and Diamantopoulos *et al.* (2011).

H3: Category–country image influences the BE of brands associated with the country.

In addition to addressing the central issue of how much evaluative relevance each of these levels holds in the context of attitude formation toward a brand associated with a country, assessing the validity of these hypothesized relationships would answer the following question: Are these three image facets interrelated and, if so, to what degree? The following chapter outlines the strategy and procedure used to empirically investigate the aforementioned hypotheses.

METHOD

Test design

To test the postulated hypotheses, an experiment was conducted in which all participants assessed the same number of country–brand pairs using a computerized questionnaire. The countries were assessed with respect to BCI, PCI, and CCI, and the brands were assessed with respect to BE and familiarity, which served as an exclusion criterion. The selection of the country–brand pairs used in the experiment was based on the results of three preliminary tests, as described subsequently.

The first test used an open-ended interview format to ask 10 university students to provide examples of brands that they perceived to have strong associations with a country, as well as brands that they perceived to lack such an association. The students were also asked to give examples of countries they perceived to have a strong or weak image and to provide reasons for their judgments. The students

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were also prompted to give examples of countries they perceived as evoking positive or negative connotations in relation to a particular category of products. The answers were used to derive a large sample of country–brand pairs. The sample was thus generated without direct influence from the researchers in terms of which countries and brands were selected and how they were thought to perform across the relevant variables. From this large sample, a subsample was selected that had a great degree of variation in terms of BCI, PCI, CCI, and BE, ranging from negative to positive.

This subsample of 12 different countries and 23 different brands was used for a second preliminary test in which a paper questionnaire was distributed to 60 university students. This test was designed to give an indication of how the countries might perform at the different levels of country image.

Based on the results of the second pre-test, a new set was selected in order to achieve a satisfactory degree of variance in each examined variable, that is, that no one level of country image would be too similar across the stimuli. This new set consisted of seven countries that had displayed varying levels of BCI, PCI, and CCI for the various categories of products included in the pre-test. Between four and six brands from each of the seven countries were selected. This selection of country–brand pairs was subjected to a third preliminary test, using the web-based customizable survey tool that was to be used in the main experiment. Twenty-three respondents participated in this third test, which demonstrated that the web-based tool functioned satisfactorily, was easy to comprehend, and did not contain questions that respondents found to be ambiguous. The three preliminary tests indicated that the measurement tool functioned in a satisfactory manner and that the countries selected as stimuli would have enough variability in BCI, PCI, and CCI to yield interesting results.

Questionnaire

Only minor changes were made to the questionnaire following the third pre-test. Table 1 features the final list of 38 country–brand pairs used in the main experiment. Because most of the respondents were Swedish, the test did not include any Swedish brands. This choice was made to avoid introducing respondents' biases toward products from their own country, which is a well-documented risk in research on origin effect (cf. Batra *et al.*, 2000; Balabanis and Diamantopoulos, 2004; Verlegh, 2007).

As origin effect can also negatively influence an individual's attitude toward products or brands (Chu *et al.*, 2010; Dakin and Carter, 2010), a bipolar Likert-type evaluation scale ranging from negative to positive was employed. The response alternatives were the same for all items. Respondents used a Likert-type scale to indicate a score from 1 to 7, ranging from *completely disagree* (1) to *completely agree* (7), with a neutral middle point (4); the exact wording of the scales can be viewed in Appendix A. In the test, all 38 country–brand pairs were assessed with three items measuring BCI, three items measuring PCI, three items measuring CCI, and three items measuring BE. The reason for using three items per construct was to increase the reliability of the questionnaire (Rigdon, 2012) without making the survey too time consuming to fill out. In addition to these three item measures, the scale featured a familiarity variable. This variable was used as an exclusion criterion so that respondents could not rate brands with which they were not familiar. Any brand rated "1" on the familiarity item was automatically excluded from the rest of the questionnaire. In total, the questionnaire contained 401 items.

Participants

Respondents were recruited via advertising on notice boards in public transportation hubs, university campuses, and other public venues in the greater Stockholm region. The advertisement was vague enough to not give the test away but mentioned that the test would be about brands and that the participants would be reimbursed. A total of 100 respondents were recruited using this procedure (29 men and 71 women with a mean age of 26 years). Fifty two of the respondents were Swedish; the rest of the respondent population featured a wide variety of nationalities.

Procedure

The respondents were tested individually in a room with a computer running the web-based questionnaire. Before starting, the respondents were provided with standardized instruction on how to use the computer interface to fill out the questionnaire. For all respondents, the order of blocks of items was the same. They were first tested on their familiarity with the brands included in the study. The BE of all brands was then assessed, followed by the BCI and PCI for all the countries, and the CCI for all the product category and country pairs. The rationale for this order was to obtain the equity rating before the origin was made explicit, as the simultaneous presentation of brands and countries has been identified as a potential source of bias in origin effect studies (Samiee, 2010).

Within each block of items, the order in which the countries or brands appeared was randomized. Each BE item

Table 1. List of stimuli, 38 country–brand pairs, included in the main test series

Country	Brand 1	Brand 2	Brand 3	Brand 4	Brand 5	Brand 6
Finland	Finlandia	Finnair	Lapin Kulta	Marimekko	Nokia	—
France	Chanel	Danone	Dior	Kenzo	Moët and Chandon	Peugeot
Germany	Adidas	Audi	Braun	Lufthansa	Löwenbräu	Volkswagen
Japan	Asics	Canon	Honda	Sony	Toyota	—
Italy	Barilla	Diesel	Fiat	Kappa	Nutella	Versace
Russia	Aeroflot	Lada	Smirnoff	Stolichnaya	—	—
USA	Budweiser	Chrysler	Ford	Kellogg's	Levi's	Nike

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was presented together with the brand's official logo, and each country item was presented along with the country's national flag. The test took approximately 45 minutes to complete, including a short break once half of the questionnaire had been answered. During the break, respondents left the test room and were asked a series of questions unrelated to the test. This served the purpose of distracting the respondents so that they would be less likely to remember their ratings of any individual brands by the time they started rating the countries.

Directly following the main test, the respondents were subjected to a debriefing interview of approximately 20 minutes in order to ensure that they had understood the questions and the rating procedure correctly. All of the respondents reported having understood the test in the manner in which it was intended. These interviews also gave the respondents an opportunity to offer their views on various concepts related to origin effects, for example, how they would define origin in a geographically distributed value chain or which other nations apart from those included in the test had a particularly strong CCI in relation to specific product categories.

RESULTS

The data were subjected to structural equation modeling, partial least squares approach (PLS-SEM; Hair *et al.*, 2012), using the software package "Smart PLS" (Ringle *et al.*, 2005). PLS-SEM has several advantages over the more traditional covariance-based SEM approaches (CB-SEM), namely, (i) not having the same distributional requirements as CB-SEM (Chin, 1998), (ii) requiring only a relatively small sample (Barclay *et al.*, 1995; Hair *et al.*, 2011), and (iii) being more robust in the face of potential interdependencies between observations (Wold, 1980; Lohmöller, 1989; Chin and Neusted, 1999; Urbach and Ahlemann, 2010).

The fits of the tested models were evaluated using several metrics recommended by Hair *et al.* (2012). The measurement model (Table 2) was found to be robust, as all items were found to have the highest loading on the variable they were meant to represent (Chin, 1998; Grégoire and Fisher, 2006), with no item loading in excess of 0.507 toward a variable other than its target variable. All variables were also effectively represented, as the lowest loading between any item and its target variable was 0.814, which is well above the recommended cutoff value of 0.7 (Hulland, 1999).

The characteristics of the inner model, displayed in Table 3, include the composite reliability, the average variance extracted, and the correlation between construct scores. The composite reliability, or the internal consistency reliability, of the model was found to be good, with all variables loading in excess of 0.890—higher than the recommended minimum of 0.7 (Bagozzi and Yi, 1988). The squared correlation between constructs did not exceed the average variance extracted in any of the cases, indicating that the model meets the Fornell–Larcker criterion for discriminant validity among latent variables (Fornell and Larcker, 1981; Hair *et al.*, 2012).

Altogether, the quality control suggested that the structural model had high quality in terms of its discriminant validity, internal consistency reliability, and indicator to latent construct representation. The full structural model is illustrated in Figure 2 and summarized in Table 4.

The model seen in Figure 2 and described in Table 4 illustrates the relationships between the three variables representing the three different levels of place–product interrelations—BCI, PCI, and CCI—and the effect they exert upon the endogenous construct BE. The degree of explained variance (R^2) suggests that the model explains about a quarter of the variance in BE between all of the constructs. In order to gain a more detailed understanding of the model, the effect sizes (f^2) and predictive relevance (q^2) of the exogenous constructs were also calculated.

Taken together, these values suggested that the influence exerted by the most general level of place–product interrelation, BCI, on BE was irrelevant in terms of its effect size and predictive relevance, even though its path coefficient attained statistical significance. The middle level, PCI, did have a small effect according to the established criteria (Cohen, 1988). Finally, the most specific level of place–product interrelation, CCI, had a medium effect (Cohen, 1988) on BE. The cumulative effect of all facets of country image included in the study (BCI, PCI, and CCI) was close to what earlier meta-analysis found to be typical in the context of origin effect research (Peterson and Jolibert, 1995).

In terms of the interrelations between the different levels of image, it was postulated that the more general levels would have an effect on the more specific ones. This was shown to

Table 2. Outer model factor loadings and cross-loadings for latent constructs

Item	BE	BCI	PCI	CCI
i1	0.909	0.230	0.284	0.431
i2	0.852	0.136	0.262	0.400
i3	0.912	0.246	0.310	0.404
i4	0.195	0.865	0.470	0.273
i5	0.198	0.847	0.463	0.161
i6	0.199	0.852	0.454	0.202
i7	0.287	0.571	0.889	0.324
i8	0.274	0.456	0.890	0.286
i9	0.273	0.348	0.814	0.289
i10	0.491	0.340	0.415	0.900
i11	0.368	0.143	0.244	0.914
i12	0.354	0.134	0.227	0.895

Note: BE, brand equity; BCI, basic country image; PCI, product–country image; CCI, category–country image.

Table 3. Latent variable reliability: AVE, CR, Cronbach's α, and correlations between latent constructs BE, BCI, PCI, and CCI

	AVE	CR	Cronbach's α	BE	BCI	PCI	CCI
BE	0.794	0.920	0.870	1			
BCI	0.730	0.890	0.816	0.231	1		
PCI	0.749	0.899	0.833	0.321	0.541	1	
CCI	0.816	0.930	0.891	0.462	0.250	0.347	1

Note: AVE, average variance extracted; CR, composite reliability; BE, brand equity; BCI, basic country image; PCI, product–country image; CCI, category–country image.

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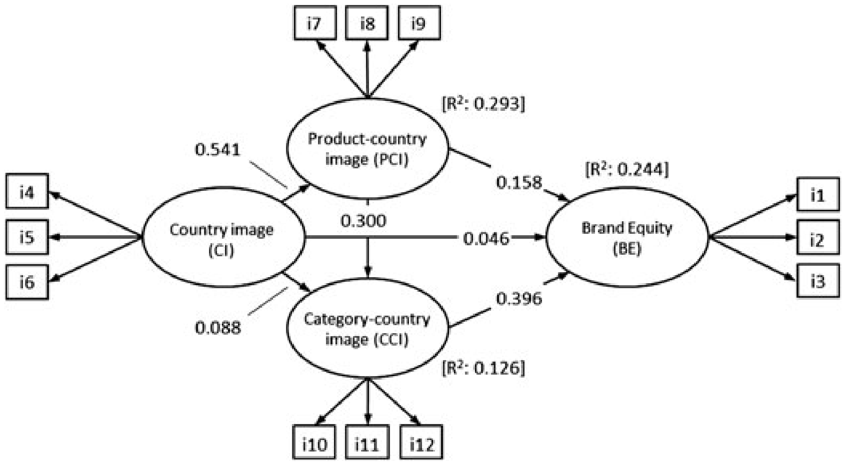

Figure 2. Partial least squares structural equation model, outlining the structural relationship between basic country image (BCI), product–country image (PCI), category–country image (CCI), and their exerted influence on brand equity (BE).

Table 4. Model summary, degree of variation explained, path coefficients, effect size, and predictive relevance exerted by all endogenous variables across all latent constructs

	R^2 full model	Path coefficients				Effect size (f^2)				Predictive relevance (q^2)
		BE	BCI	PCI	CCI	BE	BCI	PCI	CCI	BE
BE	0.244	—				—				—
BCI	—	0.046**	—			0.003	—			0.001
PCI	0.293	0.158**	0.541**	—		0.021	0.414	—		0.015
CCI	0.126	0.396**	0.088**	0.300**	—	0.180	0.008	0.070	—	0.134

Note: BE, brand equity; BCI, basic country image; PCI, product–country image; CCI, category–country image.
**Significant at the 0.01 level.

be partially correct; BCI did exert a considerable effect on PCI. However, the effect on the strongest predictor of BE—CCI—was inconsequential in the case of BCI and quite small (Cohen, 1988) in the case of PCI. Overall, these results suggest that the constructs of BCI and PCI are indeed related, whereas CCI constitutes an independent construct.

As for the hypotheses, the results lent little support to H1a, as the effect of BCI on BE was negligible. BCI did, however, have a considerable effect on PCI, lending support to H1b. For CCI, however, the effect of BCI was negligible and therefore inconsistent with H1c. PCI, which was to a large degree predicted by BCI, had a small but significant effect on BE, indicating support for H2a. It also had a medium-sized effect on CCI, supporting H2b. Finally, CCI had a medium-sized effect (Cohen, 1988) on BE, emerging as the strongest predictor of the dependent variable and supporting H3.

DISCUSSION AND CONCLUSIONS

Theoretical contributions

The results of the present study suggest that the origin effect, here defined as a perceived association between a brand and a place, is to a great extent contingent on the existence of a perceptual connection between the place and the specific product category the brand represents. In addition, the origin effect also appears to be independent of a more general attitude toward the country or even products from that country. The structural equation modeling analysis used to compare the predictive relevance of the BCI, PCI, and CCI, thus, supports the Josiassen *et al.* (2013) assertion that those place image facets that more directly apply to the evaluation situation exert a greater influence on a consumer's evaluation. The results of this study also extend the Josiassen *et al.* (2013) work by demonstrating that this principle applies when real brands, which are recognized by and available to consumers, are being evaluated. The findings also lend empirical support to O'Shaughnessy and O'Shaughnessy (2000), who suggested that the origin effect is primarily of practical relevance in marketing in cases in which a place is associated with a specific product category. This assertion is supported in this study by the relatively strong evaluative relevance of CCI for BE, when compared with BCI and PCI. The findings challenge Insch and McBride's (2004) assertion that COE may only be understandable on a case-by-case basis owing to the many moderating variables involved. By including a large variety of brands and categories in the stimuli, the present study uncovered a more general tendency in the relative impact of BCI, PCI, and CCI across various product categories. Moreover, the results indicate that there is a critical difference in that CCI exerts a stronger effect on consumer evaluation than the two other country-image levels of BCI and PCI.

The general attitude toward a place, here operationalized using the variable BCI, retained no predictive relevance in the presence of the PCI and CCI variables. The variable

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PCI did provide a degree of evaluative relevance, albeit on lower level than that of CCI. Although this study analyzed the effects on brands and not on products, the results showed many similarities to those of Josiassen *et al.* (2013). One difference, however, is that the present study suggests that CCI is a more independent characteristic vis-á-vis BCI and PCI than the Josiassen *et al.* (2013) study indicated. This discrepancy could be due to the present study's empirical investigation of a variety of brands rather than a single category of products. It could be argued that the product category of consumer electronics used by Josiassen *et al.* (2013) is a category for which BCI, PCI, and CCI are highly interrelated. BCI and PCI tend to be higher for "more developed" countries (Bilkey and Nes, 1982), and the CCI for electronics could correlate with expectations that a country with a well-developed high-tech industry will typically be "more developed." In the present study, the use of multiple categories of products helped to mitigate the impact of the particularities of any one product category on the results.

Altogether, the results suggest that the origin effect, in terms of BCI, constitutes a relevant factor in consumers' evaluation of and attitude formation toward brands, albeit with a limited effect size compared with the more specific image levels of PCI and CCI. The results also demonstrate that this principle applies even when a large variety of product categories are represented in the stimuli. This variety makes it unlikely that this effect was the result of a particular characteristic of a single product category. Another interesting take-away is the fact that the different tested levels of PCI gained predictive relevance as they became more specific to the evaluation situation. Taken at face value, this tendency invites the conclusion that information that applies more specifically to a given evaluation situation bears greater weight in the formulation of a consumer's attitude toward the object being assessed. If demonstrated to be robust, this observation will have implications beyond the realm of marketing, as it reflects how information that is more applicable to a given evaluation situation achieves stronger evaluative relevance. It appears that origin matters, and that it matters increasingly when it prompts some pre-understanding of its meaning, for example, in matching a place and a brand based on the mutual relevance of a category. In this example, the product category becomes the path through which an association to a place becomes relevant to the evaluation situation. Taking this one step further, perhaps origin is unlikely to exert a strong effect in and of itself; rather, it appears that its relevance to the evaluation situation needs to be amplified or activated through an intermediary factor—represented in the present study by a mutual association of a brand and a place with a specific product category.

Managerial implications

At first glance, the general conclusion that marketing managers can derive from these findings is that BCI itself can be disregarded because it has limited direct effect on consumer brand evaluations. This does not imply, however, that the origin of brands is unimportant. Marketing practitioners should indeed take the possible effects of perceived country origin into serious consideration. The relevance and strength of the effect, however, depend on the specific product category to which the brand belongs. For example, a category such as wine benefits more from an association with France than the category of cars. By being aware of these different relationships, that is, that there are significant differences depending on both the product involved and the category it belongs to, marketing practitioners can adjust how their brand is presented to consumers in a more thoughtful way.

However, even though consumers' perceptions of the quality of certain categories from a specific place has a stronger influence on their evaluation of a brand than their more general evaluation of products from that particular place, this effect is more limited in scope. It applies only to a particular product category, while the broader PCI applies to a vast array of situations involving all products from a particular country. Hence, PCI may still be a highly relevant concept for brands associated with specific countries.

It could also be argued that a more general principle has been demonstrated in the present study: that origin must be complemented with some means of making it relevant in order to exert a strong effect on the consumer evaluation of brands. In this case, this function was fulfilled by the mediating construct of product category, which simultaneously situates the relevance of a place and makes sense of a brand through categorization. This principle may help marketing practitioners to better understand how references to place may lead to divergent outcomes and to anticipate the effects of such place references.

Implications for future research

As for any study using sample stimuli drawn from a large and diverse population, a key limitation of the present study is the representation of brands generated by the selection strategy used and the impact on generalizability. The authors would, therefore, invite future research that attempts to replicate the findings presented here, using an alternative population of stimuli. This could give some indication of the robustness of the results. Another aspect of this study that warrants further examination is its design, which grouped together several categories, brands, and countries in order to examine the relationships on an *aggregated* level. In this study, this aggregation strategy constituted a vital prerequisite for providing a contribution that was not intrinsically linked to a particular situation, for instance, to a single category of products. However, this approach did incur some drawbacks; for example, it precluded the use of established scale items in favor of a more abbreviated measurement approach. Any aggregate of a larger variety of stimuli would have put significant strain on the respondents owing to the sheer number of items. Researchers approaching this issue should pay close attention to striking a balance between the representativeness of the stimuli and the strength of the measurement instrument employed. Here, another issue that could also make for an interesting area of study is the question of whether psychographic characteristics of consumers, such as cosmopolitanism or ethnocentrism (Cleveland *et al.*, 2009), can come to exert a moderating effect on one

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or more of the relationships demonstrated in the present study. It seems possible that a characteristic such as ethnocentrism could exert an attenuating or amplifying effect on the influence from just one or two of the country image facets examined in the present study.

Given that the result does, to a reasonable degree of accuracy, reflect how meaning attributed to countries comes into play in the formation of consumers' attitudes toward brands, the managerial implications are straightforward. Association with countries can be leveraged primarily when the category of one's brand, product, or service offering relates to a country in a way that carries positive and salient meaning for consumers. In this situation, origin does have a strong effect on evaluation. Another interesting avenue for future research would be to further examine origin effects derived from non-country places. Some authors have suggested that the particularities typically attributed to countries as a source of associations affecting consumer evaluations should be attributed to "places" in general (van Ittersum *et al.*, 2003; Josiassen *et al.*, 2013). The present authors concede that countries may be a particularly salient category of place to most consumers, and, as a result, they may be the type of place that has the greatest effect in an evaluation situation.

In this study, the summative effect of associations related to BCI, PCI, and CCI has been postulated to exert an effect on BE. It would be interesting to see if this principle can function "in the inverse." In a recent study, White (2012) tested this idea, finding that country image could be construed as the summative effect of the attitudes toward brands associated with that country. The authors of this study suspect that BCI, PCI, CCI, and the BE of brands associated with the country may develop, in terms of consumer attitudes, in some oscillatory process between the associations with a place and those attributed to brands perceived as originating from that place. The nature of this relationship and the challenges surrounding its study constitute the frontier of origin effect research. It would be extremely interesting to see how White's (2012) notion of an inverse origin effect could apply to the model presented here and to the Josiassen *et al.* (2013) model, as one may surmise that a country's reputation could develop through evaluations of individual brands, which influence CCI, in turn affecting PCI and ultimately even affecting BCI. This point has relevance for the issue of how origin effects are linked to other commercial contexts in which place is important, such as in tourism or place branding. It is the authors' hope that the present study can function as a springboard for future research targeting this interesting problem.

APPENDIX A

Full item list, featuring all items (i1–i13) representing the four different latent variables and the exclusion criterion "Familiarity." Each question featured a 7-degree Likert scale response option ranging from *agree completely* (7) to *disagree completely* (1).

Variable	Questions (items)
Brand equity	i1: "The products of [BRAND] are typically of excellent quality." i2: "[BRAND] is considered by most people to be superior compared to other brands in the same product category." i3: "[BRAND] is associated with positive characteristics."
Basic country image	i4: "My opinion of [COUNTRY] is positive on a general level." i5: "[COUNTRY] is a well-developed and stable country." i6: "[COUNTRY] has a great reputation around the world."
Product–country image	i7: "Goods and services from [COUNTRY] are typically of good quality." i8: "[COUNTRY] is known for exporting better goods and services than other countries." i9: "Exports from [COUNTRY] are popular around the world."
Category–country image	i10: "[COUNTRY] [PRODUCT CATEGORY] is usually of good quality." i11: "[PRODUCT CATEGORY] is perceived by most people as being a [COUNTRY] specialty." i12: "I closely associate [PRODUCT CATEGORY] with [COUNTRY]."
Familiarity	i13: "I am familiar with [BRAND]."

APPENDIX B

DESCRIPTIVE STATISTICS.

	i1	i2	i3	i4	i5	i6	i7	i8	i9	i10	i11	i12	i13
N—valid	3356	3356	3356	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800
StDev	1.326	1.481	1.343	1.502	1.589	1.651	1.243	1.405	1.325	1.460	1.902	2.071	2.074
Mean	5.094	4.771	5.097	5.108	5.091	4.731	5.364	4.840	5.409	5.192	4.864	4.686	5.499
Kurtosis	−0.189	−0.285	−0.029	0.006	0.160	−0.749	0.315	−0.332	−0.069	−0.149	−0.906	−1.129	0.135
St.err kurt	0.085	0.085	0.085	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079
Skew	−0.438	−0.383	−0.507	−0.830	−0.785	−0.471	−0.728	−0.347	−0.617	−0.611	−0.524	−0.460	−1.263
St.err skew	0.042	0.042	0.042	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040

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APPENDIX C

ITEM INTERCORRELATIONS

	i1	i2	i3	i4	i5	i6	i7	i8	i9	i10	i11	i12	i13
i1	1.000												
i2	0.675	1.000											
i3	0.784	0.685	1.000										
i4	0.200	0.105	0.209	1.000									
i5	0.202	0.092	0.191	0.615	1.000								
i6	0.175	0.136	0.187	0.628	0.624	1.000							
i7	0.287	0.172	0.272	0.532	0.504	0.458	1.000						
i8	0.216	0.242	0.223	0.401	0.416	0.428	0.723	1.000					
i9	0.227	0.196	0.278	0.337	0.306	0.338	0.609	0.673	1.000				
i10	0.474	0.373	0.428	0.342	0.232	0.245	0.423	0.352	0.345	1.000			
i11	0.319	0.362	0.300	0.165	0.059	0.131	0.206	0.228	0.251	0.725	1.000		
i12	0.322	0.337	0.313	0.179	0.050	0.108	0.217	0.198	0.249	0.702	0.886	1.000	
i13	0.411	0.290	0.430	0.124	0.131	0.076	0.198	0.157	0.223	0.263	0.186	0.209	1.000

APPENDIX D

BCI (I4, I5, AND I6) AND PCI (I7, I8, AND I9) DISTRIBUTION ACROSS COUNTRIES.

Country	Item	$\bar{x}$	σ	Item	$\bar{x}$	σ
Finland	i4	5.48	1.23	i7	5.42	1.06
	i5	6.00	0.97	i8	4.55	1.19
	i6	5.28	1.30	i9	4.59	1.22
France	i4	5.37	1.33	i7	5.58	0.90
	i5	5.37	1.19	i8	5.08	1.20
	i6	5.00	1.46	i9	5.61	1.14
Germany	i4	5.43	1.42	i7	5.98	0.96
	i5	6.04	0.91	i8	5.43	1.26
	i6	5.11	1.46	i9	5.86	1.09
Italy	i4	5.31	1.32	i7	5.33	1.05
	i5	4.29	1.52	i8	4.70	1.19
	i6	4.81	1.40	i9	5.48	1.08
Japan	i4	5.68	1.33	i7	5.89	1.14
	i5	5.75	1.23	i8	5.71	1.30
	i6	5.80	1.21	i9	6.28	0.87
Russia	i4	3.68	1.38	i7	3.64	1.07
	i5	3.09	1.39	i8	3.23	0.97
	i6	2.89	1.21	i9	3.69	1.13
USA	i4	4.49	1.59	i7	5.23	1.25
	i5	4.69	1.64	i8	4.74	1.43
	i6	3.88	1.77	i9	5.79	1.12

APPENDIX E

CCI (I10, I11, AND I12) ACROSS COUNTRIES AND PRODUCT CATEGORIES.

Country	Product category	Item	$\bar{x}$	σ
Finland	Air travel services	i10	4.85	1.05
		i11	3.48	1.14
		i12	2.88	1.42
	Spirits	i10	5.13	1.13
		i11	4.70	1.56
		i12	4.55	1.84

(*Continues*)

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Country	Product category	Item	$\bar{x}$	σ
	Electronics	i10	5.18	1.08
		i11	4.27	1.46
		i12	3.91	1.68
	Fashion	i10	4.18	1.14
		i11	2.37	1.20
		i12	2.01	1.29
	Beer	i10	4.11	0.96
		i11	3.25	1.46
		i12	2.92	1.66
France	Sparkling wine	i10	6.22	0.98
		i11	6.40	0.86
		i12	6.34	1.04
	Fashion	i10	6.13	1.04
		i11	6.39	0.96
		i12	6.31	1.15
	Cars	i10	4.36	1.27
		i11	3.26	1.32
		i12	3.27	1.50
	Food	i10	5.99	0.96
		i11	6.05	1.18
		i12	5.63	1.55
Germany	Cars	i10	5.98	1.11
		i11	5.78	1.51
		i12	5.63	1.68
	Electronics	i10	5.32	1.14
		i11	4.41	1.60
		i12	4.04	1.83
	Sportswear	i10	4.92	1.15
		i11	3.54	1.40
		i12	2.99	1.55
	Beer	i10	5.63	1.17
		i11	5.82	1.34
		i12	5.74	1.53
	Air travel services	i10	5.19	1.33
		i11	4.14	1.58
		i12	3.73	1.80
Italy	Food	i10	6.27	0.84
		i11	6.39	0.95
		i12	6.29	1.13
	Fashion	i10	5.90	1.05
		i11	6.09	1.13
		i12	5.90	1.28
	Cars	i10	4.46	1.28
		i11	4.03	1.59
		i12	3.72	1.78
	Sportswear	i10	4.55	1.14
		i11	3.45	1.47
		i12	3.08	1.68
Japan	Electronics	i10	6.21	0.98
		i11	6.42	0.85
		i12	6.39	0.94
	Cars	i10	5.64	1.25
		i11	5.40	1.43
		i12	5.32	1.50
	Sportswear	i10	4.28	1.00
		i11	2.79	1.34
		i12	2.30	1.31
Russia	Spirits	i10	5.35	1.29
		i11	6.41	1.03

(*Continues*)

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Country	Product category	Item	$\bar{x}$	σ
		i12	6.36	1.05
	Air travel services	i10	3.22	1.20
		i11	2.21	1.19
		i12	2.09	1.24
	Cars	i10	2.99	1.24
		i11	2.15	1.10
		i12	1.86	1.16
USA	Food	i10	3.43	1.71
		i11	3.71	1.99
		i12	4.41	2.06
	Fashion	i10	5.05	1.23
		i11	4.14	1.61
		i12	3.96	1.77
	Sportswear	i10	5.51	1.12
		i11	5.27	1.35
		i12	5.00	1.58
	Cars	i10	4.94	1.28
		i11	4.94	1.32
		i12	4.83	1.52
	Beer	i10	3.77	1.52
		i11	3.36	1.58
		i12	3.27	1.81

BIOGRAPHICAL NOTES

Mikael Andéhn, PhD, is a post-doctoral researcher at the marketing department of the Aalto University School of Business. His research interests include issues pertaining to brands, judgment and decision making, consumer psychology, and the commercial relevance of place.

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The interplay of persuasion inference and flow experience in an entertaining food advergame

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ABSTRACT

Increasingly, unhealthy food is being advertised through online games known as advergames. The advergame is designed for entertaining fun to promote the brand featured in the game. But what happens if the food advertised is healthy or the source of the game is non-commercial? This study examines how people's entertainment (flow experience) interacts with their inference about the persuasion impact of food brands featured in an advergame, which vary according to their persuasion knowledge about the source (e.g., non-commercial versus commercial) and the perceived persuasion effect on self (e.g., beneficial versus harmful). Results of an experiment show that flow is positively associated with persuasion effects of the advergame. Brand attitudes and purchase intentions were the most favorable for non-commercial brands with perceived benefits (healthy food) followed by commercial brands (healthy food) and commercial brands with harmful effects (less healthy food). However, persuasion effects for purchase intention were mitigated when participants were immersed in a flow state. Ramifications for persuasion and health promotions are discussed. Copyright © 2016 John Wiley & Sons, Ltd.

INTRODUCTION

Food marketing provides persuasive information to people about healthy and unhealthy foods across media. Recently, the Federal Trade Commission reported that advertising spending for food and beverages on television has decreased, whereas spending on digital forms of advertising has increased by 50% (Powell *et al*., 2013). One popular digital promotion for food is the advergame, a custom-made online game designed to promote a company's brand or product (Youn and Lee, 2005). More than half of the games on web sites of the top 100 companies in the USA feature food products (Lee *et al*., 2009).

Research on advergames has shown that the games persuade through entertainment. Game players can become quite immersed in the game-playing situation in which the game-eliciting positive affect is transferred to the products or brands (Nelson and Waiguny, 2012; Waiguny *et al*., 2012). Some research has found that playing an advergame that features food can actually increase the game-players' food intake (e.g., Harris *et al*., 2012; Folkvord *et al*., 2013).

While public concern has risen regarding the negative effects of such marketing activities on public health (e.g., advergames for unhealthy food: obesity and diabetes; Institute of Medicine, 2006), fruit and vegetable companies such as Chiquita, Dole, and Bolthouse Farms use advergames to promote their healthier foods. Prosocial and educational organizations also utilize advergames to inform people about healthy foods (e.g., Pempek and Calvert, 2009; Lu *et al*., 2010). As such, the role and the usage of advergames are not exclusive and limited to commercial purposes but also include non-commercial, socially desirable, and educational purposes (Ratan and Ritterfeld, 2009). Some research suggests that playing an educational game can increase players' nutrition knowledge as well as attitudes and intentions toward healthy eating (Peng, 2009). Despite the various advergames and their perceived impact, no known studies have examined how individuals' interpretation about the source of the game and the marketers' intent and people's own beliefs about the persuasive effects influence persuasion. Would the source and the game's persuasion motive (non-commercial versus commercial) influence players' purchase intentions of the brands within the game? Would the type of food promoted in the advergame (healthy versus less healthy) influence people's responses? Would the entertainment in the game impact responses to the brand or game? We set out to investigate these questions.

This study examines how people respond to a food advergame with respect to the advergame's two key issues: the effect of entertainment (according to flow: an experience in which the individual feels a deep sense of immersion and enjoyment; Czikszentmihalyi, 1990) and the intent of the branding (according to the source and product type). The concepts of flow (Czikszentmihalyi, 1990) and people's persuasion inference (Friestad and Wright, 1994; Wright, 2002) are employed to examine our predicted persuasion effects. In effect, we look at how the flow experience and the source of the advergame (non-commercial versus commercial) and presumed effects (beneficial: healthy versus harmful: unhealthy) influence players' advergame attitudes, brand attitudes, and purchase intentions of the food brands.

LITERATURE REVIEW

Advergame and persuasion

Advertising has many functions, including to inform or educate as well as to persuade or sell (Sandage, 1972). In

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addition to these functions, as a form of social communication, advertising can entertain (e.g., Blosser and Roberts, 1985). An advergame often fulfills the entertainment function but can also offer some implicit information about the brand (e.g., 'healthiness'; Waiguny *et al*., 2014) or can foster persuasion (Mallinckrodt and Mizerski, 2007). Branded entertainment via advergames can significantly influence people's perceptions by enhancing brand memory and brand/product knowledge, facilitating brand attitude and choice, purchase intention, and increasing brand preference (Wise *et al*., 2008; Cauberghe and De Pelsmacker, 2010; Gross, 2010; Hernandez and Chapa, 2010; Dias and Agante, 2011; Sukoco and Wu, 2011; Evans *et al*., 2013; Kinard and Hartman, 2013; Panic *et al*., 2013; Peters and Leshner, 2013; Rozendaal *et al*., 2013; Waiguny *et al*., 2013). The primary objective of advergames is to deliver a brand message by 'playability', a core ability of the game to keep people immersed or engrossed. Individuals experience an intrinsic interest and a sense of time distortion during their engagement with advergames due to this entertainment value (Nelson and Waiguny, 2012).

Given this playability, a serious game movement has emerged for the extensive use of computer games for primarily non-commercial purposes (Ratan and Ritterfeld, 2009; Charsky, 2010) such as games for health (e.g., Wii Fit), games for training (Surgery training; Rosser *et al*., 2007), and games for education (e.g., Zoo Tycoon). For instance, Colgate's 'Toothprotector' game aimed to educate people about how toothpaste and dental care products protect teeth from germs, promoting consumers' sustainable dental behavior (Bogost, 2007). Food Force, published by the United Nations in 2005, was created to raise awareness of hunger and food problems (UN World Food Programme). Recently, research has shown that advergames can play a critical role in changing people's food-related attitudes and behaviors, including the promotion of healthy snacks (e.g., fruits and vegetables; Pempek and Calvert, 2009; Harris *et al*., 2012; Folkvord *et al*., 2013).

Therefore, advergames clearly can play a positive role in facilitating people to think or learn about issues across non-commercial, prosocial, and commercial messages. Given the fact that games offer value for commercial and prosocial, informational, and educational purposes (e.g., Lee *et al*., 2009) and healthy food consumption (Harris *et al*., 2012), it is imperative to understand how people accept, interpret, and respond to different types of advergames. Yet to date, no known studies have compared people's response across different game sources and persuasion intentions (e.g., non-commercial versus commercial).

Inference of the persuasion agent's intent: persuasion knowledge

In response to a persuasion message, consumers may actively infer the underlying motives and intentions of the message source rather than simply accepting the message's argument. People's inference, in this case, is processed based on their persuasion knowledge, which allows individuals to recognize the underlying intent about specific persuasion events such as advertising, salespeople's tactics, and price strategy (Campbell and Kirmani, 2000; Hardesty *et al*., 2007). The persuasion knowledge model (Friestad and Wright, 1994) proposes that persuasion targets (e.g., consumers) have their own intuitive theory to cope with a persuasion agent's (e.g., marketer) persuasion attempts (e.g., advertising). When the consumers perceive an ulterior motive of persuasion intent, they are likely to activate persuasion knowledge, which in turn leads them to cope with the persuasion attempt (e.g., ignore, counter-argue, and accept).

Recognizing the source's manipulative intent is also a critical factor in the branding effect of advergames. While the advergame is designed for entertaining fun, the ultimate purpose of the advergame is to promote the brand featured in the game (Youn and Lee, 2005). Because of this format of the advergame (i.e., brand and entertainment), however, the persuasion purpose of an advergame is not always clearly communicated to or recognized by consumers (e.g., Paek *et al*., 2014); thus, the covert impact of advergames would vary depending on how the consumers perceive the intent of the advergame (Friestad and Wright, 1994).

Indeed, some advergame studies have shown that recognizing the commercial intent of the advergame negatively influenced the branding impact of the advergame (e.g., Waiguny *et al*., 2012; Waiguny *et al*., 2013), whereas other studies have found no significant effects of persuasion knowledge on persuasion (e.g., Panic *et al*., 2013). Despite the increasing usage and importance of advergames in non-commercial contexts, no known studies have examined whether the advergame source's commerciality impacts consumers' brand attitudes.

When responding to a non-commercial source, the persuasion knowledge model suggests that persuasion targets may not recognize manipulative commercial intent but instead may perceive the educational or informative intent as it is presented in the advergame. When the same message is delivered from different sources (non-commercial versus commercial), in other words, the persuasion target presumably infers different types of motives, which would activate different degrees of persuasion knowledge, resulting in different persuasion outcomes. Based on the nature of the advergame source, we postulate that persuasion is more impactful when the advergame is presented by a non-commercial than a commercial source.

Inference of the persuasion effectiveness: coping strategy

While consumers' persuasion knowledge generally works to resist commercial persuasion agents' intent, there may be a more complicated relationship between the nature of persuasion knowledge and persuasion (Nelson and Ham, 2012; Ham *et al*., 2015). Friestad and Wright (1994) proposed that persuasion knowledge is a multidimensional concept that includes persuasion targets' beliefs about persuasion agents' ulterior motives and intent, beliefs about the persuasion's effectiveness, and their response strategies to cope with the persuasion attempts (Friestad and Wright, 1994; Kirmani and Campbell, 2004; Kirmini and Campbell, 2009). In this view, consumers are goal-pursuing individuals who actively interact with persuasion agents to achieve their goals, viewing persuasion targets as 'resourceful participants who pursue their own goals and have the ability to select response tactics from their own repertoire' (Friestad and Wright,

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1994: 3). When the consumer's goal matches with the agent's, on the one hand, they tend to perceive a 'cooperative' relationship with the agent and take 'persuasion seeker' strategy, resulting in likely accepting a persuasion attempt. When the goals do not match, they are likely to perceive a 'competitive' relationship and take a 'persuasion sentry' strategy, resulting in resisting the persuasion tactic (Kirmani and Campbell, 2004).

The persuasion sentry (competitive) versus seeker (collaborative) strategy is associated with people's inference of the persuasion attempt's benefit versus harm on self. When a persuasion attempt is perceived as beneficial and helpful to them, consumers are likely to infer a cooperative (versus competitive) relationship because the persuasion offer helps them to achieve their goal (e.g., being healthy). When the persuasion is inferred as harmful to them, the relationship could be interpreted as competitive because the persuasion would impede them from achieving their goal (Kirmani and Campbell, 2004). This coping strategy, based on consumers' active inference process, allows them to either accept or resist the persuasion attempt. When the advergame message is inferred as beneficial (e.g., healthy food), consumers will be less likely to resist the message, whereas consumers may be more likely to resist the advergame when they infer that the advergame message is harmful to self (e.g., less healthy or junk food promotion).

Integrating consumers' persuasion knowledge and their coping strategy (Friestad and Wright, 1994; Kirmani and Campbell, 2004), this study posits that persuasion would be the most impactful when people do not infer any manipulative intent but perceive a beneficial effect on them, followed by when consumers infer a manipulative intent but beneficial effects. Lastly, when consumers perceive a manipulative intent with harmful impact, there should be less persuasion. In other words, when consumers infer the underlying intent and anticipated impact on self, they are likely to evoke persuasion knowledge (by comparing non-commercial versus commercial sources) as well as a coping strategy (by comparing benefit versus harm on self), resulting in much more or less persuasion. Thus, we suspect that consumers will have much more favorable attitudes and behavioral intention for 'non-commercial' and 'healthy' food than for 'commercial' and 'less healthy – junk' food brands. Based on this logic, we hypothesize:

> H1a. The attitudes toward the advergame will be the most favorable in the non-commercial healthy food condition, followed by commercial healthy food and commercial junk food conditions.

> H1b. The attitudes toward the brand will be the most favorable in the non-commercial healthy food condition, followed by commercial healthy food and commercial junk food conditions.

> H1c. The purchase intention for the featured food will be the highest in the non-commercial healthy food condition, followed by commercial healthy food and commercial junk food conditions.

Entertainment impact of the advergame: flow experience

The persuasive power of advergames originated from its entertainment value. Immersing and interacting with the game, people experience and engage in the brand message in a way that is fun and entertaining. Recently, Waiguny *et al*. (2012) observed children's advergame playing and pointed out that this entertainment factor leads children to experience flow, which is positively related to the persuasive power of advergames. The flow state is defined as the holistic sensation that people feel when they act with total involvement (Czikszentmihalyi, 1990). In a flow state, individuals are highly involved in a certain activity; thus, it is the state of 'nothing else seems to matter' (Czikszentmihalyi, 1990: 4). Flow is also described as an experience of optimal and enjoyable moments in which an individual feels 'in control of our actions, master of our own fate….we feel a sense of exhilaration, a deep sense of enjoyment' (Czikszentmihalyi, 1990: 3). Advergames can be regarded as platforms to trigger enjoyable or optimal experiences, and thus the concept of flow plays an important role in explaining the effectiveness of advergames (Steffen *et al*., 2013).

Past research has shown that a state of flow can lead to positive marketing consequences, including attitudes, purchase intentions, and behaviors (Hoffman and Novak, 2009). In particular, flow has been found to positively influence attitude-relevant outcomes: attitudes toward purchasing online (Korzaan, 2003), the web site and brand attitudes (Mathwick and Rigdon, 2004; Sicilia and Ruiz, 2007), and attitudes toward playing games (Hsu and Lu, 2004). Flow, in other words, can be considered as a highly enjoyable psychological state that influences consumer experience and attitude formation (Hoffman and Novak, 1996; Chen *et al*., 1999).

Many studies have investigated the impact of flow state on attitude changes in the context of video games, online games, online shopping, and web browsing experiences, yet no known studies have examined the impact of the flow state on the persuasive power of advergames. Compared with other types of flow-inducing media experiences, the advergame playing experience is relatively simple, quick, and easy (playing time is short, generally 3–4 min, and game challenge level is pretty low; Nelson and Waiguny, 2012). Therefore, it is worthwhile to examine if consumers can experience flow states while they are playing an advergame, and if such flow states influence attitude-related persuasion outcomes. Therefore, we suggest the following hypotheses:

> H2a. The flow state that is experienced by advergame playing will positively influence attitudes toward the advergame.

> H2b. The flow state that is experienced by advergame playing will positively influence attitudes toward the brand featured in the advergame.

> H2c. The flow state that is experienced by advergame playing will positively influence purchase intentions of the brand featured in the advergame.

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Interaction between consumers' inference and flow experience

As reviewed through the previous literature, a state of flow can enhance the key consumer behavior sequence of attitudes, intentions, and behaviors because flow is considered a highly enjoyable psychological state that influences consumer experience and attitude formation (Chen *et al*., 1999). Importantly, however, significant cognitive capacity is required to remain in the optimal state of flow (Mackie and Worth, 1989). Most cognitive resources are allocated to remain in the flow state, which means that there is not much cognitive capacity left over (Green and Brock, 2000). Consumers' inference processing however also requires significant cognitive capacity (Campbell and Kirmani, 2000). In other words, it takes cognitive availability and effort to detect manipulative intent and discern appropriate coping strategies in response to a persuasion tactic.

Given the fact that cognitive capacity is indispensable to inferring the ulterior motive of persuasion and its potential impact on self, we hypothesize that people's persuasion knowledge and coping strategy may not be sufficiently activated when people remain in the optimal state of flow where most cognitive capacity is allocated. Although some research suggests that flow may impede the recognition of commercial content or persuasion knowledge effects on brands for children (e.g., Waiguny *et al*., 2012), it is still not known how flow may interact with perceptions of source differences. Thus, we investigate how people's persuasion inference and flow may operate on attitude changes. Based on ideas about cognitive capacity in the flow state, we predict the following:

H3a. There will be an interaction effect between source inference and flow state such that flow state will mitigate the impact of source difference on attitudes toward the advergame.

H3b. There will be an interaction effect between source inference and flow state such that flow state will mitigate the impact of source difference on attitudes toward the food brands in the advergame.

H3c. There will be an interaction effect between source inference and flow state such that flow state will mitigate the impact of source difference on purchase intention of the food.

METHOD

Overview and participants

Using a three-condition (non-commercial and benefit versus commercial and benefit versus commercial and harm) between-subject design, we examined hypothesized effects of people's persuasion inference and feelings of flow on attitudes toward the advergame, attitudes toward the food brand, and purchase intention of the food brand. Participants were randomly assigned to one of the three source conditions. Flow state was measured right after completing advergame playing. Attitudes toward healthy food in general were measured as a control variable. College students ($N=322$) at a Midwestern university in the USA participated in the study in exchange for course extra credit. Ages varied from 17 to 27 years ($M=20.52$, standard deviation (SD) = 1.46), and women ($N=196$) outnumbered men ($N=124$).

Experimental stimuli

We created a two-dimensional web-based, first-person shooting game (a screenshot of the game appears in Appendix A), in which we manipulated the source (non-commercial versus commercial) and message (healthy versus unhealthy junk food). The three conditions we created were as follows: (i) non-commercial healthy food-promoting organization (Health & Food Org.); (ii) commercial healthy food-promoting company (Keywest Natural Food Co.); or a (iii) commercial less healthy – junk food-promoting company (Yummy King Food Co.). In the advergames, all visual stimuli were categorized into two types of food: healthy foods (three healthy or 'Go' foods, which are products rich in nutrients and relatively low in calories DHHS, 2005, which were tomatoes, bananas, and pineapples) and junk foods (three less healthy or 'Whoa' foods, which are high in fat and/or sugar: hamburgers, pizzas, donuts per FDA, IOM, and CSPI nutrition label guidelines; Paek *et al*., 2014), and those were programmed to be randomly presented in the game with an avatar as a social agent (representing the game player). All the advergames were designed to play for 3 min in line with a marketer's perspective (e.g., Johnson & Johnson's Buddies Scrubbies or Redbull's Formula Face was designed for a 2-min game) and previous studies, which instructed participants to play 3 (e.g., Lee *et al*., 2014) to 5 min (Bailey *et al*., 2009; Hernandez and Chapa, 2010; Dias and Agante, 2011; Folkvord *et al*., 2013; Steffen *et al*., 2013).

Prior to the main test, we executed two pre-tests. The first was conducted with 20 college students to create the optimal level of flow experience by adjusting the game challenge levels such as game objects' (e.g., healthy food: tomato and junk foods: hamburger) number, speed, moving routes, and appearance time (see Waiguny *et al*., 2012, for discussion of challenge and flow). The second was executed with 69 college students to examine whether prior attitudes toward the three fictitious brands were different. The results of the analysis of variance (ANOVA) confirmed no prior attitude difference among the three hypothetical brand names where 1 = unfavorable brand attitude and 7 = favorable brand attitude ($F=1.905$, $df=2$, $p=0.151$; Health & Food Org.: $M=4.85$; $SD=1.09$; Keywest Co.: $M=4.70$; $SD=1.38$; and Yummy Co.: $M=5.09$; $SD=1.08$).

Procedure

The main experiment was carried out on different days of the same week at the computer lab. After signing consent forms, participants were randomly assigned to play one of the three different advergame conditions. Participants were provided brief instructions about each company (Appendix B) and each advergame in terms of game control, game source, and their mission. Specifically, participants were asked to shoot down healthy foods (not junk foods) when they were

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assigned to either the healthy food manufacturer or the non-commercial entity conditions. Participants who were assigned to the junk food manufacturer condition were asked to shoot down only junk foods (not healthy foods). Participants were instructed to shoot as many healthy (or junk) foods as possible; thus, shooting the objects (healthy or junk food) was set as the participants' goal.

Measures

For the manipulation check of the participants' inference of the source's intent, we measured perceived source identification ('I can see that this advergame was created by a non-commercial organization/a commercial food company'; Cronbach's $\alpha = 0.93$) and promotion objective ('I can see this advergame is created to promote their health food/their junk food'; Cronbach's $\alpha = 0.91$) using a 7-point Likert scale with (1) Strongly disagree and (7) Strongly.

For measuring feelings of flow, we adopted a valid measure of flow experience (Novak *et al*., 2000) whereby a narrative description of flow (Appendix C) was provided right after the advergame playing and three items were measured after this question: 'Do you think you experienced flow while playing the advergame?' (1) 'I have experienced flow while I was playing the game'; (2) 'During the time I was playing this game, I feel I'm in a state of flow'; and (3) 'How much would you say you have experienced flow while you playing the game?' with a 7-point Likert scale ranging from (1) not at all and (7) very much; $M = 3.67$, $SD = 1.47$, Cronbach's $\alpha = 0.95$.

Participants' attitude toward the advergame was measured by adopting four semantic differential attitude items ('My attitude toward this advergame is' 'bad–good', 'negative–positive', 'dislike–like', and 'unfavorable–favorable', respectively) with a 7-point scale (attitudes: $M = 3.39$, $SD = 1.33$, Cronbach's $\alpha = 0.96$; adopted from MacKenzie *et al*., 1986). Attitude toward the brand was measured by four questions ('My attitude toward the food brand is' 'bad–good', 'negative–positive', 'dislike–like', and 'unfavorable–favorable', respectively; adopted from MacKenzie *et al*., 2004) with a 7-point scale (attitudes: $M = 4.28$, $SD = 1.29$, Cronbach's $\alpha = 0.98$). We also measured purchase intention using four semantic differential items ('My intention to purchase the brand is unlikely–likely; impossible–possible; improbable: $M = 3.45$, $SD = 1.58$, Cronbach's $\alpha = 0.90$') adopted from MacKenzie *et al*. (1986). As a control measure, we assessed prior attitudes toward healthy food through semantic differential attitude items, which were averaged (e.g., 'My general attitude toward healthy food is' 'bad–good', 'negative–positive', 'dislike–like', and 'unfavorable–favorable', respectively; $M = 5.57$, $SD = 1.54$, Cronbach's $\alpha = 0.97$).

RESULTS

Manipulation checks

The results of an ANOVA show that respondents correctly perceived the source (a non-commercial versus commercial organization: $F(1, 294) = 17.761$, $p < 0.001$: $M_{\text{non-commercial}} = 4.80$; $M_{\text{commercial}} = 2.33$) and the promotion objective (healthy versus junk food: $F(1, 294) = 13.494$, $p < 0.001$; $M_{\text{healthy}} = 4.71$; $M_{\text{junk}} = 2.26$). Thus, the manipulation was successful.

Hypotheses testing

To test the proposed hypotheses, we performed a series of hierarchical regression analyses following a three-step process. In the first step (model 1), prior attitude toward healthy food was entered to control its potential confounding impact. In the second step (model 2), each main effect of source and flow state was entered after flow was centralized. In the third step (model 3), the interaction term (source × flow state) was entered to test the interaction effect. Descriptive statistics of the variables are listed in Table 1, and a correlation matrix is demonstrated in Table 2. Multicollinearity, tested by tolerance (source: 0.655; flow: 1.000; attitudes toward healthy food: 0.656) and variance inflation factor (source: 1.526; flow: 1.000; attitudes toward healthy food: 1.526), was satisfied with the cutoff values, indicating that no multicollinearity problems exist among the predictors.

Hypotheses 1a–1c examined the inferred effect of source on attitudes toward the advergame, attitudes toward the food brand, and purchase intentions. After controlling general attitudes toward healthy food (model 1), the results of hierarchical regression analyses showed that source did not have a significant effect on attitudes toward the advergame (regression 1 – model 2: $\beta = 0.009$; $p > 0.1$; in Table 3) but had a significant impact on attitudes toward the food brand (regression 2 – model 2: $\beta = 0.443$; $p < 0.001$; in Table 3) and purchase intentions (regression 3 – model 2: $\beta = 0.135$; $p < 0.05$; in Table 3). As a result, H1a was not supported, but H1b and H1c were successfully supported (Table 3).

Subsequent post hoc ANOVA analyses were run to see which source condition makes a significant difference on brand attitudes and purchase intention. First, the pairwise comparisons in ANOVA on attitudes toward the brand ($F = 50.855$; $df = 2$; $p < 0.001$; $\eta^2 = 0.257$) showed that each of the three comparisons was significantly different: the most favorable brand attitude was observed in the non-commercial healthy food condition ($M = 5.042$; $SD = 1.149$), followed by the commercial healthy food ($M = 4.204$; $SD = 0.954$) and commercial junk food ($M = 3.474$; $SD = 1.175$; $p < 0.001$) conditions. The largest difference was found between non-commercial healthy and commercial less healthy junk food conditions. Second, the same pairwise comparisons in ANOVA on purchase intention ($F = 13.220$; $df = 2$; $p < 0.001$; $\eta^2 = 0.083$) showed that the difference between non-commercial healthy ($M = 3.847$; $SD = 1.793$) and commercial healthy foods ($M = 3.677$; $SD = 1.580$) was not significant ($p = 0.447$), whereas the difference was significant between commercial healthy ($M = 3.677$; $SD = 0.1.580$) and commercial less healthy junk food ($M = 2.724$; $SD = 1.375$; $p < 0.001$) and between non-commercial healthy and commercial less healthy junk food ($p < 0.001$) conditions. The largest difference was also found between the non-commercial healthy food and commercial less healthy junk food conditions.

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Table 1. Descriptive statistics

	Attitudes toward the advergam		Attitudes toward the branc		Purchase intention	
Variables	*M*	*SD*	*M*	*SD*	*M*	*SD*
Dependent variables	3.386	1.325	4.309	1.269	3.462	1.675
Control variable						
Att healthy food	5.572	1.545	5.572	1.545	5.572	1.545
Independent variable						
Flow	3.888	1.307	3.888	1.307	3.888	1.307
Source						
Non-commercial_health	3.374	1.259	5.042	1.149	3.847	1.793
Commercial_health	3.343	1.344	4.204	0.954	3.677	1.580
Commercial_junk	3.451	1.401	3.474	1.175	2.724	1.375
Source total	3.386	1.326	4.309	1.269	3.462	1.675

Note: $N = 297$; value of flow is not centered; Att: Attitudes toward.

Table 2. Correlation table

	Att advergame	Att brand	Purchase intention	Att healthy food	Flow
Att advergame	1				
Att brand	0.289**	1			
Purchase intention	0.335**	0.344**	1		
Att healthy food	0.021	0.389**	0.301**	1	
Flow	0.530**	0.184**	0.240**	0.009	1

Note: Att: Attitudes toward.
***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; [a]$p < 0.1$.

Table 3. Summary of hierarchical regression analyses

Dependent variable	Attitudes toward the advergame (regression 1)			Attitudes toward the brand (regression 2)			Purchase intention (regression 3)		
	Mkodel 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Control									
Att healthy food	−0.021	−0.032	−0.032	0.389***	0.107	0.107	0.301***	0.213**	0.213**
Predictors									
Source		0.009	0.009		0.443***	0.442***		0.135*	0.134*
Flow		0.530***	0.444***		0.192***	0.326*		0.240***	0.540***
Interaction									
Source × Flow			0.094			−0.143			−0.323*
R^2	0.000	0.282	0.283	0.389	0.549	0.552	0.301	0.397	0.415
R^2 changes		0.281	0.001		0.150***	0.003		0.067***	0.014*
F	0.135	38.278***	28.783***	52.472***	42.135***	31.923***	29.465***	18.316***	15.207***

Note: Flow is centered for moderation analysis.
***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; [a]$p < 0.1$.

Hypotheses 2a–2c examined the main effect of flow state on the dependent variables. After controlling general attitudes toward healthy food (model 1), the result of the regression showed that flow had a significantly positive impact on attitudes toward the advergame (regression 1 – model 2: $\beta = 0.530$; $p < 0.001$; in Table 3), attitudes toward the brand (regression 2 – model 2: $\beta = 0.192$; $p < 0.001$; in Table 3), and purchase intention (regression 3 – model 2: $\beta = 0.240$; $p < 0.001$; in Table 3). Thus, H2a, H2b, and H2c were all supported (Table 3).

Hypotheses 3a–3c predicted interaction effects between source and flow. The results of three hierarchical regression analyses showed that the interaction effect was not significant on attitudes toward the advergame (regression 1 – model 3: $\beta = 0.094$; $p > 0.1$; in Table 3) and attitudes toward the food brand (regression 2 – model 3: $\beta = -0.143$; $p > 0.1$; in Table 3), but it was significant on purchase intention (regression 3 – model 3: $\beta = -0.315$; $p < 0.05$; in Table 3). The higher the flow, the lesser the impact of source on purchase intention. H3a and H3b were not supported, while H3c was supported (Table 3).

A series of post hoc hierarchical regression analyses were run to specify in which conditions the interaction was significant. The results revealed that the interaction on purchase intention was significant between non-commercial and commercial healthy conditions (regression 4 – model 3: $\beta = -1.007$; $p < 0.01$; in Table 4) and between non-commercial healthy food and commercial less healthy junk food conditions (regression 6 – model 3: $\beta = -0.320$; $p < 0.05$; in Table 4) but was not significant between commercial healthy and less healthy junk food conditions (regression 5 – model 3: $\beta = -0.193$; $p > 0.05$; in Table 4). Details are demonstrated in Table 4.

Across the analyses, the control variable (general attitude toward healthy food) was significant for attitudes toward the food brand (regression 2 – model 1: $\beta = 0.389$; $p < 0.001$, in Table 3) and purchase intention (regression 3 – model 1: $\beta = 0.301$; $p < 0.001$, in Table 3). Therefore, subsequent hierarchical regression analyses were executed to examine if there is an interaction effect between general attitudes toward healthy food and the source. The result showed that no interaction effect was found on attitudes toward the food brand (model 2: source × Att healthy food: $\beta = 0.112$; $p = 0.391$) after controlling for the main effects (model 1: source: $\beta = 0.435$; $p < 0.001$; Att healthy food: $\beta = 0.114$; $p < 0.1$). In addition, no interaction effect was found on purchase intention (model 2: source × Att healthy food: $\beta = 0.112$; $p = 0.391$), after inserting the main independent variables (model 1: source: $\beta = 0.125$; $p < 0.1$; Att healthy food: $\beta = 0.114$; $p = 0.079$). Therefore, there is no moderating effect of attitudes toward healthy food on the dependent variables.

DISCUSSION

Advergames have been widely used for food branding and health educational purposes because the medium engages people in the process of informing and persuading through entertainment (Lee *et al*., 2009; Cicchirillo and Jhih-Syuan, 2011). Compared with packages (Elliott, 2007) and television commercials (Stitt and Kunkel, 2008), the advergame medium offers the extra advantage of immersion within the promotion (Thomson, 2010, 2011). This sort of intense immersion, characterized as flow, can enhance the fun and persuasive qualities of the advertising and detract from any skepticism or possible counter-arguing of persuasive intent, according to the results of our study. As such, our findings provide a theoretical contribution to the understanding of how audiences' entertainment (in the form of flow) interacts with and inference of persuasion intent and its effect in the context of advergames. In addition, the results offer caution and promise for advertisers. Contributions are outlined next.

First, whereas past research has shown favorable persuasion effects for featured brands in games (both healthy and less healthy products; e.g., Peng, 2009; Mallinckrodt and Mizerski, 2007), there has been little to no research that has examined or compared how the perceived motive of the game source influences the persuasion. By testing non-commercial versus commercial source conditions in the same healthy food context, we found that the predicted main effect of the perceived source was significant. As expected by the persuasion knowledge model (Friestad and Wright, 1994), people may perceive manipulative persuasion intention for the commercial source more than for the non-commercial organization, which in turn influences their attitudes toward the food brand and purchase intention. The same healthy foods featured in the non-commercial games were perceived more favorably than those in the commercial games, even though there were no inherent differences in attitudes toward the source brands. Implications mean that consumers may be more skeptical when a commercial company such as Dole promotes fruit via games than when a non-profit organization or government entity promotes the same product. Yet, in our study, there was no significant difference between these two source conditions for attitudes toward the advergame,

Table 4. Summary of post hoc hierarchical regression analyses

Dependent variable	Purchase intention (regression 4)			Purchase intention (regression 5)			Purchase intention (regression 6)		
Independent variable condition	Non-commercial versus commercial health			Commercial health versus junk			Non-commercial health versus commercial junk		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Control									
Att healthy food	0.183**	0.179**	0.213**	0.280***	0.121	0.124	0.345***	0.223*	0.221*
Predictors									
Source		0.045	0.045		0.216*	0.214*		0.164[a]	0.163[a]
Flow		0.204**	1.192***		0.400***	0.216		0.147*	0.434**
Interaction									
Source × Flow			−1.007**			0.193			−0.320*
R^2	0.034	0.076	0.115	0.078	0.262	0.266	0.119	0.152	0.171
R^2 changes		0.043	0.039		0.184	0.004		0.033	0.02
F	7.212**	5.674**	6.658***	15.444***	21.331***	16.214***	26.761***	11.675***	10.078***

Note: Flow is centered for moderation analysis.
***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; [a]$p < 0.1$.

implying that consumers may not be concerned about marketers' manipulative intent when they enjoy the advergame, just when they think about their evaluations or intentions to purchase the featured brands.

Second, we tested the beneficial versus harmful conditions: healthy food versus less healthy junk food when both game sources were the same commercial companies. In this case, the perceived source effect was also significant, demonstrating that when the advergame source was perceived to provide beneficial information to game players (promoting a healthy product), people were more favorable (attitudes) toward the food brand and more likely to purchase it than when they perceived that the game's purpose was to sell them a harmful product (promoting less healthy junk food). As hypothesized by Kirmani and Campbell (2004), this result implies that individuals are more likely to accept beneficial information and less likely to accept harmful messages, which in turn influences their attitudes and intention. This result suggests that companies that use advergames to promote their healthier food products may fare better than those who promote less healthy products, at least when targeting an adult population featured here.

By comparing the commercial less healthy junk food source with either the commercial healthy or non-commercial healthy food case, third, we found the largest brand attitudes and purchase intention differences between the non-commercial healthy food game and the commercial less healthy junk food game where people might integrate persuasion knowledge (commercial versus non-commercial source cue) and perceived effects on self (by comparing healthy food versus less healthy junk food cue). By using source cues and implied effects of game on self, this integration led to the least favorable attitudes toward the food brand and purchase intention compared with when either of the two inferences (source and perceived effect) was elicited. The results showed that when manipulative intent (in response to commercial source) and harmful impact (in response to less healthy junk food source) were perceived together, there was more resistance to the advergame's persuasion, compared with when individuals perceived only the manipulative intent or harm on self. For theory, this result implies that consumers can integrate their persuasion inference in response to a persuasion attempt, resulting in enhancing or reducing the impact of persuasion. Thus, the presumed positive and persuasive power of advergames may in fact have boundary conditions. Persuasion knowledge evoked by perceiving manipulative intent can be integrated with benefit–harm assessment. Such integrated inferences may enhance or counterbalance each inference's effect on consumers' persuasion coping strategy.

A second area of contribution from this research relates to how advergame players' feelings of flow impacted persuasion, directly measuring the flow state of the advergame players. Across the three dependent variables, flow showed a significantly positive impact in that the more flow the players felt, the more favorable attitudes toward the advergame, attitudes toward the food brand, and the higher purchase intention of the featured brands. The results demonstrate the powerful entertaining impact of advergames on branding, which is consistent with the idea of affect transfer theory: the advergame elicits positive emotions, which impact the featured brands (Waiguny *et al*., 2012). Feelings of flow, further, create a powerful emotional state in which consumers (i.e., advergame players) are engaged into the game. Like research in other contexts (e.g., web site and brand attitudes Mathwick and Rigdon, 2004; Sicilia and Ruiz, 2007), our study showed that this highly enjoyable psychological state can positively influence game-related persuasion processes. This is the first known study to demonstrate the impact of flow on persuasion within an advergame context.

Importantly, although we found main effects of flow on our persuasion variables, we also showed how game entertainment (flow state) interacts with the perceived source effects. The results showed that the interaction was significant for purchase intention. A negative relationship (β) revealed that feeling a higher level of flow decreases the impact of source on purchase intention. In other words, the more flow a player is experiencing during game play, the less likely he or she will scrutinize the commercial or non-commercial source when considering purchase intentions. Sufficient cognitive capacity is required to infer the source's persuasion intent and perceived impact on self, according to the persuasion knowledge model (Friestad and Wright, 1994; Campbell and Kirmani, 2000, 2008), and fully engaging in the game may limit cognitive capacity for the processing inference (Waiguny *et al*., 2012). Our results with respect to flow relate to a growing body of work that underscores the benefits of immersion for persuasion (Liu and Shrum, 2002) but also the pitfall for persuasion knowledge (Waiguny *et al*., 2012). In our study, the more the game players were immersed in a flow experience, the less likely they were to activate persuasion knowledge related to the source effects and probable intent of the game.

Overall, as flow increased and presumably took up a considerable amount of cognitive resources, people's persuasion inference would be limited in response to the different source perceptions. However, the effect of flow was significant for all measures. When the impact of persuasion inference is strong, or when the feelings of flow are not strong enough to limit cognitive capacity, consumers still can process both psychological reactions (flow and persuasion inference). These results suggest that if games are fun and engrossing, thus contributing to a flow experience, then skepticism may be mitigated for less healthy foods. Future research should corroborate this result with other games, populations, and measured forms of skepticism.

Limitations and future study

We have several limitations. First, the experiment used fictitious brands in order to increase internal validity. Providing the same game-playing situation (e.g., game sound, visual, and interface) is imperative to perfectly compare the impact of planned variables (i.e., source difference). Future study, however, may examine a real advergame situation in order to increase external validity. Second, this study measured individuals' self-reported flow state. Alternative measurements could be considered in future research (e.g., implicit method). This design would increase the value of the current

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advergame research as well as the health educational value of the advergame. We hope that our study initiates further research in this important area.

BIOGRAPHICAL NOTES

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Michelle R. Nelson (PhD, University of Illinois at Urbana-Champaign) is an associate professor in the Charles H. Sandage Department of Advertising at the University of Illinois-Urbana. Her research and public engagement endeavors relate to advertising/persuasion literacy and product placement. Nelson has published in leading advertising (*JA*, *IJA*, *JAR*, *JCIRA*, and *JIAD*), consumer research (*JCP*), and communication (*JMCQ*) journals. She is on the editorial board of *JA* and is an Associate Editor of *IJA*.

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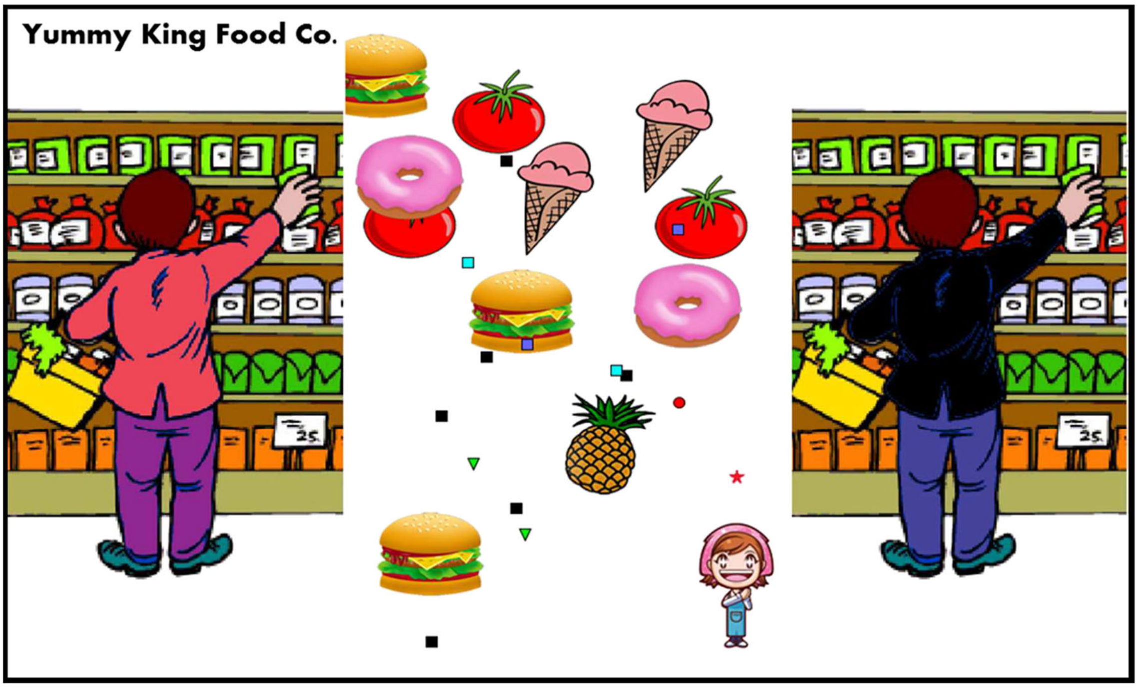
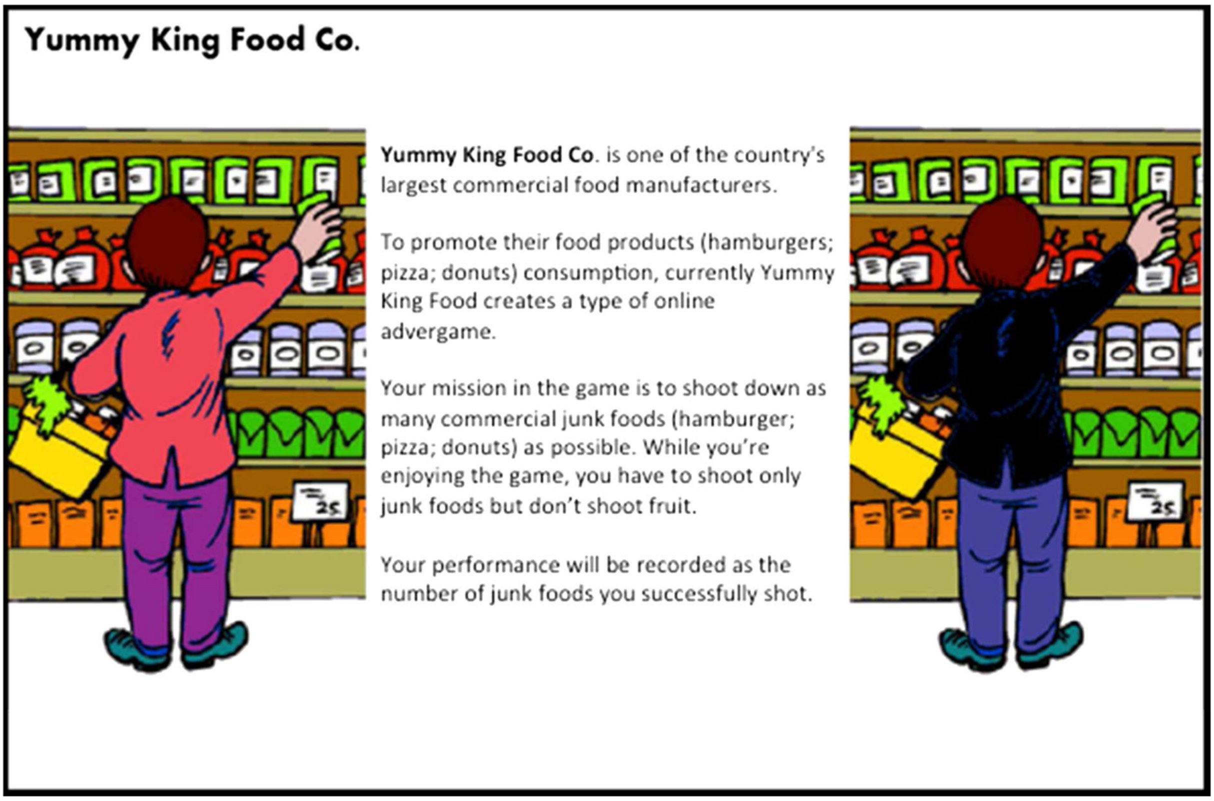
APPENDIX A

Advergame screenshot (e.g., commercial junk food condition)



APPENDIX B

Advergame instruction (presented before the advergame was played; e.g., commercial junk food)



HEALTH & FOOD ORG.

Health & Food Org. is one of the country's largest non-profit organizations to manage US people's health conditions. To promote healthy fruit consumption, currently Health & Food Org. creates a type of online advergame. Your mission in the game is to shoot down as many healthy fruits (banana, pineapple, and tomato) as possible. While you are enjoying the game, you have to shoot only fruits but do not shoot junk food. Your performance will be recorded as the number of fruits you successfully shot.

KEYWEST NATURAL FOOD CO.

Keywest Natural Food Co. is one of the country's largest and most well-known producers of branded fruit. To promote their healthy fruit consumption, currently Keywest Natural Food Co. creates a type of online advergame. Your mission in the game is to shoot down as many healthy fruits (banana, pineapple, and tomato) as possible. While you are enjoying the game, you have to shoot only fruits but do not shoot junk food. Your performance will be recorded as the number of fruits you successfully shot.

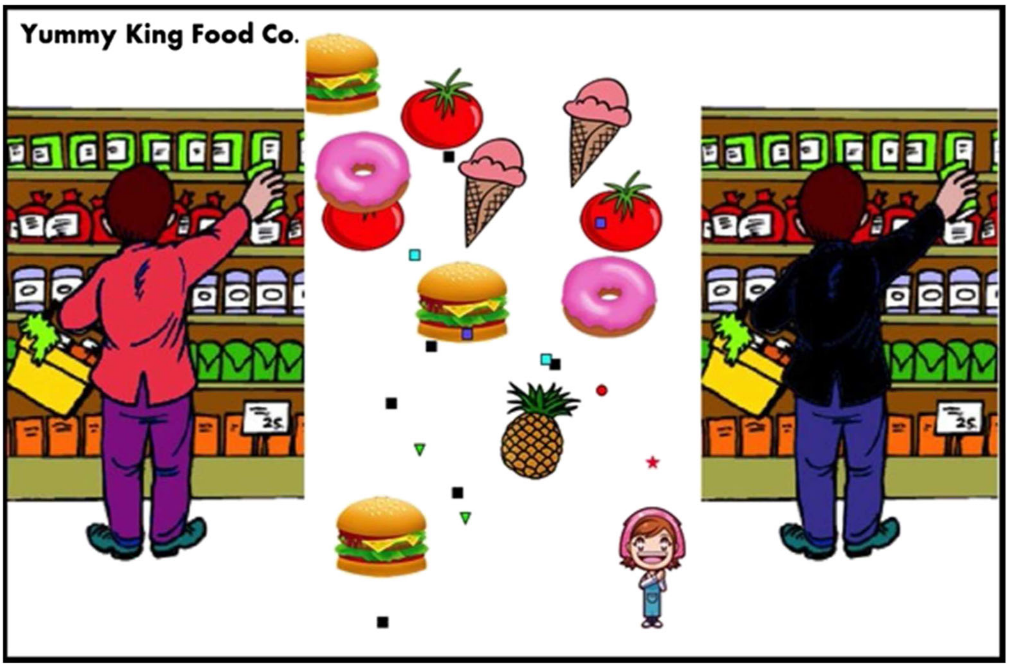
YUMMY KING FOOD CO.

Yummy King Food Co. is one of the country's largest commercial food manufacturers. To promote their food products (hamburgers, pizza, and donuts) consumption, currently Yummy King Food creates a type of online advergame. Your mission in the game is to shoot down as many commercial junk foods (hamburger, pizza, and donuts) as possible. While you are enjoying the game, you have to shoot only junk foods but do not shoot fruit. Your performance will be recorded as the number of junk foods you successfully shot.

APPENDIX C

Description of flow statement (Novak *et al*., 2009)

The word flow is used to describe a state of mind sometimes experienced by people who are deeply involved in some activity. One example of flow is the case where a professional athlete is playing exceptionally well and achieves a state of mind where nothing else matters but the game; they are completely and totally immersed in it. The experience is not exclusive to athletics —many people report this state of mind when playing games, when engaging in hobbies, or working. Activities that lead to flow completely captivate a person for some period of time. When in flow, time may seem to stand still and nothing else seems to matter. Flow has been described as an intrinsically enjoyable experience.



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Construction of gender roles in perceived scarce environments – Maintaining masculinity when shopping for fast fashion apparel

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ABSTRACT

Gender refers to ways men and women socialize into the male and female roles that are commonly attributed to them. These roles are continuously (re)constructed within and through our daily activities. Prior literature suggests a need for more research in investigating how men and women construct their identity in various exchange situations and in various cultural settings. This paper explores the situational construction of male and female identities (especially the male one) when shopping for fashion products in environments with strategically created scarcity. The findings of this study suggest that, when shopping for fashion products in scarce environments, men and women tend to exhibit gendered behaviors that are considered more consistent with their traditional gender norms. We find that men, although concerned about their appearance, adhere to urgent buying behavior. This behavior helps men maintain some of their traditional masculine identity. In addition, they do not participate as frequently in the in-store hoarding and in-store hiding that are more frequently exhibited by women and that are more consistent with a feminine identity.

INTRODUCTION

Comparing shopping behaviors across genders is an important market segmentation approach and has been investigated by many researchers. However, previous retail researchers have largely examined gender and consumption in terms of female shoppers, thus under-representing men in the studies. For decades, marketers took it for granted that most consumers were women (Oakley, 1976; Zeithaml, 1985; Miller, 1998; Mitchell and Walsh, 2004; Catterall *et al*., 2005). Prior literature has also suggested that shopping is a gendered activity and perceived it to be closely linked with women rather than associated equally with both sexes (Oakley, 1976; Lunt and Livingstone, 1992; Bertrand and Davidovitsch, 2008). For men, disliking shopping represented a public expression of distaste and a confirmation of their manhood (Campbell, 1997; Brown, 1998).

However, since the 1980s, there has been a rise of a "new hegemonic masculinity" (Patterson and Elliott, 2002), which includes a feminization of masculinity. The feminization process includes men becoming more concerned about their appearance (Sturrock and Pioch, 1998; Salzman *et al*., 2005; Ostberg, 2009; Ross, 2012). Because of changing male views about their own masculinity, men are now increasingly engaging in consumption behaviors that were traditionally considered off-limits. Because of this change in mainstream masculinity, men are spending time and money on their appearance and are now more involved in shopping for products that were once seen as female oriented: apparel, cosmetics, and skincare (Dholakia, 1999; Otnes and McGrath, 2001; Bakewell and Mitchell, 2004; Tuncay and Otnes, 2008; Ross, 2012). Getting a manicure or dressing in the latest fashion is actually considered essential for a successful business career by this "new" man. Research also suggests that men aged 18–34 are considerably more fashion conscious than older men (Marks, 2002; Ostberg, 2009; Ross, 2012) and that younger men are more openly shopping for fashion and beauty products (Global Cosmetic Industry, 2002; Ross, 2012), indicating an increasing trend towards less stereotypical behaviors. As "masculinity" is in a state of fluctuation, there is a need to investigate shopping contexts to note what has changed and what still has ties to traditional norms.

Issues caused by the changes in masculinity

There is evidence that the dynamic nature of masculinity is creating problems for young American men. Holt and Thompson (2004) discussed male attempts to avoid the "emasculation" occurring owing to these changes in their consumption of formerly "female products." They promote a new definition of masculinity, which they label as the Man-of-Action-Hero, after interviews with informants who had successfully handled the identity crises faced. However, there are obviously some men who are having problems handling those crises. Gentry *et al*. (2012) expressed the challenge facing the young male of him losing his identity as a maverick, a provider, a protector, and a hero as the "essential semiotics of the phallus that have driven masculinity are contradicted and masculine identities are getting more and more untraditionally created in the marketplace."

Lemon (1996) noted the mounting evidence of the declining physical and emotional health of men as supporting the contention of a crisis of masculinity. For example, suicide rates among US men aged 25–34 were double those in 1980, and men now account for one in five cases of anorexia nervosa, up from one in ten in 1980 (Salzman *et al*., 2005, p. 189). Garcia (2008, p. 8) reports a study from the *Journal of Clinical Endocrinology and Metabolism* in 2007 that found a population-wide decline in men's testosterone levels over the past 20 years. Garcia (2008, p. 128) also cites a National

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The data collection for this research was conducted at the University of Nebraska, Lincoln, when the corresponding author was a doctoral student.

Centers for Disease Control and Prevention report that found that 86% of all adolescent suicides are committed by boys. Thus, adjustments to manhood are associated with complex identity issues, leading to changes in how young American men are presenting themselves through dress.

There is also some evidence that problems with changing "masculinity" constructions are not unique to American men. Thompson and Fletcher (2005) cited a Leo Burnett study finding that 61% of French men, 53% of Brazilian men, and 50% of American men say that the expectations of men in society are unclear. Chen (2012) found that many Japanese men associate themselves with "feminized" masculinity, which is especially notable as Japan was once considered the most masculine society in the world (Hofstede, 2001). Indian men are beginning to purchase large volumes of fashion cream (Gentry *et al*., 2012). Even some liberal Scandinavian men find their new roles demoralizing. A Norwegian novelist married to a Swede writes of "walking around Stockholm's streets, modern and feminized, with a furious 19th century man inside me" (Economist, 2015, p. 25). Thus, given that the definition of masculinity is rather fluid and some men are having problems handling that dynamism, it is important to understand what men today are doing to maintain their masculine norms as they venture into domains that previously had belonged to women. We will investigate these issues in the context of fast fashion.

Masculinity and apparel consumption

Given the rise of the male consumer as an avid consumer of fashion goods, the retail industry has started focusing on this target market seriously. Fashion companies are making significant investments in luring male shoppers (Stock, 2014). Michael Kors, for example, is hoping to grow its annual menswear revenue to $1bn, which would amount to almost a sevenfold increase. Coach, meanwhile, has expanded its sales to men from $100m in 2010 to about $700m more recently (Stock, 2014). Similarly, fast fashion retailers, predominantly known to target female shoppers, have started taking male shoppers as serious consumers. In the UK, the well-known fast fashion brand, H&M, launched standalone stores for men only (Ormrod, 2013) and started a men's body wear collection featuring David Beckham to tap into male desire.

Recent research on gender issues focuses on understanding how gender is constructed within and through our daily activities (Maclaran *et al*., 2009). Researchers like Beetles and Crane (2005) have suggested a need for more research in investigating the differential experiences of men and women in various exchange situations and in various cultural settings. We suggest that certain gendered behaviors will be considered more appropriate than others while shopping for fashion products in scarcity contexts. For example, the new man, even though he has a higher concern about his appearance and body, may still adhere to urgent buying behavior. This behavior may help him construct a masculine identity that is considered to be within the limits of expected "hegemonic gender norms" and would be considered more appropriate than behaviors like in-store hoarding or in-store hiding, which may be more likely to be exhibited by women. Thus, we investigate how men and women socialize into their gender roles when shopping for fashion products in a specific context of scarcity (fast fashion), thus helping us understand the situational construction of male and female identities. We will investigate how both men and women do gender in the context of scarcity but will focus more on what steps the male takes to retain more traditional masculinity norms when entering a female domain.

In the following section, we review the existing literature and offer our conjecture that, when subjected to shopping for fashion goods under perceived scarcity conditions, men and women tend to follow their hegemonic gender norms. Given that previous research has long found men to be more competitive than women (Ahlgren and Johnson, 1979; Olds and Shaver, 1980; Beynon, 2002; Davis *et al*., 2014) and that women tend to have more hedonic motivation than men (Chen-Yu and Seock, 2002; Davis *et al*., 2014), we formulate hypotheses using competitiveness as the indicant of masculinity and hedonism as the indicant of femininity.

LITERATURE REVIEW

Gender schema theory suggests that individuals acquire and display traits, attitudes, and behaviors that are consistent with their gender roles (Bem, 1981). Gender role serves as an organizing principle through which individuals process information about themselves and the world around them. Traditional gender roles have nurtured and socialized men to be hunters and women to be gatherers (Woodruffe-Burton, 1998). These gender roles have also been known to influence shopping behaviors across genders. In general, hunters while shopping tend to prefer finding items straight away and prefer going to stores where products are easy to find and have a limited variety of items displayed. Gatherers like searching for clothes, comparing fashion items, and visiting many stores. They tend to be more fashion conscious, have greater self-confidence in their shopping ability, and enjoy shopping for clothes.

Masculinity and fashion consumption

Connell's (1987) hegemonic masculinity framework explains the underlying process through which a traditional view of men affects male determination of acceptable behaviors. Perhaps the most vivid description of this traditional view was that by Brannon and David (1976), who listed four categories: (1) a preoccupation with competition, achievement, and success; (2) an emphasis on physical toughness and emotional stoicism; (3) homophobia and an avoidance of all things feminine; and (4) an emphasis on being aggressive and forceful. Connell (1987) argued that hegemonic masculinity can be understood as an aspirational and largely unreachable set of social norms and ideals. Further, most men never embodied hegemonic masculinity, but they supported it, were regulated by it, and used it to judge other men's conduct (Wetherell and Edley, 1999, p. 832). This masculine tradition led to the "great masculine renunciation," in which men gave up all pretension to beauty and dressed for function alone (Rinallo, 2007; McNeil and Karaminas, 2009; Ostberg, 2012). The construction of fashion as a woman's preoccupation had made men's interest in fashion and appearance

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at the very best "suspect" of effeminacy or, even worse, of homosexuality.

However, as noted earlier, in recent years, there has been a rise of the "new man," which includes a feminization of masculinity where men are becoming actively involved in the carnival of consumption that was previously reserved predominantly for women (Ostberg, 2009). Chapman (1988, p. 277) wrote that "if the old man was characterized by his abhorrence of all things female, the new man was invigorated by his enthusiastic embrace of female roles and qualities." Edley and Wetherell (1997, p. 204) noted that the "new man represents the ideal partner for the modern, liberated heterosexual woman. He is a softer, more sensitive and caring individual, who also avoids sexist language, changes nappies and loves to shop all day for his own clothes." However, this adoption of "new man" behaviors requires some adjustments. Holt and Thompson (2004) noted that American working-class men are stuck between two traditional roles – the breadwinner and the rebel – and need to find compromises; for example, men handle household chores by recasting them as masculine power games (Holt and Thompson, 2004). A real man does not just take out the trash but instead invents a system so that he takes out the trash in a very efficient manner. Thus, by introducing competitiveness, the modern man was able to symbolically transform a stereotypical female activity into a masculine endeavor.

Contemporary men, when shopping for fashion and beauty products that have been traditionally reserved for female consumption, witness tension between the more traditionally masculine consumer roles that focus on rationality and function and the more feminized consumer roles that focus on body and appearance. By pursuing lifestyles or identities that may be perceived by his social groups as outside their traditional cultural boundaries, the contemporary male tends to feel vulnerable when using the marketplace to express his non-traditional gender identity (Tuncay and Otnes, 2008). By adhering to non-traditional gender identities, men are stepping outside their hegemonic gender norms (Lester, 2008). Their non-stereotypical actions may be considered problematic and may be censored or disciplined by others.

Thus, as noted earlier, this movement to "Newmannism" (De Gregorio-Godeo, 2006) did not take place in a smooth fashion for some men. In fact, Jackson *et al*. (2001), Benwell (2003), and De Gregorio-Godeo (2006) noted that the "feminization" and loss of traditional male values by the new man contributed to the re-creation of hegemonic and patriarchal views. De Gregorio-Godea (2006) labeled a view that he observed in male magazines as "Laddishness," "a community of lager louts celebrating the pleasures of sex with no strings attached and exhibiting purposefully neglected codes of menswear" (p. 52).

Newmannism and Laddishness represent two extremes in the masculinity continuum, and most men in-between found the extremes to create tension in portraying their gender roles. Bertrand and Davidovitsch (2008) described the conflict as occurring between desires to maintain a virile identity, in which the ideal of masculinity is linked to a sober and austere bourgeois aesthetic, and the desire to adhere to contemporary trends, in which there is a valuation of the aesthetic of body and fashion. Thus, to overcome the identity vulnerability and to create the right balance between masculinity and femininity, men are tending to construct their traditional male consumer identity of "achievement orientation" through consumption (Holt and Thompson, 2004; Ostberg, 2009; Zayer and Otnes, 2012). Men tend to be competitive (Ahlgren and Johnson, 1979; Olds and Shaver, 1980) and in order to maintain their traditional achievement orientation identity, they create a desire to achieve or win (Otnes and McGrath, 2001). This ability to win and defeat the marketplace while shopping not only fulfills their competitive trait but also results in "shopping success" for them. Thus, by being competitive and adhering to the ethic of achievement, men symbolically transform stereotypically female activities into masculine accomplishments and thus are able to socialize into appropriate gender roles that are commonly attributed to them, even in a feminine context.

We argue that, when subjected to shopping for fashion goods under perceived scarcity conditions, men experience tension and tend to follow hegemonic gender norms. The competitive trait and the traditional male role of achievement orientation motivate them to exhibit urgent buying behavior, which is defined as an urge or a desire of the consumer to buy the product right away, thus limiting consumers' freedom to delay a buying decision. Getting the scarce fashion product right away fulfills their desire to win the game against the retailer and other consumers, thus establishing their masculine identity of achievement orientation. Urgent buying behavior gives men a sense of accomplishment and symbolically transforms a stereotypical female activity into a masculine endeavor. Benenson *et al*. (2008) also suggest that men when faced with scarcity conditions tend to compete using riskier strategies. Urgent buying behavior is a risk-seeking behavior as it limits one's freedom to postpone the purchase to gather more information, indulge in comparison shopping, and seek advice.

Men when shopping tend to be more time conscious, tend to exhibit less patience, try to complete the shopping activity in the shortest possible time, are less likely to browse, and tend to seek only the items they intend to buy (Underhill, 1999; Nelson, 2000; Grewal *et al*., 2003; Bakewell and Mitchell, 2004). Such "masking behaviors" help deemphasize the consumption behavior men display to others and communicate that they are not too careful with their appearance (or else they may be viewed as effeminate) but at the same time are concerned about self-appearance. By adopting such urgent buying behaviors, men are able to complete the shopping process in the shortest possible time, thus masking their consumption behavior in the eyes of others and communicating that they are neither too careful nor sloppy about their appearance. Given that men's competitive traits tend to drive their hegemonic gender role and behaviors, we propose the following:

> *H1:* Under conditions of perceived scarcity, higher competitiveness leads to higher levels of urgent buying behaviors.

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In the next section, we review literature on how women construct their gender when shopping for apparel.

Femininity and fashion consumption

Shopping in Western societies has been closely linked with the female role and thus has been seen as a "feminine activity" (Oakley, 1976; Lunt and Livingstone, 1992). Women, especially those in younger age groups, have traditionally been expected to be concerned about fashion and beauty (Freedman, 1986). Sociocultural pressures regarding appearance management are stronger for women who are encouraged even in childhood to be interested in appearance and beauty (Chang *et al*., 2004). Paoletti and Kregloh (1989) characterized this focus as a duty for women. Thus, women are more positive about shopping as compared with men and therefore spend more time shopping (Zeithaml, 1985; Campbell, 1997; Allegra, 2002), visiting more shops (Campbell, 1997), and shopping more often (Dholakia, 1999). While not changing as dynamically as masculinity, femininity is also undergoing change, and we will investigate how women do gender under conditions of scarcity.

Women tend to have higher hedonic clothing purchase motivation than men (Chen-Yu and Seock, 2002) and hence view shopping as a pleasure-seeking activity related to the gratification of wants and desires (Campbell, 1997). Women tend to apply a leisure frame when shopping, especially for clothes. They relate shopping activity with enjoyment and recreation and tend to reject any purely instrumental or utilitarian frame of reference. Women find it easier than men to obtain enjoyment from shopping, especially for clothes, for two reasons (Lunt and Livingstone, 1992). First, female fantasies tend to revolve around what they look like, and clothes and adornment play a major role. Second, given that women and not men are socialized into being an aesthetically skilled gender, women tend to celebrate their skill and prowess in shopping. Thus, women view the process of shopping as a hedonic activity (Bakewell and Mitchell, 2004; Mitchell and Walsh, 2004; Chiu *et al*., 2005; Davis *et al*., 2014) and an escape (Fischer and Arnold, 1990), and they shop for reasons other than just obtaining a specific item (Jackson *et al*., 2011).

Given that studies suggest that shopping has been regarded primarily as a feminine activity, women are more likely to engage in cognitive deliberation when processing shopping decisions (Otnes and McGrath, 2001). Thus, they are more likely to make rational purchase decisions by evaluating information resulting from browsing, comparison shopping, reference group recommendations, and advertisements (Coley and Burgess, 2003). Further, women when shopping are more involved in the purchasing process (Slama and Tashchian, 1985), seek information more actively before making purchases (Zeithaml, 1985), have a higher tendency to engage with the products, and think through purchase decisions and their possible consequences (Coley and Burgess, 2003).We argue that, when subjected to shopping for fashion goods under perceived scarcity conditions, women tend to follow hegemonic gender norms that focus more on appearance management. Given that they have higher hedonic motivation, interaction with the store environment and different products is enjoyable and resonates with their traditional gender role of a gatherer (Noble *et al*., 2006). Further, women tend to adopt risk-averse strategies when faced with scarce conditions (Benenson *et al*., 2008; Croson and Gneezy, 2009) and, thus, are more likely to make more rational decisions by indulging in information seeking, comparing, and engaging with products (Coley and Burgess, 2003). As women have more hedonic shopping motivations, possessing scarce products rather than buying them right away will make them feel satisfied with having won a shopping game. Hence, women subjected to perceived scarcity are motivated to adopt in-store hoarding (possessing an item and keeping it for herself while shopping, although uncertain as to whether she wants to buy it or not) and in-store hiding (intentional act of removing the desired product from other consumers' sight, thus increasing the odds of being able to buy the desired item later) behaviors (Byun and Sternquist, 2008, 2011).

These behaviors will help women fulfill their hegemonic gender identity and thus will be considered appropriate. Such behaviors will also facilitate possessiveness, loss aversion behavior, variety seeking, information seeking, and active engagement with the product, thus helping women regain their behavioral freedom by allowing more time for search and making the whole process exciting and enjoyable. Given that female hedonic motivation tends to drive their hegemonic gender role and behaviors, we propose the following:

> *H2:* Under conditions of perceived scarcity, higher hedonic motivation leads to higher levels of in-store hoarding behaviors.

> *H3:* Under conditions of perceived scarcity, higher hedonic motivation leads to higher levels of in-store hiding behaviors.

METHOD

Research context

Fast fashion retailers like Zara, H&M, and Forever 21 create a perception of scarcity within their stores, and we focus on this perceived scarcity as the context in which we investigate gender differences. These retailers are able to communicate both limited-quantity scarcity and limited-time scarcity (Aggarwal *et al*., 2011) by offering high inventory turnover, stocking limited quantities of products per style, and deliberately manipulating merchandise on the retail floor. These communications psychologically create "perceived scarcity" in the minds of the consumers. Perceived scarcity is defined as the perception of product shortage experienced by consumers for a particular style or size that is strategically created by the retailer (Gupta and Gentry, 2015). It is further suggested that when consumers perceive scarcity to be strategically created by the retailer, they may indulge in deviant behaviors like in-store hoarding and in-store hiding.

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Sample and data collection

Data were collected from students at a large midwestern university in the USA. The student sample was purposely chosen as the overall target market for fast fashion brands is fashion-conscious young men and women aged 18–24 years (Watson and Yan, 2013). The students completed an in-class survey for course extra credit. In the introduction, the students were asked if they, within the past year, had shopped in fast fashion stores like Zara, H&M, and Forever 21. Although these fast fashion brands are international brands (Zara headquartered in Spain, H&M headquartered in Sweden, and Forever 21 headquartered in USA), they are well-known brands in the Midwest. If the participants answered yes, they were then asked to list their favorite store and, based on experience with that particular store, were asked to complete the rest of the survey. Three hundred and forty-six usable surveys were collected (response rate = 66%). The age of the participants varied from 19 to 24 (M = 21.55, SD = 2.20) with 254 female respondents and 92 male respondents. Although approximately 250 men filled the survey, most of them had to be discarded because of missing data due to mens' unfamiliarity with fast fashion and their lack of interest in fashion. Most of the respondents were juniors (35.8%), seniors (24.1%), or sophomores (22.5%).

Measurement

The measures of this study were adopted or modified from the extant literature. To measure perceived scarcity, a three-item scale developed by Gupta and Gentry (2015) was adopted. Similarly, scales developed by Gupta and Gentry (2015) were used to measure urgency to buy and in-store hiding behavior. These scales have been developed using a mixed-method approach and utilizing procedures common to marketing scale development (Churchill, 1979). To measure in-store hoarding, items were modified from a scale developed by Byun and Sternquist (2008). Also, items measuring competitiveness and hedonic shopping motivation were incorporated to measure how these traits behave across genders. Competitiveness was measured using a four-item scale developed by Mowen (2004). To measure hedonic shopping motivation, items were adapted from a scale developed by Arnold and Reynolds (2003). All items were measured with a 7-point Likert-type scale. Table 1 presents specific scale items employed by this study.

Data analyses

Structural equation modeling (SEM) allows for tests of theoretical propositions in non-experimental data and is also used to assess the reliability and validity of the model measures. Given its various advantages, SEM was used to conduct data analyses for this study. Following a two-stage analysis (Anderson and Gerbing, 1988), we tested the measurement model with confirmatory factor analysis (CFA) and the hypothesized relationships with SEM with the maximum likelihood method using LISREL 8.80 (Jöreskog and Sörbom, 2006). Model fits of CFA and SEM were evaluated by comparative fit index (CFI), non-normed fit index (NNFI), and root mean square error of approximation (RMSEA) (Hair *et al.*, 2009).

The effect of gender was tested with a multi-group approach using SEM estimates (Hair *et al.*, 2009). For multi-group modeling, the rule of thumb is 90–100 observations per group (Kline, 2005). In the study, both male and female groups met that threshold requirement. Before comparing causal paths across groups, we tested the measurement model invariance between male and female groups based on the following: (i) the invariance of the factor structure and (ii) the equality of factor loadings (Suh and Yi, 2006). For the structural model, we first generated the base model where all paths are free to vary across two groups. Then, we tested the chi-squared difference between the baseline model (all estimates were made free) and the constrained model (a specific path was fixed) in order to determine whether the particular path is significantly different between the two gender groups.

Measurement model

First, the results of CFA support the measurement model that contained six constructs measured with 24 observed variables. The measurement model showed a good model fit: $\chi^2(14) = 20.43$, $p > 0.05$, CFI = 0.979, NNFI = 0.940, and RMSEA = 0.0518 (Hu and Bentler, 1999). Second, the construct validity of the latent constructs was evaluated based on the convergent and discriminant validity of the measurement model (Table 2). Convergent validity was supported as (i) all path weights were significant ($p < 0.001$), (ii) the composite reliabilities of all constructs were greater than the minimum criteria of 0.70 (Nunnally and Bernstein, 1994), and (iii) the average variance extracted (AVE) ranged from 0.51 to 0.80, greater than the threshold value of 0.50 (Fornell and Larcker, 1981). Last, discriminant validity was confirmed as the AVEs for each construct were larger than the shared variances (i.e., squared correlation coefficients) between all possible pairs of constructs (Fornell and Larcker, 1981). We thus conclude that our measurement model has satisfactory convergent and discriminant validity as well as item reliability.

Before comparing group differences by gender, we first examined whether the measurement model is equivalent for the two groups. First, we tested configural invariance to check equality of the factor structure between the two groups, and it was supported by good model fit indices: $\chi^2(12) = 179.135$, $p > 0.05$, CFI = 0.973, NNFI = 0.969, and RMSEA = 0.0285. We also tested the metric invariance to check the equality of factor loadings between the groups by imposing the constraint that factor loadings of all the measurement items for the two groups are equal (i.e., full metric invariance model). The chi-squared difference between the non-restricted model and the full metric invariance model was insignificant: $\chi^2(15) = 75.510$, $p > 0.05$.

Structural model and hypotheses testing

Structural equation modeling was used to examine the hypothesized relationships among constructs, and the results indicate that the structural model has a good model fit: $\chi^2(14) = 20.43$, $p > 0.05$, CFI = 0.979, NNFI = 0.940, RMSEA = 0.052. To test gender differences, we first compared the means of all constructs between male and female respondents. The t-test results specifically suggest men to be more competitive ($M_{\text{men}} = 4.76$)

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Table 1. Measurement model: scale items for latent variables

Latent construct	Items	Standardized estimate	Composite reliability
Perceived scarcity	While shopping in this store		
	I found that this store sells out fast and rarely resells the same merchandise product	0.63	0.814
	I think that the retailer intentionally creates the product scarcity by limiting product quantity for a particular size/style	0.84	
	I think that product scarcity was strategically created by store policies	0.83	
Competitiveness	I enjoy competition more than others	0.72	0.827
	I feel that it is important to outperform others	0.74	
	I enjoy testing my abilities against others	0.69	
	I feel that winning is extremely important	0.80	
Hedonic shopping motivation	Shopping is truly a joy for me	0.89	0.913
	While shopping, it truly feels like an escape for me	0.87	
	While shopping, I enjoy being immersed in exciting new products	0.61	
	Compared to other things done, the time spent shopping is truly enjoyable	0.90	
	While shopping, I have a good time because I am able to act on the "spur-of-the-moment"	0.54	
	During shopping, I feel the excitement of the hunt	0.77	
	During shopping, I feel a sense of adventure	0.80	
Urgency to buy	While shopping in this store, when I found products of interest,		
	I developed a desire to buy them immediately	0.51	0.710
	I had an urge to buy them even though I had not intended to purchase them	0.71	
	I couldn't resist buying them	0.74	
In-store hoarding	While shopping in this store,		
	When I found products of interest in this store, I hurried to grab them and kept them to myself while shopping	0.67	0.753
	Sometimes when I selected a product at this store, I did not want to put it down although I was not sure if I would but it or not	0.73	
	I have carried more products than what I intended to buy	0.73	
In-store hiding	When I have found products of interest in this store,		
	I have purposely hidden them within the store in secret hiding places so other customers might not buy them	0.86	0.94
	I have hidden them somewhere where they did not belong originally	0.88	
	I have put them in completely different section where nobody else could see	0.91	
	I have hidden items so that they would be available to me latter	0.92	

as compared with women ($M_{women} = 4.35$) ($t = 2.78$, $p < 0.05$). Women on the other hand tend to have higher hedonic motivation ($M_{women} = 5.19$) as compared with men ($M_{men} = 3.60$) ($t = -11.74$, $p < 0.001$) (Table 3).

We further examined whether the parameter estimates of structural paths were statistically different between men and women. The initial baseline model in which all model parameters were set free (Model 1) was compared with the

Table 2. Discriminant validity

	1	2	3	4	5	6
1. Perceived scarcity	0.64					
2. Competitiveness	0.15	0.72				
3. Hedonic shopping motivation	−0.02	0.08	0.70			
4. Urgency to buy	0.12	0.15	0.32	0.66		
5. In-store hoarding	0.02	0.08	0.56	0.40	0.67	
6. In-store hiding	0.21	0.11	0.34	0.26	0.42	0.55

Note: Diagonal entries show the average variance extracted by the construct; off-diagonal entries represent the variance shared (squared correlation) between constructs.

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Table 3. *t*-Test results on gender differences

Variable		Mean	t	Sig (two-tailed)	Mean difference
Urgency to buy	Men	5.33	2.01	0.045	0.22
	Women	5.12			
In-store hoarding	Men	3.50	−10.44	0.001	−1.45
	Women	4.95			
In-store hiding	Men	2.12	−2.98	0.003	−0.53
	Women	2.65			
Competitiveness	Men	4.76	2.78	0.006	0.41
	Women	4.35			
Hedonic shopping motivation	Men	3.60	−11.74	0.001	−1.59
	Women	5.19			

*$p < 0.05$;
**$p < 0.01$.

restricted model in which a particular path was fixed to be equal across gender groups (Model 2). We then evaluated the chi-squared difference between these two models and examined modification indices to detect the paths whose estimates are significantly different between two groups. The results indicated that after controlling for perceived scarcity, the path from competitiveness to urgent buying behaviors was significantly stronger for men than women (women = 0.414 vs. men = 0.617; $\chi^2_d(1) = 25.75$, $p < 0.001$). Further, the path from hedonic motivation to in-store hoarding was significantly stronger for women than men (women = 0.491 vs. men = 0.217; $\chi^2_d(1) = 26.60$, $p < 0.001$). Similarly, the path from hedonic motivation to in-store hiding was significantly stronger for women than men (women = 0.465 vs. men = 0.252; $\chi^2_d(1) = 26.20$, $p < 0.001$).

DISCUSSION

"Gender is being continually (re)created through performance of gender roles during our daily activity, performance that also creates and maintains masculine and feminine identities" (Maclaran *et al.*, 2009, p. 715). Using competitiveness as the indicant of masculinity and hedonism as the indicant of femininity, this study examines how, in scarce fashion conditions, men and women, by "doing" respective gender roles, are able to maintain their masculine and feminine identities. Our results provide insight into what men do to maintain their male gender norms as they venture into domains that had previously belonged to women. We suggest that even though the new man is interested in consuming fashion, he still does not step outside the expected hegemonic gender norms and exhibit in-store hoarding or in-store hiding behaviors. Instead, his competitive trait and achievement orientation motivate him to exhibit urgent buying behavior as it helps him adapt to a gender role more commonly attributed to him, such as not being seen browsing for apparel. Urgent buying behaviors in these scarcity conditions help the contemporary man balance the tension between the more traditionally masculine consumer roles that focus on rationality and function and the more feminized consumer roles that focus on body and appearance. Urgent buying behaviors help men adopt a "safe zone" and mask the feminization of their masculinity. By completing the fashion shopping in the shortest time possible, the new man is able to deemphasize his consumption behavior and further communicate that he is not too careful with his appearance but at the same time is concerned about it.

Further, this study also helps us to understand how women behave and construct their identities when subjected to these unique scarcity conditions. Instead of indulging in urgent buying behaviors, women tend to exhibit in-store hoarding and in-store hiding behaviors. Given that society expects women to be concerned about beauty and appearance, they are expected to indulge in shopping activities. Thus, by indulging in in-store hoarding and in-store hiding behaviors, women are able to adapt to a gender role more commonly attributed to them. Women tend to have higher hedonic motivation, and in-store hoarding and in-store hiding behaviors give them an opportunity to interact with different products, thus adding to their overall shopping experience. These behaviors help them to evaluate information and compare shopping alternatives, thus helping them to make rational decisions. In-store hoarding and in-store hiding help women get more involved in the purchase process, seek information more actively before making purchases, and facilitate higher engagement with the products, thus fulfilling their need to think through purchase decisions and their possible consequences. These behaviors are also able to satisfy their shopping traits like risk aversion, possessiveness, variety seeking, information seeking, and active engagement with the product, thus helping them regain their behavioral freedom and make the whole process exciting and enjoyable.

IMPLICATIONS

The main research implication for scholars is that men and women tend to adopt different behaviors that help them socialize into their respective gendered roles. Therefore, gender studies, especially the ones studying masculinity, should place careful attention in understanding the behaviors that men tend to adopt as they may reflect the changing hegemonic masculine framework.

From a managerial perspective, this study suggests that men and women construct their respective genders differently, so retailers need to implement distinct strategies to cater to these two consumer groups. Given that men are more competitive, which leads to urgent buying behaviors, stores

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should allow men to feel like winners by incorporating achievement-oriented tactics. Store signage and displays communicating competitive and achievement-oriented themes should be incorporated to arouse the competitive trait in men. For example, incorporating communication like, "Grab the deal – Be the winner" within the store might be a wise strategy to arouse the competitive trait in men, thus further leading to urgent buying behaviors and enhancing sales. Further, retailers can create easier ways to help men in their shopping process and exhibit urgent buying behaviors. Retailers should continue to design rational store layouts where similar-type items (e.g., sports, casual, and classic) are grouped together to create an easier and more logical path, allowing men to navigate efficiently. Providing men with an easier way to find, select, and purchase items can also create high store loyalty as they can easily exhibit some aspects of their traditional identities.

However, the communication of perceived scarcity by fast fashion stores encourages deviant behaviors like in-store hoarding and in-store hiding among women. Behaviors like in-store hiding could be detrimental to the store's financial performance, as hiding a product inhibits its sale. Stores can avoid such behaviors among women by providing an organized store ambience, responsive store employees, and short-term holding policies. Stores should create organized and clean store ambience as women in such environments are then less likely to exhibit in-store hiding behaviors owing to the fear of being caught (Gupta and Gentry, 2015). Stores that look quite cluttered and disorganized with inflexible or no holding policies have high levels of hoarding (and no doubt hiding, given the high correlation between the two practices) (Byun and Mann, 2011). Also, stores should train their sales associates to be efficient and responsive in retrieving hidden products. Similarly, holding products for a very limited time period may reduce hiding behaviors as such a practice will help women have more time to make a final decision. It further helps women construct their feminine identity besides satisfying their hedonic motivation as the holding of a product by the retailer will help women have a sense of possession but, at the same time, give them freedom to seek more information and make comparisons. Retail brands can also control in-store hiding by designing and placing sophisticated ID tags on clothes to track them, thus facilitating the product retrieval process. By providing the preceding recommendations, we hope retailers may be able to provide different strategies for men and women, thus not only helping men and women construct their respective gender identities but also boosting the sales for these fast fashion brands.

LIMITATIONS AND FUTURE RESEARCH

Despite its contributions, this study comes with its own challenges. One limitation of this research is that it employs a survey format to understand the situational construction of male and female identity gender roles under conditions of scarcity. While this method is useful in generalizing results and generating a bigger sample size, at times, it fails to provide a detailed picture of how men and women are able to construct their identities by behaving differently. Therefore, a qualitative inquiry could provide a more realistic understanding of how men and women construct their different identities in these unique conditions of perceived scarcity. Recently, scarcity messages have also been used successfully by online retailers like overstock.com. Prior literature suggests behavioral differences among men and women when shopping online (Garbarino and Strahilevitz, 2004). Henceforth, examining how men and women construct their gender roles in a virtual context would also be insightful. Further, it will be interesting to examine if, in the same product category, men and women behave differently with different product types. For example, it will be worth exploring if men react differently to scarcity created for coats as compared with scarcity created for other apparel. Recently, stores such as H&M have launched standalone stores for men only (Ormrod, 2013). These standalone stores represent gendered spaces, and research needs to be conducted to understand how men and women construct their identity in these gendered spaces.

In conclusion, given there is a dearth of work examining the differential experiences of men and women in various exchange situations and in various cultural settings, we hope that this study provides the impetus for more work that might shed additional light on how gender is constructed within and through our daily activities.

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How do shoppers behave online? An observational study of online grocery shopping

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ABSTRACT

The pace of online shopping revenue growth means it is important for retailers and manufacturers to understand how consumers behave online compared with their behaviour in brick and mortar stores. We conducted a study in which the detailed behaviour of 40 shoppers was screen recorded while they each undertook an online shopping 'trip'. The shopping trip comprised purchasing a basket of 12 commonly bought grocery categories at one of two major retailers. The shoppers were all inexperienced in online grocery shopping. Results show that online grocery shopping is fast, even for these consumers who were new to it – half of the online shoppers spent less than 10 seconds purchasing from a category. This result is very similar to that of past studies in physical stores. Indeed, half of all the 12 item-shopping trips took less than 10 minutes. Also, most purchases were made from the first category page displayed in the retailer's online store. Shoppers also consistently used the default display options chosen by the retailers but used a combination of navigational tools to find their products. We conclude that online shoppers do not behave differently from those offline in terms of time spent or effort expended. Online shopping, in the grocery context at least, seems to primarily reflect a desire for time efficiency on the part of the shopper. In that regard, online shopping seems very similar to in-store shopping. The study begins the job of documenting shopper behaviour into this new channel and provides practical knowledge for retailers and manufacturers. Copyright © 2015 John Wiley & Sons, Ltd.

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KEY WORDS Online shopping; Shopper behaviour

Multichannel retailing is now the norm, with online being heralded as the fastest-growing distribution channel. The use of the Internet to buy goods and services varies considerably across categories, countries and even areas within a country (urban vs. rural); however, the overall trend is clear – consumers are buying more online. For example, the number of online shoppers overall in the USA is predicted to surpass 200 million, or over 60 per cent of US households, in 2015 (Statista, 2015). In the UK, online retail sales are predicted to reach £52.25bn in 2015 (Moth, 2015) and reached $AU19–24bn annually in Australia during 2009 (Australian Bureau of Statistics, 2012).

Online grocery, although still quite small, is on the rise around the world with an annual growth rate of 14 per cent over the last 5 years (Halzack, 2015). Retail Times (Briggs, 2014) reports over half of UK households buy groceries online at least occasionally, although Mintel reports the rate of purchasing growth is slowing (Mintel, 2015). Large US supermarkets are rolling out online stores (e.g. Perez, 2015). European retailers are building more pick-up points to accommodate higher rates of online grocery buying (Ecommerce News, 2015). In Australia, the location for this study, online grocery is growing rapidly (Food Magazine, 2015) from a low base. China is seeing major investments and new business models emerging with options like same-day delivery coming into play (Bell, 2015). Online shopping will become more important as populations grow older, communication technologies develop and consumers become more familiar with it.

Despite the growth and importance of online grocery, little is known about how people shop online for groceries and how online shopping patterns compare with in-store shopping behaviour. Shopper's behaviour could potentially be affected, in terms of how they navigate and choose, by differences in channel characteristics. Observing *what* consumers do online is a fundamental step towards understanding the online channel, and more knowledge in this arena will benefit academic researchers and industry (retailers and manufacturers). The focus of this study pertains to the *time* new online shoppers take to shop for groceries online.

Past research regarding online shopper behaviour has mainly focused on comparing purchasing data from offline and online retailers. For example, Degeratu *et al.* (2000), using separate matched samples from online and offline modes in three categories, examined the effects of a set of attributes upon choice in online and offline environments. The authors found brand names are more important online than offline in some categories, and that price promotions have stronger effects online than in traditional, brick and mortar supermarkets. Second, Danaher *et al.* (2003) examined matched samples of consumers; comparing the observed loyalty in each channel (online, in-store) with a baseline formed from the Dirichlet model of repeat purchase. The study found large brands enjoy higher loyalty online than they theoretically should, while the effect was reversed for small brands. Andrews and Currim (2004) utilised the same data as Degeratu *et al.* (2000) and found online consumers have higher loyalty to brands than in-store purchasers, are less price sensitive and preferred buying larger pack sizes. A

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subsequent study of the same consumers, both online and offline, confirmed higher brand loyalty, higher loyalty to pack size and lower price sensitivity when purchasing online (Chu *et al.,* 2010). Finally, Dawes and Nenycz-Thiel (2014) found there was little difference in the loyalty levels between online and offline purchasing regardless of the brand size and type but found that private labels enjoyed slightly higher market shares online. In summary, past research has identified some differences in purchasing data from the two shopping environments. However, a search of the literature revealed no prior studies that have examined the way in which consumers shop online – such as the time taken to select categories and how quickly shoppers learn to navigate through a supermarket's site. This is the aim of this study.

Research on shopper navigation in physical stores singles out one important variable to consider, namely, time. Shoppers are found to be extremely efficient in the way they find the few items they need among thousands of stock keeping units (SKUs) stocked, following habitual routes and using simple cues to navigate and localise the products they are accustomed to buying (Sorensen, 2009a). How does online shopping compare with offline when it comes to the time spent to find a category or brand, or the overall duration of a 'shopping trip'? Past research suggests that the online environment potentially reduces the amount of time required to shop (Bellman *et al.,* 1999; Huang and Oppewal, 2006; Morganosky and Cude, 2000; Ramus and Nielsen, 2005; Sorensen, 2009a). Researchers mainly point to save-able shopping lists and retailer site cookies as ways to make it easier for shoppers to find what they have previously purchased. However, research on online navigation lacks detailed observation of actual shopper behaviour to compare and contrast it with what is known about in-store buying. This paper extends past work on shopper behaviour by observing duration times and search behaviour of a sample of online shoppers.

This paper provides the following contributions. First, it extends research on shopper navigation patterns to the online environment and proposes a straightforward research method and associated set of metrics. Second, the findings provide benchmarks on what to expect in terms of navigation patterns in the online environment. Finally, it provides initial evidence on the importance of time and efficiency of online shopping, building on past knowledge about how shoppers behave in brick and mortar stores.

BACKGROUND, LITERATURE REVIEW AND RESEARCH PROPOSITIONS

Category selection times

The in-store literature reports that the time taken for grocery shoppers to select a brand in a category is very quick. Typically, consumers are found to take between 9 and 17 seconds on average to make a selection (e.g. Cobb and Hoyer, 1985; Hoyer, 1984; Le Boutillier *et al.,* 1994). Laboratory studies on time taken to select show similar results to in-store observation. A summary of studies on shopper category selection times is shown as part of Table 1.

Table 1 shows there has been considerable research into in-store shopping selection and duration times. There is little in the way of research on shopping duration in the online world. However, general online search activities have been shown to be limited with online shoppers visiting just 1.2 book sites, 1.3 CD sites and 1.8 travel sites on average in a month (Johnson *et al.,* 2004). Given these patterns, online shopping for items in specific grocery categories is unlikely to involve extended search and comparison. That said, it is unlikely to be quicker than in-store shopping (e.g. actually selecting a category and not including in-store traversal), which, as stated, is quite brisk. Little evidence exists as to online shopping times, and it is an important question for retailers and researchers. Therefore,

Table 1. Summary of previous in-store shopping duration studies

Authors	Market–country	Key aspects of study
Category selection times		
(Cobb and Hoyer, 1985; Dickson and Sawyer, 1990; Hoyer, 1984; Le Boutillier *et al.,* 1994; Leong, 1993)	Groceries, USA and Singapore	Average single item selection times were 9 to 17 seconds. Grand mean is 12 seconds across these studies.
(Chandon *et al.,* 2009; Macdonald and Sharp, 2000)	Groceries, USA and Australia	Product selection times are quick and comparable in a laboratory with in-store environments.
Shopping trip durations		
(Hui *et al.,* 2009; Larson *et al.,* 2005; Silberer *et al.,* 2007; Sorensen, 2010; Sorensen *et al.,* 2013)	Groceries, Europe and USA	Average supermarket shop durations using RFID technology ranges from 13 to 48 minutes.
(Arndt and Gronmo, 1977; Collier, 2011; Goodman, 2008; Park *et al.,* 1989; Sorensen *et al.,* 2013; Thomas and Garland, 1993)	Groceries, USA, Australia, NZ and Norway	Average supermarket shop durations using all other methods from 14 to 31 minutes.

RFID, radio frequency identification.

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RQ1: How much time will shoppers take to select a grocery item from a category using an online shopping site?

Shopping trip duration – online and in-store

Comparing shopping time durations across online and in-store modes is not necessarily straightforward. First, previous research has found shopper profiles differ between the two channels, and so one would need to disentangle shopper type from shopping mode. Some studies have suggested men prefer online shopping more than women (Souitaris and Balabanis, 2007; Wood, 2011), but many others have found online purchasing skews towards women (Freeman, 2009; Hand *et al.,* 2009; Montgomery *et al.,* 2004; Morganosky and Cude, 2000; Raijas, 2002). The varied results arise because some studies such as Wood (2011) ask about preference for shopping mode, while others examine the actual proportions of each gender that buy online (e.g. Montgomery *et al.,* 2004; Morganosky and Cude, 2000).

Overall, for grocery products, the majority of online and offline grocery shoppers are female, but online grocery shoppers tend to be younger and have higher incomes. However, this information on shopper profiles provides little detail about behavioural differences between shoppers in-store and online.

Past studies suggest shoppers shop online to save time and increase convenience (Merz, 2013; Richmond, 1996; Sorensen, 2009b). Online shopping avoids travel and parking, physical store navigation and contending with other shoppers. Just how much time would be saved shopping for groceries online compared with in-store shop is unknown. Estimates of average supermarket shop durations (i.e. time spent in the store) range from 13 to 40 minutes in studies using radio frequency identification and 14 to 31 minutes using other methods (e.g. observation), as shown in Table 1. Shopping trip time should be highly contingent on the number of items purchased, but many of the studies reported in Table 1 do not report on items purchased. Three do, however – Silberer *et al.* (2007) reported an average of 13 minutes, while Hui *et al.* (2009) reported an average of 48 minutes, with both studies having a similar average number of items purchased of between 6 and 7. Anic and Radas (2006) reports a 42-minute average (35 minutes of shopping and navigation and 6 minutes of waiting) for 10–20 items on average. The reason for such large difference in the average shop durations is unknown. It may be caused by data collection differences (observation, Bluetooth and radio frequency identification), the location of the study (USA, Australia and Europe) and/or the size of the store. Even though these studies have a wide range of average shopping trip durations, they all suggest the time taken per category is at least 2 minutes, and in the Hui *et al.* (2009), the total time of 48 minutes for seven categories equals approximately 6 minutes in the store, for each category bought. After deducting time taken at checkout, the time spent in-store per category is realistically several minutes overall. This is a large figure compared with that of studies showing category selection times of 9–17 seconds (e.g. Cobb and Hoyer, 1985; Hoyer, 1984; Le Boutillier *et al.,* 1994). The reason is probably as Hui *et al.* (2009) report: a significant proportion of time in-store is not actually selecting merchandise, it is moving through the store. An online shopping ‘trip’ should therefore be much quicker than an equivalent in-store trip (leaving aside travel and checkout time) because it does not require physical movement through a retail space. However, no empirical studies report online trip durations. Therefore,

RQ2: How long will consumers take to select a basket of items as part of an online shopping trip?

New shopper learning

Next, we consider purchase and navigation durations of new online supermarket shoppers as they become familiar with it. One could argue new online shoppers, who have not purchased groceries using this channel (but who are familiar with the retailer), will quickly adapt to the new environment. The reason for this expectation is that much about the basic task, namely, selecting brands on a website, is familiar to consumers. They know the brands they have bought before and usually have several brands with which they are familiar. Therefore, product selection times and site navigations times will decrease quickly. An alternative argument is that new online shoppers will take quite some time to adapt. They will require many shops to decrease category selection and navigation times. Arguably, the difference in the online world, with products listed in a vertical array and not a ‘shelf’ as in a store, as well as the inability to physically inspect the good, may take time to adapt to. We posit that the former scenario is more likely, as consumers have an incentive to learn, evidence shows they do usually learn quickly (Hoch and Deighton, 1989); and the task to be learned is not highly complex. Quite often consumers do not engage in lengthy decision-making processes (Olshavsky and Granbois, 1979) and instead revert to satisficing. Indeed, shoppers may well be quicker by the end of a single shopping trip than they were at the start of it. This would be consistent with in-store behaviour where shoppers shop faster towards the end of their trips (Sorensen, 2012). However, there is no empirical evidence on this basic aspect of online purchasing. We therefore pose the following:

RQ3: Will the time taken by an inexperienced shopper to select a grocery item decrease over the course of a shopping trip?

Extent of supermarket category page viewing

When purchasing in-store, the customer has an entire product category arrayed on the shelves in front of them. A shopper uses physical movement and visual recognition to select a particular brand from potentially dozens of other brands. As mentioned previously, this is usually a quick process measured in seconds. In contrast to the physical store, online supermarkets handle categories with large numbers of brands by only displaying a small portion of them on a page. A shopper cannot visually scan an entire category to find a brand. Depending on their display setting or navigational tool effectiveness, to view all the brands, they must typically ‘scroll’ through the pages of the supermarket site. Shoppers

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may not wish to take time to view many pages in a category, as it is inefficient and it is likely the case for many shoppers that they have a repertoire of acceptable brands, so they could feasibly encounter one of them within a few pages of search. There is little empirical research on online page views, but Breugelmans *et al.* (2006) found items located on the first page of a category yielded higher purchases (possibly impacted by stores including key selling offers there). This finding suggests the number of pages viewed is likely to be small, but documenting this important issue is still required. Therefore, we pose RQ4:

RQ4: To what extent will online grocery shoppers peruse multiple pages of offerings within any given category?

Last, few studies have addressed how online shoppers interact with online store formats and tools. These include tools such as the ability to sort, that is, change the way in which items for sale are sorted on the page (Breugelmans *et al.,* 2006), the number of items displayed to the shopper on each page (Lohse and Spiller,) and navigational tools – how the shopper uses the interface to move through the website (Waite, 2006). We believe that online shoppers who are new to the format will have little incentive or knowledge to change the default display settings. This expectation is consistent with studies cited earlier that show shoppers generally behave as if time minimisation is important. However, given there is little knowledge about this specific behaviour online, we aim to document the incidence of shoppers keeping the 'sort by' and items per page default settings, and the proportion of selections made after using site navigational tools.

METHOD

Data and observational procedure

To address the research questions, a sample of 40 consumers who had not previously undertaken online grocery shopping was recruited between November 2012 and January 2013.

The sample was recruited via snowball and convenience sampling techniques. The sample comprised members of the general public. The sample consisted primarily of younger women, reflecting the online shopper profile (Andrews and Currim, 2004; Burke, 2002; Fram and Grady, 1997; Hansen, 2005; Hui and Wan, 2009; Lokken *et al.,* 2003; Montgomery *et al.,* 2004; Morganosky and Cude, 2000; Raijas, 2002). Respondents were rewarded for participating with a \$30 gift card. The 40 consumers were asked to purchase from two Australian online supermarkets a list of 12 grocery items. The sample size is comparable with in-store studies of shopper navigation (e.g. Silberer *et al.,* 2007). The number of purchases totals over 900, again comparable with that in past in-store work such as Dickson and Sawyer (1990).

Respondents were informed that their task was to conduct two online shops. They were required to purchase one item from each of the 12 categories on a pre-prepared shopping list (i.e. 'buy' one but without actually proceeding to an online checkout). The order of each respondent's shopping list was randomised. They were asked to complete the task as they normally would, as if they were actually purchasing for their consumption. The rationale for 12 items is that it is the mean average number of items bought on a supermarket trip (Anic and Radas, 2006; Baron and Lock, 1995; Schmidt, 2012; Sorensen, 2011; Sorensen, 2012). While online baskets tend to be larger than those in-store, it is also likely the case that new online shoppers will buy modest basket sizes initially. Also as infrastructure such as pick-up points grows with no delivery charges, smaller online shops are likely to increase. Therefore, 12 items was considered an appropriate shopping list.

While purchasing online was unfamiliar to respondents, the task – buying groceries – was quite realistic. The approach should therefore provide a high degree of external validity. Respondents did not actually purchase the items, as this would have involved them entering payment details during a process in which their activity was screen recorded. However, numerous studies have successfully employed purchasing scenarios not involving actual payment (e.g. Ehrenberg and England, 1990; Janiszewski and Cunha, 2004; Yang and Lynn, 2014).

The 12 categories were selected so as to vary the number of available SKUs per category (that being bananas offered three options while yoghurt offered 241). The variety of categories was diverse (i.e. pet products, packaged and non-packaged food, beverages and health products). We included four pet food categories (both wet and dry cat and dog food) to introduce variation into the shopping task, requiring more choices in one complex category compared with single items in most of the other categories. Australia has one of the highest rates of pet ownership in the world (Australian Veterinary Association, 2013). Also, using pet food and milk provides bulky as well as non-bulky categories. Last, bananas were included, as they are one of the most popular supermarket items (Bellos, 2015; Collier, 2014).

The shopper's choices, durations and site navigation were recorded using video screen-capturing software (MAC QUICKTIME PLAYER PRO, Apple Inc. Location 1 Infinite Loop in California, United States). Video recording has been used for in-store observational research in the past Scamell-Katz (2004, 2012), finding quite different results to what shoppers claim if asked. All shops were conducted on either a MacBook Pro or iMac, at a central location.

The time taken to select a product was calculated as the time between the correct category being located on the online supermarket website and the time at which an item was added to the cart. Total shopping trip duration was calculated as the time between when the respondent had successfully logged on to the online supermarket website and when the 12th category had been selected and added to the cart. Multiplying shoppers by retailers and categories gives a maximum of $40 \times 2 \times 12 = 960$ possible brand selection observations. In 30 of the shopping 'trips', the shopper only purchased 11 items. To facilitate the overall reporting of equivalent trip durations for our 12-item basket, for these 30 missing trips, we therefore added 1/11th of the time elapsed calculated from that shopper.

RESULTS

We report the results in four parts. First, we describe how long shoppers take to select an item from a product category and

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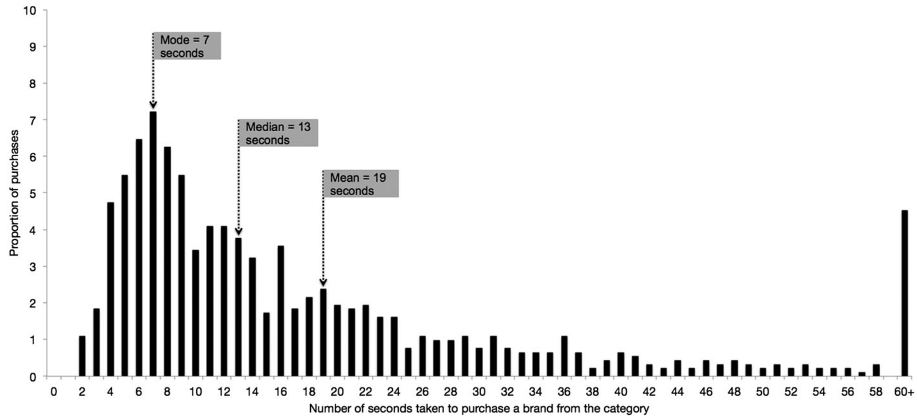

Figure 1. Percentage of all shoppers selecting all categories *x* seconds.

compare the results with published work on in-store shopping. Second, the total shopping trip duration of these online shoppers is reported and compared with in-store behaviour. Third, we examine the extent to which shoppers became quicker at the shopping task. Last, we examine shoppers' use of navigation tools.

RQ1: The time online shoppers take to select an item

The distribution of item selection times is shown in Figure 1. The graph shows the proportion of selections and the number of seconds taken to purchase a brand from the category. The modal time taken to select an item from a category was 7 seconds, the median was 13 seconds and the mean was 19 seconds.

The three measures of central tendency show that the data are positively skewed. The mean is inflated by some very long category selection times of over 1 minute. Therefore, the mean selection time reported in previous in-store studies may also be similarly skewed. So while the mean is useful for comparison, the percentage of selections made under *x* seconds provides additional insights to the actual purchase behaviour of online shoppers. Over all the categories, 42 per cent of selections were made in 1 seconds or less, and in 5 per cent of cases, the selection took 60 seconds or more.

Table 2 shows the selection times for each category. The broad pattern is that regardless of category, online shoppers make selections quickly with means ranging from 14 to 29 seconds. Of all selections, 75 per cent were made within 24 seconds.

The overall answer to RQ1 is that online shopping selection times for grocery items are quick, with a mean of 19 seconds and a median of 13 seconds. Comparing the results of this online study with those conducted in-store show that shoppers behave in a similar manner across the two shopping methods. In-store studies report mean selection times for items in a category of 9 to 17 seconds (as per Table 1) with an overall mean across them of 12 seconds per category. This figure is somewhat under the mean of 19 seconds here. The slightly higher online duration reported here is probably attributable to the respondents being new to online supermarket shopping and being unfamiliar with the formats. Also, some of the categories were perhaps less familiar to some respondents, even though they were all highly bought categories. Our average of 19 seconds is somewhat inflated by some outliers, as is the case in past in-store studies such as Hoyer (1984).

RQ2: Shopping trip duration

The mean average time taken to select a basket of 12 items is just over 11 minutes; the median is just under 10 minutes. Of all 12-item basket shops, 50 per cent took less than 11-minutes, as per Table 3. The median and mode are less than the mean, so these online shopping trip durations are positively skewed. Next, the mean average time to make a selection from a category in this study is 19 seconds, so multiplying by 12 categories produces 228 seconds or 3.8 minutes of actual selection time over the course of the shop.

Table 2. Average selection times for all shoppers and each category

	Mean	Median	Mode	Standard deviation	Min	Max	75% of purchases ≤ *x* seconds
Shampoo	29	18	8	25	2	116	39
Toothpaste	24	16	8	24	2	109	36
Chocolate bars	21	14	7	21	3	114	26
Wet cat food	21	10	7	27	3	183	23
Wet dog food	19	13	6	22	2	165	22
Dry dog food	19	14	5	18	2	120	19
Microwavable rice	17	11	5	17	3	106	22
Pasta sauce	17	11	4	15	2	90	20
Yoghurt	16	10	7	16	3	75	20
Dry cat food	15	12	8	12	2	64	19
Milk	15	12	4	12	2	70	18
Bananas	14	11	9	10	2	52	18
Average	19	13	7	18	2	105	22

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Table 3. Basket of goods (total duration – averages)

Online shop	Mean	Median	Mode	Standard deviation	% < 10 minutes	% > 20 minutes
Seconds	679	596	477	338	50	10
Minutes	11.3	9.9	7.9			

The remainder, indeed two-thirds of the trip time in this study, is time taken to navigate between categories – (11.3 – 3.8) = 7.5 minutes. That is, the shoppers spent more time going between categories than they did selecting items when at the category.

Now, we endeavour to compare these results with those from in-store studies.

Many studies reporting average in-store times do not report the number of items purchased. However, by considering several specific studies and relating category selection times to overall trip durations, we can still make insightful conclusions.

As mentioned, the average items purchased per trip is 12 (e.g. Sorensen, 2012). The average grocery in-store time duration across a range of studies is as follows. The US Time Use Institute reports an average of 39 and 42 minutes for men and women, respectively, not including travel time. Anic and Radas (2006) report an average of 35 minutes not including travel time or checkout, for an average of ‘10–20 items’ (p.36). Silberer *et al.* (2007) report a 13-minute duration not including travel, but including checkout time, for an average basket of seven items. Personal communication with the first author of that study revealed checkout time was normally quite short. The figure suggests the approximate time to purchase a 12-item basket would be, conservatively, 20 minutes. Hamrick *et al.* (2011) report an average of 44 minutes not including travel time (basket size not reported). Prud’homme and Boyer (2005) report figures of 48–58 minutes, 57 per cent of which is travel, suggesting time in-store is 20–25 minutes including checkout. These studies imply an average 12-item basket would take approximately 30 minutes to purchase, and of that, arguably 10 minutes could be spent at the checkout, leaving 20 minutes of selection and in-store navigation. The mean average of our online results of 11.3 minutes is therefore considerably quicker than what it would be in-store.

RQ3: Decrease in time taken to shop over time

Selection times became quicker as the shoppers shopped. The average time taken to purchase the first category from the first retailer was 33 seconds, declining to 15 seconds by the 12th purchase. When the shopper commenced purchasing from the second retailer, their first category selection in that retailer was again 33 seconds and again declined to 15 seconds by the 12th purchase. The decline in selection times across the 24 category selections per shopper (12 in each of two retailers) is graphed in Figure 2. Shoppers took one or two selections in the second retailer to again become accustomed to the different layout but again learned to quickly select. Therefore, consumers can apparently learn to shop quickly for groceries from a specific online site quite readily. This finding also suggests that experienced online supermarket shoppers would buy even faster than the results reported here or that online shoppers also increase their purchasing speed towards the end of their trips as happens in-store (Sorensen, 2012).

RQ4: Number of pages viewed

The average number of pages viewed was very low, averaging just one, as shown in Table 4. Of the selections, 85 per cent were made after viewing one page of a product category, and only 2 per cent were made after five or more pages were viewed. We calculated the correlation between the category figures for per cent of selections being made having viewed one page, and the mean selection time of that category. The correlation is −0.92, indicating that lower selection time is closely related to viewing fewer pages as one might expect.

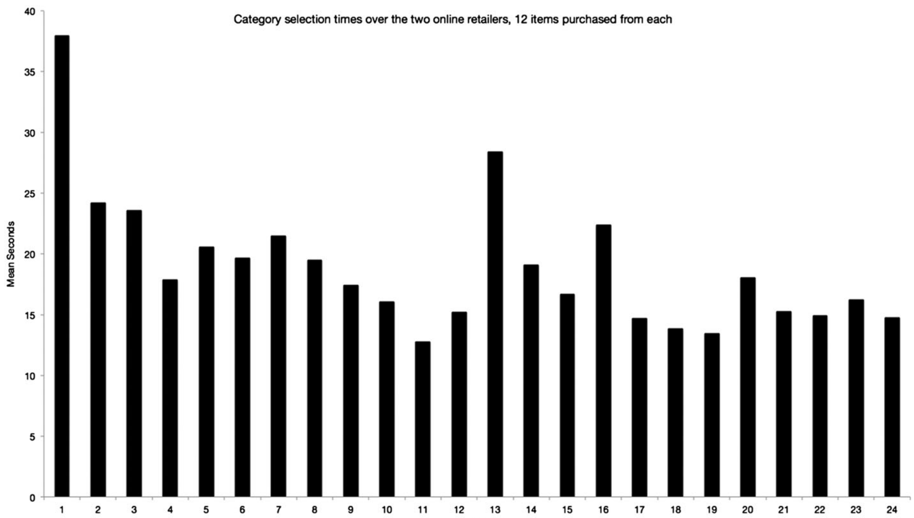

Figure 2. Average time taken to select items online.

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Table 4. Average pages viewed and selection page for all shoppers and each category

	Pages viewed			Selection page	
	Mean	1 page (%)	≥5 pages (%)	1st page (%)	≥5 pages (%)
Shampoo	2	62	10	73	9
Yoghurt	1	86	5	90	3
Wet dog food	1	86	3	86	1
Toothpaste	1	76	0	89	4
Wet cat food	1	82	1	82	1
Pasta sauce	1	84	1	95	1
Microwavable rice	1	88	1	91	1
Chocolate bars	1	88	1	91	1
Dry dog food	1	87	1	90	0
Dry cat food	1	91	0	96	1
Milk	1	89	0	96	0
Bananas	1	96	0	96	0
Average	**1**	**85**	**2**	**89**	**2**

The correlation between the per cent of selections made on the first page and the mean selection time is −0.87. In addition, nine in 10 items purchased were selected on the first page of the category.

These results indicate online shoppers, in this sample at least, indicate a fairly low willingness to extensively search for brands over multiple pages of a retailer's site. They are prepared to select a brand they see very early on in any particular category. One may argue this result of very low rates of page search could be an artefact of shoppers not actually purchasing the items, therefore, exhibiting lower search than what would occur in real paid-for shopping. However, the results are very consistent with past in-store studies. Those studies have found very low rates of shoppers undertaking actions such as picking items up – for instance Hoyer (1984) reported shoppers usually only handled one item, as did Dickson and Sawyer (1990). Our result that shoppers viewed very few pages online is consistent with the truncated examination of brands in-store.

Extent to which shoppers customise presentation and navigation options

The final piece of analysis concerns shopper's usage of the two online website customisation options: sort options and items displayed per page plus the usage incidence of the two navigational tools (i.e. the search bar or product category menu). The percentage of shoppers who used the 'default' options for sorting and the number of items per page was expected to be high. Previous studies had found very few shoppers change these options (Breugelmans *et al.,* 2006; Wu and Rangaswamy, 2003), and as a whole, very few social media or peer-to-peer network users change from default options either (Good and Krekelberg, 2003; Gross and Acquisti). Table 5 shows that for this study, in the pursuit of finding and selecting one item from 12 product categories, the default sort by option was used 87 per cent of the time and the default number of items displayed per page was relied upon 96 per cent of the time. In addition, six in 10 items that were successfully found and selected were performed so through the use of the search bar navigational tool. In short, shoppers relied on the default website settings in the majority of cases.

DISCUSSION

We conducted a novel study in which the online navigation of 40 grocery shoppers was recorded moment by moment. The overall finding is that online grocery shopping behaviour appears very much like in-store shopping behaviour. This sample of shoppers, given a realistic online shopping task, (i) selected brands in a category very quickly; (ii) completed their basket of shopping in approximately 11 minutes, quicker than in the physical store, which we attribute to the absence of physical store traversal here; (iii) learned to navigate and make category selections quite quickly; (iv) viewed very few online 'pages' of brands per category; and (v) generally did not customise online options such as the sort order for brands or the number of items per page.

Results of this study can benefit both retailers and brand managers. First, for retailers, the study underscores to retailers that shoppers want to see their favourite brands quickly. This outcome is not necessarily intuitive; for example, retailers may be tempted to show on the first-page brands currently on deal, or brands for which they earn higher margins. The results here suggest that such strategies, which would likely increase shopper navigation time, may not be wise. While the choice of which brands to display on the first

Table 5. Sort by items per page and navigational tools

	Sort by		Items per page		Navigational tool	
	Default	Non-default	Default	Non-default	Search	Menu
Average (%)	87	14	96	4	61	39

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page is obviously very important, having easy-to-use search options and making it easy for shoppers to discern where their preferred brand(s) might be located in the page arrays are also highly relevant. For brand managers, the results show how valuable a first-page position is for brands on an online grocery store site.

The results here also suggest that retailers such as supermarkets should be able to create ‘norms’ for their online sites, that is, expected levels of category selection duration and shopping trip duration. The findings suggest that some categories take longer to buy from than others; for example, shampoo had longer selection times and more page views possibly because it is bought less often per year (and so brand familiarity may be lower) or has more SKUs than in other categories used here.

The shoppers in this study, who had never bought online groceries, learned quickly. This observation is good news for online retailers – it suggests if they can induce consumers to merely try their online offering, they will quickly learn how to use it. The obstacle to take up of a retailer’s site is therefore probably not that shoppers find it difficult to use but, rather, it might simply be a lack of familiarity or reluctance to trial for the first time. Inducements for trial would appear to be a highly relevant tactic for online retailers.

Next, as stated earlier, shoppers do not appear to wish to hunt for the best buy. Indeed, they do not even look at many of the options. That fact, taken in conjunction with the knowledge that consumers are polygamously brand loyal (Ehrenberg *et al.,* 2004), means that if they see one of the brands they know and use, it will likely be bought. Visual recognition in a fast-paced task in a crowded environment is crucial. Therefore, there is still a strong rationale for brand managers to use mass-reach advertising to help consumers to recognise their brands in the world of online shopping. Without brand familiarity, a brand is unlikely to be bought, as the results in this study are very consistent with the idea that consumers readily satisfice and select one of a repertoire of known and acceptable brands – and will not usually engage in extensive search or perusal.

Overall, this review of previous in-store studies and the experimental online situation shows great similarity between offline and online grocery buyers in terms of selection times. Buyers in-store already massively restrict their choice to a few options, and offline buyers appear to do the same, taking little time to select their brands. While category selection times were slightly longer in this online study compared with in-store, the overall shopping trip was much quicker. Whether or not online shopping is intrinsically better for shoppers is still open to debate, because while the time spent selecting a basket of goods was much quicker than in-store and the shopper does not incur travel time, online shopping often necessitates a delivery fee or a subsequent pick-up from a retail location.

Directions for future research

This exploratory study revealed a number of useful insights into online grocery shopping, and it presents some opportunities for further research. The market studied was Australia, for which online grocery is in a growth phase (Food Magazine, 2015). The approach could be extended to other countries in which online grocery shopping is growing, to determine if the same broad pattern of results holds elsewhere. Next, the study here focused on grocery, as it is typically purchased as a basket of goods. There are other product categories for which consumers often buy multiple items together, such as hardware and cosmetics. Categories such as these might require longer periods of time for comparison and consideration. Insights into the extent of search, selection times and page views of such categories would be of interest to researchers in electronic commerce generally as well as marketing scholars who focus on shopping behaviour and brand choice. There is also a need for more observational research of actual purchases in this area. Next, the study used the same 12-item basket for all shoppers so that the duration times for all shoppers and categories could be meaningfully summarised. However, future research should compare how shopping duration varies according to different types of baskets.

Another potentially fruitful avenue is to combine the approach used here with its focus on duration times, with the technological advance of eye-tracking technology (Pieters and Warlop, 1999; Tobii, 2013) to ascertain the extent to which shoppers actually peruse items on an online shopping ‘page’. This study found very brief selection times and low numbers of page views, but the question arises as to what is actually looked at on the pages from which items were selected – is it the case that shoppers look at everything on those few pages they actually look at and select one item or do they even confine their attention to specific items on the one or two pages per category they peruse?

BIOGRAPHICAL NOTES

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What to diffuse in a gender-specific store? The effect of male and female perfumes on customer value and behaviour

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ABSTRACT

Sensory marketing can be an efficient way to involve consumers in the store environment. Diffusing a pleasant ambient scent that matches with the store setting is often used to create pleasant shopping experiences. The aim of this study is to extend scent marketing research: (i) by examining the effect of pleasant ambient scent on the different dimensions of customer value; and (ii) by exploring whether product-scent incongruity can have a positive effect on consumer evaluations. A field experiment with 182 participants showed that a pleasant gender-incongruent ambient perfume positively influences different dimensions of customer value as compared to the absence of a perfume. Moreover, a gender-incongruent perfume also leads to a more positive evaluation of the play, product excellence, and social dimension of customer value as compared to a gender-congruent perfume. A pleasant gender-congruent ambient perfume, on the other hand, only has a positive effect on the aesthetic dimension of customer value as compared to the absence of a perfume. The observed ambient scent effects do not differ between men and women. These results are in contrast with existing literature. However, an explanation for this undocumented effect can be found in the mate attraction theory. Copyright © 2015 John Wiley & Sons, Ltd.

INTRODUCTION

Pleasant ambient scents can positively influence consumers' affective, cognitive, and behavioural reactions (e.g. Bitner, 1992; Gulas and Bloch, 1995; Bone and Ellen, 1999). However, an important moderator of these scent effects is the congruity between the scent and the store's offerings. Previous research has found that pleasant ambient scents improve consumer evaluations and approach behaviour more when the scent is congruent with the setting than when the scent is incongruent with the setting (e.g. Bone and Jantrania, 1992; Bosmans, 2006; Spangenberg *et al*., 2006; Doucé *et al*., 2013). However, based on the mate attraction theory, this study suggests that incongruity does not always have a negative effect on consumer evaluations.

Furthermore, the effect of scents on customer value was studied. To date, little attention has been paid to this effect. This is a critical gap in the literature because customer value has been recognized as one of the most significant factors in the success of organizations (e.g. Gallarza *et al*., 2011; Woodruff, 1997). Although previous studies already examined the effect of scents on particular facets of customer value, such as perceived product quality (e.g. Spangenberg *et al*., 1996), this is—to the best of the authors' knowledge—the first study that examines the effect of scents on all customer value types at the same time.

Thus, the aim of this study is to extend scent marketing research: (i) by examining the effect of pleasant ambient scent on the different dimensions of customer value; and (ii) by arguing that incongruity does not always have a negative effect on consumer evaluations.

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PLEASANT AMBIENT SCENT EFFECTS

The store atmosphere, which can be influenced by scents, music, and other sensory elements, is an important aspect of the shopping experience. There is ample evidence that atmospheric cues within the store environment have a positive effect on consumer reactions and evaluations (e.g. Sherman *et al*., 1997; Turley and Milliman, 2000; Briand and Prass, 2010; Brengman *et al*., 2012). Numerous scholars have shown positive pleasant ambient scent effects on consumers' attention, experienced pleasure, evaluations of the store (environment), evaluations of the products, time spent in the store, intentions to revisit the store, and other approach behaviour (e.g. Spangenberg *et al*., 1996; Morrin and Ratneshwar, 2003; Doucé and Janssens, 2013). The theoretical paradigm used for studying ambient scent effects on shopping behaviour is the stimulus–organism–response paradigm (Mehrabian and Russell, 1974; Gulas and Bloch, 1995). The ambient scent functions as the stimulus that triggers affective and cognitive consumer reactions. Subsequently, these reactions lead to approach or avoidance behaviour (i.e. a positive or negative reaction, respectively).

The current study examines the effect of pleasant ambient scents on customer value. Customer value has been widely recognized as an essential ingredient for organizational success (Slater, 1997; Woodruff, 1997; Sweeney and Soutar, 2001). Furthermore, it has been proven to be a key antecedent of customer satisfaction, (re)purchase intentions, word of mouth (Bolton and Drew, 1991; Zeithaml *et al*., 1996; Cronin *et al*., 2000; Lai *et al*., 2009), and ultimately the long-term profitability of the organization (Anderson *et al*., 1994; Kamakura *et al*., 2002). Overall, customer value plays a key role at the heart of all marketing activities and, as a result, deserves the attention of every marketing researcher (Holbrook, 1999).

In this study, the definition and conceptualization of customer value developed by Holbrook (1999) were followed.

He defines customer value as, “an interactive relativistic preference experience” (Holbrook, 1999: 5). This implies that customer value (i) involves an interaction between a subject (a customer) and an object (a product, a service or a store); (ii) is comparative, personal, and situation-specific; and (iii) embodies a preference judgement (Holbrook, 1999). In line with this conceptualization, Holbrook (1999) suggests a framework based on various value types. The Holbrook approach was chosen for the following reasons. First, Holbrook’s approach is considered to be “the most comprehensive approach to the value construct because it captures more potential sources of value than do other conceptualizations” (Sánchez-Fernández *et al*., 2009: 97). Second, Holbrook’s typology conceptualizes value from an experiential point of view, which is interesting for analysing shopping incidents as those are highly experiential in nature (Babin *et al*., 1994; Jones *et al*., 2006; Rintamäki *et al*., 2007). Third, Leroi-Werelds *et al*. (2014) compared different approaches for measuring customer value and based on their guidelines, Holbrook’s approach is the best choice for this study.

SCENT (IN)CONGRUITY

When diffusing a pleasant ambient scent, the congruity of the scent with the store and/or its products is an important factor to take into account (Gulas and Bloch, 1995; Mitchell *et al*., 1995; Doucé *et al*., 2013). Congruent scents are scents that are expected in a particular setting because the scent and the setting are thematically matched. The scent can function as a primer, which means that once the consumer perceives the scent, it may start an automatic knowledge activation process. The scent then activates stored knowledge, making certain concepts temporarily more accessible. So, congruent scents increase the accessibility of attitudes and memories associated with the store, its products, and its brands, resulting in more elaboration and more inferences about the products (Mitchell *et al*., 1995; Spangenberg *et al*., 2006). For example, Spangenberg *et al*. (2006) showed that a masculine ambient scent diffused in a men’s clothing department improves consumers’ evaluations of and approach behaviour toward men’s clothing as compared to the presence of a feminine ambient scent and vice-versa. On the other hand, incongruent scents can lead to cognitive interference, because the information activated by the incongruent scent does not match with the product and the decision task.

The current study argues that in certain cases, incongruent scents can have positive effects on consumer responses. Spence *et al*. (2014) already indicated that incongruent environments can lead to positive consumer responses in specific and unique places. In line with Spangenberg *et al*. (2006), the effects of a gender-(in)congruent scent diffused in a men’s and women’s clothing store are studied. To make sure that the scents are perceived as much as possible as either masculine or feminine, we opted to use specific masculine and feminine scent blends. This is in contrast with the study of Spangenberg *et al*. (2006) in which singular scents were used (i.e. rose maroc and vanilla, which are perceived as masculine or feminine, respectively). Based on congruity effects, one could expect that a masculine perfume in a men’s clothing store and a feminine perfume in a women’s clothing store lead to more positive evaluations than when no scent is diffused in the particular clothing store.

Contrary to Spangenberg *et al*. (2006), this study argues that the presence of a gender-incongruent perfume also leads to more positive evaluations than when no scent is diffused. This study works with masculine and feminine perfumes, and because perfumes are important in sexual communication, they can be seen as mating cues (Milinski and Wedekind, 2001; Capparuccini *et al*., 2010). For example, in a focus group study conducted by Janssen *et al*. (2008), men revealed that a woman’s scent influences their sexual arousal. Additionally, a recent study based on self-questionnaires indicated that women use makeup, including perfume, either for camouflage or for seduction (Korichi *et al*., 2008). Furthermore, previous research showed that exposure to mating cues (e.g. pictures of sexy women) triggers a mating goal in men (Maner *et al*., 2007). Earlier research also demonstrated that human scents can work as a signal in mate selection. For example, Miller and Maner (2010) showed that men displayed higher levels of testosterone when smelling a t-shirt worn by a woman near ovulation compared to smelling one worn by a woman far from ovulation. In addition, Rantala *et al*. (2006) found that women near ovulation evaluated male scents as more attractive than women in other menstrual cycle phases.

Human-mating research states that there are sex differences in mate preferences (Feingold, 1992). Two robust findings are that men express a greater preference for mates who are physically attractive and young because these cues are related to fertility and health, whereas women express a greater preference for mates who are wealthy and ambitious, as these cues are related to financial prosperity and social status (Saad, 2007). These differences are explained by the parental investment theory, which states that men prefer women who are fertile to increase the chance of gene transmission and women prefer men who can secure their offspring survival (Trivers, 1972). However, mate preferences are also dependent on the temporal context of the relationship (Buss and Schmitt, 1993). For example, women find physical attractiveness more important for short-term relationships (Urbaniak and Kilmann, 2003).

Human-mating involves two sub-goals: mate selection and mate attraction (Janssens *et al*., 2011). The mate selection goal means that men and women screen opposite (or same) sex individuals, and this allows them to detect suitable mates. The mate attraction goal involves demonstrating one’s own mating value to the opposite sex. For men, the attraction goal leads them to signal their physical attractiveness (short-term relationships) and/or their access to financial resources (long-term relationships). For example, Roney (2003) found that after visual exposure to potential mates (i.e. mating cue), men attached more importance to ambition and social status. Similarly for women, the mate attraction goal activation leads them to signal their physical attractiveness. When this goal becomes activated, people will evaluate the stimuli that help them reach their goal more positively (Ferguson, 2008),

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and it is also more likely that they approach the goal-relevant stimuli (Ferguson and Bargh, 2004). So, the opposite-sex perfume (i.e. gender-incongruent scent) diffused in the store can function as a mating cue, activating the mate attraction goal. This goal leads consumers to evaluate the clothing store more positively because the (chosen) clothes, and therefore the store, help consumers signal their mating value. Taken the above into account, the following hypotheses are proposed:

H1: The presence of a pleasant gender-congruent ambient perfume will lead to a more positive evaluation of customer value as compared to the absence of a pleasant ambient perfume.

H2: The presence of a pleasant gender-incongruent ambient perfume will lead to a more positive evaluation of customer value as compared to the absence of a pleasant ambient perfume.

Because it is unclear whether the congruity or the incongruity effect prevails, the following research question is formulated:

RQ1: Is the effect of a pleasant gender-congruent ambient perfume on customer value different from the effect of a pleasant gender-incongruent ambient perfume?

METHOD

Scent selection

Most perfumes are categorized as either masculine or feminine (Lindqvist, 2012). To make sure that the perfumes used in the main study are indeed perceived as masculine or feminine, and to ensure that the chosen perfumes are equally pleasant and stimulating,[1] a pretest was conducted. Sixteen perfumes (eight feminine and eight masculine), which are frequently used in practice and marketed by Scents, an olfactory marketing firm in Belgium, were selected. Participants were 50 respondents (25 women and 25 men) between 18 and 30 years old. They were asked to sniff the 16 perfumes and to evaluate the masculinity/femininity, pleasantness, and stimulating nature of the perfumes. Masculinity/femininity of the perfumes was measured by a 3-item, 7-point semantic differential scale. Items were masculine/feminine, unfeminine/feminine, and unmasculine/masculine (Friedman and Dipple, 1978). The pleasantness and stimulating nature of the perfumes were measured by a 7-point semantic differential (i.e. unpleasant/pleasant, unaroused/aroused). The perfumes were presented in random order (on a cotton-tipped stick in a dark glass bottle), and respondents were instructed to sniff the perfumes as many times as they liked while completing the survey. Between successive perfumes, participants smelled ground coffee to restore their scent palette (Krishna *et al*., 2010). This technique is frequently used in the fragrance industry to neutralize the odours in the nose, preventing contamination from one scent to the next.

The aim of the pretest was to find a feminine and masculine perfume that was equally pleasant and stimulating. Of the 16 perfumes, *Hendrik* was chosen as the masculine scent and *Dreams* as the feminine scent. The *Hendrik* perfume is a fruity scent with cinnamon and sandalwood facets (based on a Hugo Boss perfume). The *Dreams* perfume is a green, fruity scent which contains aspects of Muscat and black currant. Further elements are white musk, vanilla, jasmine, lilies, and violets. Based on the overall sample, *Hendrik* ($M = 5.20$, $SD = 1.78$, $t(49) = 4.76$, $p < .001$) and *Dreams* ($M = 5.14$, $SD = 1.59$, $t(49) = 5.07$, $p < .001$) were found to be pleasant scents, significantly different from the scale midpoint of 4. Moreover, the *Hendrik* perfume and the *Dreams* perfume differed on masculinity/femininity ($M_{\text{Hendrik}} = 2.87$, $M_{\text{Dreams}} = 5.34$, $t(49) = -7.00$, $p < .001$), but did not differ on pleasantness ($M_{\text{Hendrik}} = 5.20$, $M_{\text{Dreams}} = 5.14$, $t(49) = .20$, $p = .84$) and stimulating nature ($M_{\text{Hendrik}} = 4.62$, $M_{\text{Dreams}} = 4.50$, $t(49) = .41$, $p = .69$). When the perfumes were analysed separately for male and female participants, similar results were found. Male participants found *Hendrik* ($M = 5.00$, $SD = 1.80$, $t(24) = 2.77$, $p = .01$) and *Dreams* ($M = 4.84$, $SD = 1.65$, $t(24) = 2.55$, $p = .02$) pleasant scents, significantly different from the scale midpoint of 4. For men, the *Hendrik* perfume and the *Dreams* perfume also differed on masculinity/femininity ($M_{\text{Hendrik}} = 3.52$, $M_{\text{Dreams}} = 4.99$, $t(24) = -3.81$, $p = .001$), but did not differ on pleasantness ($M_{\text{Hendrik}} = 5.00$, $M_{\text{Dreams}} = 4.84$ $t(24) = .39$, $p = .70$) and stimulating nature ($M_{\text{Hendrik}} = 4.64$, $M_{\text{Dreams}} = 4.00$, $t(49) = 1.93$, $p = .07$). Likewise, female participants found the *Hendrik* perfume ($M = 5.40$, $SD = 1.78$, $t(24) = 3.93$, $p = .001$) and the *Dreams* perfume ($M = 5.44$, $SD = 1.50$, $t(24) = 4.79$, $p < .001$) more pleasant than the scale midpoint of 4. For women, the *Hendrik* perfume and the *Dreams* perfume also differed regarding masculinity/femininity ($M_{\text{Hendrik}} = 2.23$, $M_{\text{Dreams}} = 5.69$, $t(24) = -6.61$, $p < .001$) but did not differ on pleasantness ($M_{\text{Hendrik}} = 5.40$, $M_{\text{Dreams}} = 5.44$ $t(24) = -.09$, $p = .93$) and stimulating nature ($M_{\text{Hendrik}} = 4.60$, $M_{\text{Dreams}} = 5.00$, $t(49) = -.85$, $p = .40$).

Design, participants, and procedure

A field experiment was conducted in two clothing stores located in the same building in a small European city. The target groups of the clothing stores are young adults. The male clothing store was located on the ground level, whereas the female clothing store was located on the first floor. The study applied a between-subjects design with three scent conditions: no perfume (i.e. control condition), a gender-congruent ambient perfume (i.e. feminine scent in female clothing store and masculine scent in male clothing store), and a gender-incongruent ambient perfume (i.e. feminine scent in male clothing store and masculine scent in female clothing store). The ambient perfumes were diffused throughout the entire store making use of an *Aerostreamer 1000* fragrance

[1]Note: For the remainder of the paper, it is important that the reader knows that in Dutch, arousal can have two meanings: a more neutral meaning of stimulation and a meaning more related to the concept of sexual arousal. In scent marketing research, arousal is usually translated to stimulation to avoid the sexual connotation. As a result, stimulation measured in the pretest cannot be seen as an indication of sexual arousal.

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appliance. Based on the principle of warm evaporation (electrical), this appliance works by heating the liquid scent on a metal plate, and subsequently this fragrance is distributed by a fan. No special promotions were launched during the experiment.

Participants were 182 shoppers (91 men and 91 women). The interquartile range of the participants' age lies between 20 and 38 years, which matches with the target group of the stores. Male shoppers only evaluated the male clothing store and female shoppers only evaluated the female clothing store because they are the specific target group for the stores. When the shoppers left the store, they were asked to complete a survey containing evaluation variables and demographics. There were 61 participants (31 men and 30 women) in the control condition, 61 participants (30 men and 31 women) in the congruent scent condition, and 60 participants (30 men and 30 women) in the incongruent scent condition.

Dependent variables

The main dependent variable in this study was customer value. However, we also included satisfaction and repurchase intention as key outcomes of customer value (see Figure 1 for overall model), which is in line with the customer value literature (e.g. Cronin *et al*., 2000; Leroi-Werelds *et al*., 2014). As previously mentioned, the typology suggested by Holbrook (1999) was followed to conceptualize and operationalize customer value. Based on previous studies using the Holbrook typology (Gallarza and Gil-Saura, 2006; Sánchez-Fernández *et al*., 2009; Willems *et al*., 2012; Leroi-Werelds *et al*., 2014), seven value types were used to operationalize customer value: product excellence, service excellence, efficiency, aesthetics, social value, play, and altruistic value. When applying Holbrook's typology, it is important to note that the different value types may have either a reflective or a formative measurement model. This distinction has important consequences for the contents of the scale (Jarvis *et al*., 2003). For the reflective value types, existing validated scales were used (e.g. altruistic value: Du *et al*., 2007; excellence: Oliver, 1997; efficiency: Ruiz *et al*., 2008; social value: Sweeney and Soutar, 2001; play: Petrick, 2002) and adapted to the setting at hand. Regarding the formative value types (i.e. service excellence, aesthetics, and efficiency), it is important that all aspects in the construct's domain are adequately covered (Diamantopoulos and Winklhofer, 2001). To generate items, the literature was reviewed to include as many facets of the construct's domain as possible (e.g. Willems *et al*., 2012).

To assess customer satisfaction, Wirtz and Lee's (2003) 11-point scale was used. Repurchase intention was measured based on the work of Zeithaml *et al*. (1996). All individual items are listed in Table 2a and Table 2b and are evaluated on 7-point Likert scales unless otherwise indicated.

Analytical approach

Given the use of both formative and reflective measurement scales, a Partial Least Squares approach to Structural Equation Modeling (PLS-SEM) was used (cf. Hair *et al*., 2011; Hair *et al*., 2014). To analyse the effects of the experimental manipulations (i.e. no perfume, gender-congruent perfume, gender-incongruent perfume) on the metric variables in the model, the procedure outlined by Streukens *et al*. (2010) was followed. Regarding the PLS-SEM analyses, the statistical significance of all estimates was assessed by calculating bootstrap percentile confidence intervals based on 5000 bootstrap samples (Preacher and Hayes, 2008).

Next, a MANOVA was conducted to assess whether or not the effect of pleasant ambient perfume differs as a function of gender (follow-up tests). Although it is technically possible to conduct these follow-up tests using PLS-SEM, the number of respondents per gender category is too limited to warrant a sufficient level of statistical power for this technique (see also Hair *et al*., 2014).

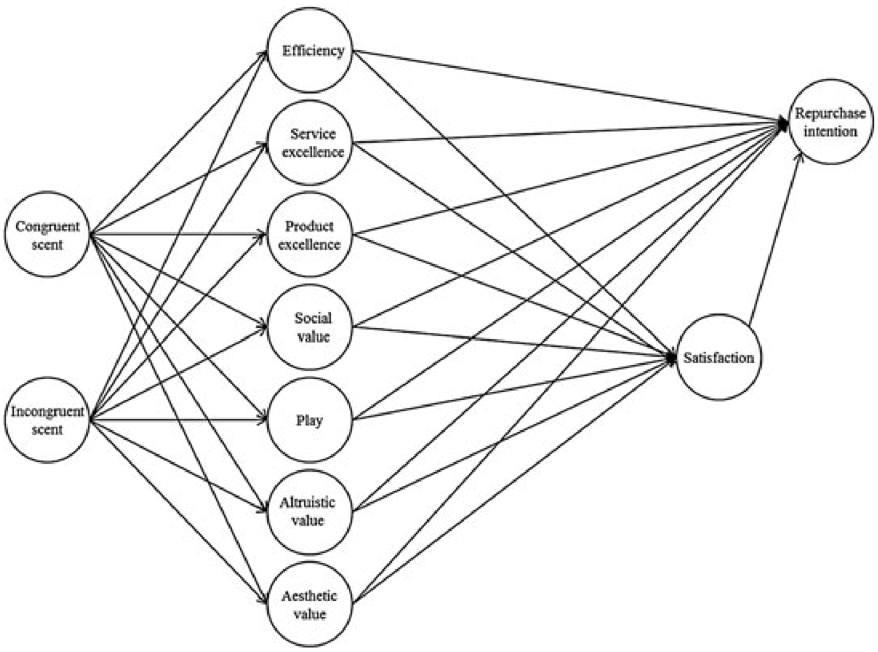

Figure 1. Structural model.

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RESULTS

Descriptive and bivariate correlations

Table 1 presents the mean, standard deviation, and bivariate correlation coefficients of the metric constructs employed within this study.

Psychometric properties

In line with MacKenzie *et al.* (2005), unidimensionality, internal consistency reliability, within-method convergent validity, and discriminant validity were assessed for the reflective constructs under study, whereas item significance and discriminant validity were assessed for the formative constructs. The empirical results related to the assessment of the psychometric properties are presented in Table 2a and Table 2b.

Starting with the reflective constructs, the results provide evidence for each construct's unidimensionality based on the procedure suggested by Sahmer *et al.* (2006). Based on Nunally and Bernstein (1994) guidelines, internal consistency reliability is evidenced as all the composite reliability estimates exceed the recommended cut-off level of 0.70. Within method-convergent, validity is supported as all average variance extracted values are above 0.50 (Fornell and Larcker, 1981). Finally, comparison of the average variance extracted value to the squared inter-construct correlation coefficients (cf. Fornell and Larcker, 1981) indicates the presence of discriminant validity.

Regarding the formative constructs, the main concern is the significance of the indicator weights. The results in Table 2b reveal that not all indicator weights are significantly different from zero. Although from a purely econometric perspective these items are candidates for deletion, they were kept in the measurement model as deleting them may alter the meaning of the construct (Diamantopoulos and Winklhofer, 2001). Furthermore, for the formative constructs, discriminant validity was evidenced as all the confidence intervals of the relevant latent variable correlations did not include an absolute value of 1 (Anderson and Gerbing, 1988).

Structural model assessment

Table 3 reports the results pertaining to the structural model. In general, the model reveals a statistically significant fit to the data for all endogenous constructs, except product excellence and service excellence, as evidenced by the percentile bootstrap confidence intervals constructed around the endogenous constructs' R^2 values (Ohtani, 2000). Turning to the individual structural model coefficients, the results indicate that compared to the absence of a perfume, a gender-congruent ambient perfume only has a significant impact on the value dimension aesthetics. In contrast, as compared to no perfume, a gender-incongruent ambient perfume has a significant impact on all value dimensions except product excellence and service excellence.

To provide an answer on the formulated research question (i.e. Is the effect of a pleasant gender-congruent ambient perfume on customer value larger than the effect of a pleasant gender-incongruent ambient perfume?), the bootstrapped path coefficients were compared. The results of this analysis indicate that the effect of a gender-incongruent ambient perfume is larger than the effect of a gender-congruent ambient perfume for play: $\Delta\beta = .18$, 95% CI [.02; .46]; and for social value: $\Delta\beta = .20$, 95% CI [.02; .36]. Furthermore, a similar pattern was found for product excellence, but the difference was only marginally significant: $\Delta\beta = .16$, 90% CI [.02; .30].

In terms of the outcome variables satisfaction and repurchase intention, the results show that not all value dimensions play a significant role. Whereas only the value dimensions play and product excellence have a direct impact on both satisfaction and repurchase intention, the value dimensions efficiency and service excellence solely influence satisfaction. Finally, the results also support the commonly evidenced relationship between satisfaction and repurchase intention.

Follow-up analyses

In these follow-up analyses, this study investigates whether the scent effect is the same for men and women. The parental investment theory (Trivers, 1972) states that women have a higher initial obligatory parental investment level than men, leading them to be more discriminating and selective in their mate choice. Therefore, it is possible that women may require more information about potential mates than subtle mating cues before a mating goal is activated. For example, Roney (2003) found that visual exposure to attractive people of the opposite sex only affected men and not women, and argued that women needed more than minimal visual information before courting men. Additionally, previous research confirms that mating goals are activated by mixed-sex interactions, especially for men (Baumeister *et al.*, 2001; Karremans *et al.*, 2009).

To gain insight into the possible gender-scent interaction effect on customer value, a 3 (pleasant ambient perfume:

Table 1. Descriptives and bivariate correlations

		Mean	SD	1	2	3	4	5	6	7	8	9
1	Aesthetic value	5.68	0.70	1.00								
2	Altruistic value	4.95	1.02	0.52	1.00							
3	Efficiency	5.53	0.75	0.70	0.59	1.00						
4	Play	5.15	1.01	0.69	0.54	0.70	1.00					
5	Product excellence	4.67	1.21	0.53	0.60	0.61	0.59	1.00				
6	Service excellence	5.33	0.88	0.61	0.60	0.63	0.60	0.49	1.00			
7	Social value	4.38	1.37	0.47	0.47	0.53	0.58	0.41	0.40	1.00		
8	Satisfaction	7.54	1.37	0.59	0.55	0.69	0.71	0.66	0.63	0.41	1.00	
9	Repurchase intent	5.44	1.15	0.57	0.50	0.68	0.71	0.60	0.58	0.44	0.82	1.00

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Table 2a. Psychometric properties reflective constructs

Construct and items	Loading	Bootstrap percentile CI
Altruistic value ($\lambda_1 = 1.77$; $\lambda_2 = 0.23$; $\alpha = 0.94$; ave = 0.88)		
1. This store is a socially responsible company	0.95	[0.93; 0.96][a]
2. This store makes a real difference through its socially responsible actions	0.93	[0.90; 0.95][a]
Play ($\lambda_1 = 4.12$; $\lambda_2 = 0.49$; $\alpha = 0.96$; ave = 0.82)		
1. Shopping at this store makes me feel good	0.89	[0.85; 0.92][a]
2. Shopping at this store gives me pleasure	0.90	[0.87; 0.93][a]
3. Shopping at this store gives me a sense of joy	0.90	[0.86; 0.93][a]
4. Shopping at this store makes me feel delighted	0.94	[0.92; 0.96][a]
5. Shopping at this store gives me happiness	0.90	[0.87; 0.93][a]
Product excellence ($\lambda_1 = 4.15$; $\lambda_2 = 0.29$;$\alpha = 0.96$; ave = 0.83)		
1. The offerings of this store are of excellent quality	0.89	[0.84; 0.92][a]
2. The offerings of this store is superior in comparison to that of other stores	0.92	[0.89; 0.94][a]
3. This store has high standards for its offerings	0.90	[0.85; 0.93][a]
4. This store is one of the best with respect to quality clothing	0.93	[0.90; 0.94][a]
5. The offerings of this store are high quality	0.92	[0.89; 0.94][a]
Social value ($\lambda_1 = 3.62$; $\lambda_2 = 0.2$; $\alpha = 0.97$; ave = 0.90)		
1. Shopping at this store helps me to feel acceptable	0.95	[0.93; 0.96][a]
2. Shopping at this store improves the way I am perceived by others	0.96	[0.95; 0.97][a]
3. Shopping at this store makes a good impression on other people	0.96	[0.94; 0.97][a]
4. Shopping at this store gives me social approval	0.93	[0.90; 0.96][a]
Repurchase intent ($\lambda_1 = 3.97$; $\lambda_2 = 0.51$; $\alpha = 0.95$; ave = 0.79)		
1. I intend to do business with this store again in the future	0.95	[0.91; 0.95][a]
2. It is very likely that I return to this store in the future	0.94	[0.92; 0.96][a]
3. This store is my first choice when shopping for clothes	0.76	[0.69; 0.82][a]
4. I have no doubt I am going to visit this store again.	0.87	[0.81; 0.92][a]
5. When I need new clothes, I will definitely return to this store	0.93	[0.90; 0.95][a]

Notes: [a]Loading significant at the 5% level; λ_1 and λ_2 denote respectively the first and second eigenvalue of the construct's inter-item correlation matrix; α represents the internal consistency reliability; ave refers to the average variance extracted.

Table 2b. Psychometric properties formative constructs

Construct and items	Weight	Bootstrap percentile CI
Aesthetics		
1. The store's layout is appealing	0.40	[0.15; 0.63][a]
2. The appearance of the staff is appropriate	0.24	[−0.08; 0.55]
3. The store is tidy	−0.17	[−0.57; 0.25]
4. The dressing rooms are clean	0.31	[−0.10; 0.70]
5. The store lighting is attractive	0.18	[−0.17; 0.51]
6. The shopping window looks attractive	−0.20	[−0.54; 0.15]
7. The offerings are presented in an appealing way	0.42	[0.05; 0.84][a]
Efficiency		
1. This store is accessible	0.11	[−0.05; 0.28]
2. The store lay-out at this store makes it easy for customers to find what they need	0.13	[−0.05; 0.32]
3. This store's offerings are reasonably priced	0.02	[−0.21; 0.25]
4. This store offers good value for the price I pay	0.46	[0.21; 0.70][a]
5. This store often has interesting bargains	0.28	[0.07; 0.51][a]
6. This store's dressing rooms are comfortable	0.00	[−0.21; 0.19]
7. This store has convenient operating hours	0.30	[0.07; 0.53][a]
8. Usually, waiting time at the cash registers is not too long	0.03	[−0.18; 0.24]
Service excellence		
1. The store's personnel is never too busy to respond to customer requests	−0.02	[−0.26; 0.23]
2. The store's personnel is approachable	−0.08	[−0.46; 0.29]
3. The store's personnel does its best to resolve any customer problem directly	0.46	[0.08; 0.81][a]
4. The store's personnel is honest	0.11	[−0.22; 0.42]
5. The store's personnel offers prompt service to its customers	−0.01	[−0.36; 0.35]
6. The store's personnel listens to the customer	0.13	[−0.20; 0.46]
7. The store's personnel gives customers individual attention	0.04	[−0.25; 0.33]
8. The store's personnel is not pushy	0.16	[−0.12; 0.46]
9. The store's personnel is always courteous to customers	0.39	[0.07; 0.68][a]
10. The store's personnel has the knowledge to answer customers' questions	0.13	[−0.12; 0.37]
11. The store's personnel does its best to solve customer complaints immediately	−0.18	[−0.45; 0.10]

Notes: [a]Weight significant at the 5% level.

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Table 3. Path coefficients

Dependent variables	Independent variables	Coeff.	Percentile bootstrap CI	Conclusion coefficients
Aesthetics	Congruent	0.20	[0.01; 0.39]	Significant at 5%
$R^2 = 0.06$; CI = [0.02; 0.10][a]	Incongruent	0.28	[0.09; 0.45]	Significant at 5%
Altruistic value	Congruent	0.08	[−0.09; 0.24]	Not significant
$R^2 = 0.02$; CI = [0.01; 0.03][b]	Incongruent	0.15	[0.01; 0.28]	Significant at 10%
Efficiency	Congruent	0.07	[−0.12; 0.25]	Not significant
$R^2 = 0.03$; CI = [0.01; 0.06][a]	Incongruent	0.21	[0.02; 0.39]	Significant at 5%
Play	Congruent	0.08	[−0.09; 0.25]	Not significant
$R^2 = 0.05$; CI = [0.03; 0.08][a]	Incongruent	0.26	[0.11; 0.41]	Significant at 5%
Product excellence	Congruent	−0.03	[−0.20; 0.14]	Not significant
$R^2 = 0.02$; CI = [0.00; 0.04]	Incongruent	0.13	[−0.04; 0.29]	Not significant
Service excellence	Congruent	0.12	[−0.07; 0.31]	Not significant
$R^2 = 0.02$; CI = [0.00; 0.03]	Incongruent	0.14	[−0.05; 0.32]	Not significant
Social value	Congruent	0.02	[−0.15; 0.19]	Not significant
$R^2 = 0.04$; CI = [0.01; 0.07][a]	Incongruent	0.22	[0.06; 0.38]	Significant at 5%
Satisfaction	Aesthetics	0.00	[−0.16; 0.17]	Not significant
$R^2 = 0.63$; CI = [0.58; 0.67][a]	Altruistic	0.03	[−0.11; 0.17]	Not significant
	Efficiency	0.24	[0.09; 0.40]	Significant at 5%
	Play	0.32	[0.14; 0.48]	Significant at 5%
	Product excellence	0.16	[0.02; 0.29]	Significant at 5%
	Service excellence	0.23	[0.08; 0.39]	Significant at 5%
	Social	−0.07	[−0.17; 0.03]	Not significant
Repurchase intent	Aesthetics	−0.01	[−0.14; 0.13]	Not significant
$R^2 = 0.74$; CI = [0.71; 0.77][a]	Altruistic	−0.11	[−0.21; −0.01]	Not significant
	Efficiency	0.10	[−0.05; 0.26]	Not significant
	Play	0.16	[0.02; 0.28]	Significant at 10%
	Product excellence	0.22	[0.11; 0.35]	Significant at 5%
	Service excellence	0.06	[−0.07; 0.20]	Not significant
	Social	0.03	[−0.08; 0.13]	Not significant
	Satisfaction	0.52	[0.38; 0.65]	Significant at 5%

Notes:
[a] R^2 significant at the 5% level.
[b] R^2 significant at the 10% level.

no vs. gender-congruent vs. gender-incongruent) × 2 (shopper gender: female vs. male) MANOVA with the seven dimensions of customer value as dependent variables was conducted. The interaction effect between ambient perfume and gender is not significant in the multivariate test (Wilks' $\Lambda = .89$, $p = .11$) as well as in the univariate analyses: aesthetics, $F(2, 176) = .78$, $p = .46$; altruistic, $F(2, 176) = .14$, $p = .87$; efficiency, $F(2, 176) = .29$, $p = .75$; play, $F(2, 176) = .28$, $p = .76$; product excellence, $F(2, 176) = 1.37$, $p = .26$; service excellence, $F(2, 176) = .53$, $p = .59$; social, $F(2, 176) = .71$, $p = .50$. Hence, gender does not have a moderating effect on the pleasant ambient scent effects on customer value. Note that the multivariate main effect of gender is significant (Wilks' $\Lambda = .91$, $p = .03$, $\eta_p^2 = .09$). Apparently, men evaluate the altruistic ($F(1, 176) = 5.39$, $p = .02$, $\eta_p^2 = .03$), product excellence ($F(1, 176) = 5.76$, $p = .02$, $\eta_p^2 = .03$), service excellence ($F(1, 176) = 5.65$, $p = .02$, $\eta_p^2 = .03$), and social ($F(1, 176) = 3.79$, $p = .05$, $\eta_p^2 = .02$) dimension of customer value more positively than women.

DISCUSSION

The aim of this study was to examine whether a pleasant incongruent ambient scent in certain well-defined cases can have a positive effect on customer value. It was expected that the presence of a pleasant ambient feminine or masculine perfume might give the male or female customer, respectively, an (implicit) impression that he/she is surrounded by individuals of the opposite sex. Consequently, this perfume may trigger the mate attraction goal, leading respondents to want to signal their physical attractiveness and leading them to evaluate stimuli that help them reach their goal more positively. The findings of this research confirm that a pleasant gender-incongruent ambient perfume positively influences different dimensions of customer value as compared to the absence of a perfume. Contrary to previous research examining scent congruity (e.g. Doucé *et al.*, 2013; Spangenberg *et al.*, 2006), the findings of this study show that a gender-incongruent perfume also leads to a more positive evaluation of the customer value dimensions play, product excellence, and social as compared to a gender-congruent perfume. The finding that a gender-incongruent perfume leads to better results than a gender-congruent perfume regarding these three dimensions corresponds with the theory that the perfume of the opposite sex is seen as a mating cue. Play represents the pleasure the customers experience when shopping in the store; product excellence is the customers' evaluation of the quality of the clothes; and social value measures how much shopping in this store improves the customers' image. These three dimensions of customer value are particularly important for mate attraction. The perfume of the opposite sex leads customers to experience pleasure and excitement, to want to improve their image (impression management),

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and to evaluate the products that help them reach their desired image more positively. Furthermore, as compared to the absence of a perfume, a pleasant gender-congruent ambient perfume only has a positive effect on one dimension of customer value—aesthetics—which represents the customers' evaluation of the store environment. For the other dimensions of customer value, no difference between no perfume and a gender-congruent perfume is found. Apparently, the positive effect of a gender-congruent perfume on aesthetics does not hold for the other customer value dimensions. Finally, the findings show that all of the observed ambient scent effects are independent of the gender of the respondent. Hence, men and women are both influenced by subtle mating cues.

Limitations, future research, and implications

This study focuses on a specific case of scent incongruity. Specifically, this research works with masculine and feminine perfumes. Because these perfumes can function as mating cues, a scent that is incongruent with the store's offerings has a positive effect on the target group's reactions. Future research should also focus on identifying other settings in which scent incongruity can have a positive effect on consumer evaluations.

Future research could also investigate the combined effect of scents and other atmospheric stimuli on shopping behaviour. Shopping is a holistic experience in which a consumer is simultaneously exposed to several environmental elements. Some studies have already explored the interaction effects of ambient scents with other atmospheric cues (e.g. Mattila and Wirtz, 2001; Morrison *et al*., 2011; Spangenberg *et al*., 2005). However, most research has been concentrated on the combination music and scent. Hence, additional research exploring other combinations of atmospheric stimuli is still needed—specifically with respect to their possible implicit mating cue properties.

The findings of this study also have theoretical and practical implications. First, the effect of pleasant ambient scent on different customer value facets is an important finding. Customer value has been recognized as one of the most essential ingredients for organizational success (e.g. Gallarza *et al*., 2011). However, no previous research looked at ambient scent effects on all customer value facets at the same time. Second, this study contributes to the theory about (in) congruent ambient scent effects by showing that when the scent functions as a mating cue, a pleasant incongruent scent positively influences consumer evaluations. Therefore, retailers selling products that help individuals signal their physical attractiveness (e.g. clothing, jewellery, and lingerie stores) can make use of pleasant gender-incongruent perfumes to heighten the store's appeal.

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The impact of self on materialism among teenagers

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ABSTRACT

No previous research has investigated the relationship between the concept of self and materialism, especially among teenagers. Our study seeks to reverse this trend by examining how independent self-construal and interdependent self-construal affect materialism among Brazilian teenagers (grades 7 through 12). Hypotheses were tested using structural equation modelling. We find that independent self-construal has a positive effect on materialism. Furthermore, we created three sub-constructs out of the original interdependent self-construal construct, none of which affected materialism in the same way. *Group dependency*, a need to achieve the group's authorisation, increases materialism; *group loyalty*, an attitude of group fidelity, has no effect on materialism; and *group respect*, a respect for group decision, diminishes materialism. These are interesting results, because they question our prior beliefs on the matter and introduce new factors into the scholarly discussion of this issue. Copyright © 2016 John Wiley & Sons, Ltd.

INTRODUCTION

Previous research has investigated materialism in the context of adolescents. Chaplin and John (2007) showed that materialism is closely related to self-esteem in children between the ages of 8 and 18. It is in this transitional period that the individuals choose their level of independency and interdependency from others (Gulland, 2006). Belk (1988) shows that teenagers seek self-identity by acquiring and accumulating a selection of consumption objects, and other studies conclude that indeed teen consumption focuses on specific things that friends use, the so-called 'right things' as a way to fit into their social group (Kantrowitz and Wingert, 1999; Moses, 2000; Muniz and O'Guinn, 2001; Siegel *et al.,* 2001; Lindstrom, 2003). In addition, Solomon (1983) suggests that teens tend to create shared meanings with their peers, making their interpretation of reality fairly consistent with that of their social group. They even align their values to those of their friends, discussing ideas and expecting their support and understanding in response (Youniss and Smollar, 1985).

Despite the previous research on materialism in teenagers, no research has examined the effect of self on materialism in teenagers. In this paper, we examine how the definition of the self has an effect on materialism among adolescents. Our research has three major contributions. First, this study examines the relationship between self-construal, both independent and interdependent, and materialism. Second, we test the conceptual model using data from a sample of teenagers. The focus on teenagers is particularly useful, we believe, not only because of the shortage of research about them, but also because adolescence is a transition filled with resolutions which will be carried beyond adolescence deep into adulthood, as an integral part of the self. Knowing what makes a teenager more or less materialistic could help us understand how they behave and make choices, and even may shed some light on their decisions as adults. Finally, this research focuses on Brazil, an emerging economy. The unique context of countries with emerging economy provides an interesting research context because recent studies show that these countries have increased purchasing power, and are likely to expand further (Morningstar, 2014). Thus, understanding consumer behaviours in these countries is important to marketers, wishing to expand their operations in these markets.

In the next section we provide a brief review of the literature on materialism and self. We then proceed to detail our research instrument and model, followed by our procedure and results. We conclude with implications from our results, the limitations of our study and suggestions for further research.

THEORETICAL DEVELOPMENT

Self

Most prior studies about self are found in the arenas of psychology and sociology (Brewer and Hewstone, 2004), and studies connecting self with adolescent consumer behaviour are not large in number (Chaplin and John, 2007). The self-concept encapsulates personal traits and characteristics like personality and self-perceptions. It is what comes to mind when we think about ourselves (Neisser, 1993).

Campbell *et al.* (1996) suggest that early researchers treated the self-concept as a unitary entity, a stable, comprehensive view of the self. Contemporary researchers rely on a multi-dimensional, dynamic construal of the self-concept. There are several constructs related to the self-concept. For instance there are ideal self, actual self, ought self (Sirgy, 1982; Higgins *et al.,* 1986), possible self (Markus and Wurf, 1987), self-congruity (Grzeskowiak and Sirgy, 2007; Sirgy *et al.,* 2008), academic self-concept, social self-concept and physical self-concept (Shavelson *et al.,* 1976). The other dimensions of self that relate most directly to our study are

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self-concept clarity, independent self-construal and interdependent self-construal. For our research, we use two dimensions of self (independent and interdependent) in an attempt to better capture such a complex aspect of an individual's life. According to parents, concepts such as independency and interdependency are very important during the teenager phase (Bristol and Mangleburg, 2005).

In summary, the self is the way a person views herself (Krech *et al.,* 1962, p. 495–496). The self regulates intentional behaviour and permits the person to function efficiently in her social world (Markus and Wurf, 1987; Banaji and Prentice, 1994). An individual's evaluation of herself greatly influences her behaviour, and therefore, the more valued the self, the more organised and constant her behaviour becomes (Grubb and Grathwohl, 1967).

Materialism

Materialism has been defined as 'the importance a consumer attaches to worldly possessions' (Belk, 1984, p. 291) and as 'the importance a person places on possessions and their acquisition as a necessary or desirable form of conduct to reach desired end states, including happiness' (Richins and Dawson, 1992, p. 307). As proposed earlier by James (1890), a person's definition of herself is comprised of everything that she can call hers. According to Richins and Dawson (1992), true materialism is the pursuit of happiness through the acquisition of material things, yet we are interested in what could be called materialistic behaviour as well, in which materialism could also be a means to an end. The end is to express one's self through what one consumes (Czikszentmihalyi and Rochberg-Halton, 1981; Holman, 1981; Mukerji, 1983; Solomon, 1983; Belk, 1985). Materialism affects what consumers expect from their possessions and which products they believe can fulfil their desires (Richins, 1994a).

Materialism is 'a value that guides people's choices and conduct in a variety of situations, including, but not limited to, consumption arenas' (Richins and Dawson, 1992, p. 307). The literature on materialism offers a background that helps researchers understand how consumers become attached to their belongings (Belk, 1985; Vigneron, 1998) and what are the implications for consumption meanings, self-identity (Zinkhan, 1994), charitable behaviour (Mathur, 2013) and teenagers (Schaefer *et al.,* 2004).

Materialism is an orientation which views material goods as important for personal happiness and social progress (Ward and Wackman, 1971). Although authors define materialism differently, their definitions share the following concept: that consumption is related to more than the instrumental or functional value of objects, suggesting that individuals seek a relationship with objects whereby they can improve themselves in some way. For this study we follow Richins (1987, p. 352) proposition that materialism is defined in terms of its role in consumer culture as 'the idea that goods are a means to happiness; that satisfaction in life is not achieved by religious contemplation or social interaction, or simple life, but by possession and interaction with goods.'

Some studies found high levels of materialism among adolescents (Fields, 1999; John, 1999). This is not surprising because a frequent theme of the modern consumer culture is that happiness can be purchased at the mall, on the Internet, in a catalogue, or on the iPhone (Kasser, 2002). In a recent study, Pieters (2013) finds that some kinds of materialism contribute to loneliness, yet other types of materialism help people get out of situations of solitude. It is possible adolescents could act more materialistic in order to avoid, or augment, their perceived levels of loneliness, of particular importance for people at those early stages, and this could depend on their perception of what is predominant on their self.

Theoretical development: self and materialism

Earlier research has shown that the 'self' could help predict some human behaviours related to materialism such as consumption motivation, purchase intention, tourism choices cognition, brands, seeking for uniqueness and advertising attitude (Grubb and Grathwohl, 1967; Markus and Kitayama, 1991; Todd, 2001; Tsai, 2006; Sirgy *et al.,* 2008; Song and Lee, 2013), given that consumers attempt to gain acceptance into social groups through the products they purchase (Vigneron and Johnson, 2004). Sirgy (1982) shows that consumer attitudes are consistent with their self-image and research reaffirms this concept, showing people create and communicate their self-image through the products they choose to consume (Sirgy, 1982; Solomon, 1983; Belk, 1988; Wallendorf and Arnould, 1988; Richins, 1994b; Kleine *et al.,* 1995).

Everyone possesses dimensions of both independent and interdependent self-construal (Singelis, 1994; Agrawal and Maheswaran, 2005). Yet, individuals are inclined to use one dimension of self-construal more than the other to guide their behaviour (Markus and Kitayama, 1991; Agrawal and Maheswaran, 2005). Independent self-construal 'requires construing oneself as an individual whose behaviour is organised and made meaningful primarily by reference to one's own internal repertoire of thoughts' (Markus and Kitayama, 1991, p. 226). One can conclude that an individual's behaviour is based on her independent self-construal, if her own internal attributes (e.g. feelings and thoughts) determine or cause her behaviour (Markus and Kitayama, 1998).

Markus and Kitayama (1991, p. 226) suggest that interdependent self-construal 'entails seeing oneself as part of an encompassing social relationship and recognising that one's behaviour is determined, contingent on, and to a large extent, organised by what one perceives to be the thoughts, feelings, and actions of others in the relationship'. The important tasks for interdependent individuals are to fit into their group(s), act in suitable ways, promote their in-group goals and conform to their group(s). Consequently, the behaviour of individuals with a strong interdependent self is a reaction to others with whom they are interrelated (Markus and Kitayama, 1998). Furthermore, individuals with a firm need to belong are likely to be prone to materialistic tendencies (Rose and DeJesus, 2007).

Highly independent people are less susceptible to external influences (Wong and Ahuvia, 1998) and focus more on internal experiences (Abe and Bagozzi, 1996). The aforementioned empirical studies suggest that independent

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individuals are more likely to reject motivations that are socially generated. Furthermore, Clark's (2006) study of U.S. university students finds that global independency is negatively related to materialism. To summarise, an individual with a more independent 'self' values being able to take care of herself, while an individual with a more interdependent self gives higher importance to her family or group(s).

Conventionally, it is suggested that teens' levels of materialism are high (John, 1999; Larsen *et al.,* 1999; Bristol and Mangleburg, 2005), but there is little explanation as to why this is. Research points in different directions; materialistic parents (Goldberg *et al.,* 2003), broken families (Rindfleisch *et al.,* 1997; Roberts *et al.,* 2005), level of wealth (Goldberg *et al.,* 2003) and susceptibility to peer pressure (Achenreiner, 1997; Goldberg *et al.,* 2003). It seems as if the elections made by teenagers on consumption patterns, and the importance they give to the possession of certain objects, could be closely related to how they define themselves against others, and by extension, on the prevalence of materialistic behaviour in them.

Churchill and Moschis (1979) find that preferences of consumption differ between more independent and more interdependent consumers and suggest this is provoked by a stronger need for differentiation in consumers with a more pronounced independent self-construal. Furthermore, Zollo (1999) shows that adolescents' material possessions have important consequences on their perception of their own self, and as mentioned above, Chaplin and John (2007) find that materialism is closely related to self-esteem in children between 8 and 18 years of age, so that materialistic behaviour could be reduced by boosting self-esteem. Based on this, we hypothesise that materialistic attitude could depend on what is dominant in them, independent self or interdependent self. This relationship between self-perception and materialism has not yet been studied.

This analysis leads us to the proposal of the following two main hypotheses:

H1: Independent self-construal relates negatively to materialism.

H2: Interdependent self-construal relates positively to materialism.

We propose a framework intending to investigate the following constructs: interdependent self-construal, independent self-construal and materialism, by using a scheme that represents a combination of interrelated fields such as consumer psychology, sociology and marketing, to examine how materialism is influenced by the dimensions of the 'self' (interdependent self-construal and independent self-construal). Figure 1 depicts the conceptual model.

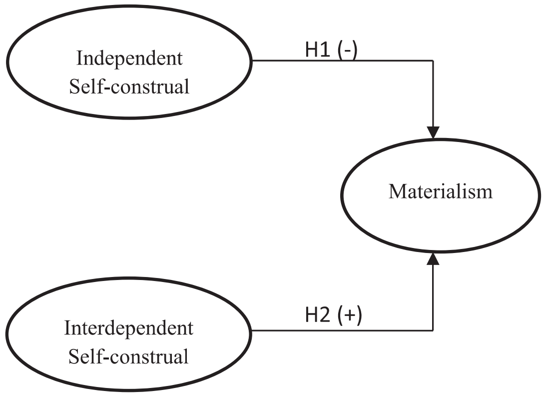

Figure 1. Conceptual simple model.

RESEARCH METHODOLOGY

To test these hypotheses, a self-report survey was used to collect data from high school students in the state of São Paulo, Brazil. The population for this research consists of high school students between 12 and 19 years of age (grades 7 through 12). Three private high schools in the city of Santos were selected. Although in the US private schools are associated with affluence, this is not the case in Brazil, a country with a shortage of public high schools. Private schools are available and affordable for students in all socioeconomic sectors. With the intention of obtaining a diverse sample, tuition price was used as an indicator of socioeconomic status. The three selected schools represented an ample range of tuition.

Adolescence is a critical connection between childhood and adulthood, characterised by important physical, psychological and social transitions. These transitions bring new risks but also present opportunities to positively impact the immediate and future of young people (Gilles, 2014). The teenage years are a development phase, which can determine values one might carry as an adult, influencing deeply how one self is formed. Teenagers have always been an important consumer group because they tend to be early adopters and because, traditionally, their brand preferences and consumer habits are not yet firmly defined (Lapowsky, 2014). Furthermore, teens are getting more materialist than older generations, which reiterate the importance to focus on this age group (Chee, 2013).

Together with each school, students were recruited from approved classrooms. Before starting to answer all the students in the class with parental/guardian authorization were invited to complete the questionnaire. After that they were informed that their participation was voluntary (even with their parental authorizations) and that they could stop at any time. Nevertheless, they were not authorised by the school to leave the class in order to avoid noise and bother other classes. Furthermore, they were informed that any and all responses they provided would be held in the strictest confidence. It was also mentioned to the students that not even the school or parents would have access to individual data, all collected data and all classes in a specific school would be mixed and impossible to be separated. The total sample size obtained was 543 paper and pencil questionnaires. Two thirds of our sample are 16 or 17 years of age, and most of them have only one sibling or none (73%). Only 16 per cent of them have some kind of work and 66 per cent of their allowance pays for entertainment or clothes.

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Measures

Developed in English, the instrument was translated into Portuguese by a native speaker and then translated back into English by a different native Portuguese speaker, who was not affiliated with this project. The instrument was pre-tested with 50 students, and reliability was satisfactorily assessed for the constructs, with an acceptable range of Cronbach's alpha coefficients near .70 or better (Nunnally and Bernstein, 1994; Kline, 2000).

The independent self-construal scale used was developed by Gudykunst *et al.* (1994) and improved by Gudykunst and Lee (2003). This measure was drawn from instruments used in past research in many cultures (Hui, 1988; Markus and Kitayama, 1991; Verma, 1992; Singelis, 1994; Yamaguchi, 1994). The Gudykunst *et al.* (1996) scale has 14 items, and the scales have good reliability and validity as shown in previous studies (e.g. Hackman *et al.* (1999)). All the items were measured using a 1 to 7 point scale (1 = strongly disagree to 7 = strongly agree).

The 14-item interdependent self-construal measure developed by Gudykunst and Lee (2003) was adopted. For the purpose of this study, three items related to work relationships were deleted, given that teenagers in urban areas of Brazil typically do not have jobs, and only a small proportion of our sample had one. Finally, a total of 11 items using a 1 to 7 point scale (1 = strongly disagree to 7 = strongly agree) were used. They include: 'It is important to consult close friends and get their ideas before making a decision'.

Materialism had 15 items assessing teenagers' materialism value using a 1 to 7 point scale. The measure was developed by Wong *et al.* (2003), and was tested in a cross-cultural setting. This scale is an adapted version (altered to use an interrogative question format) of the version of the material values scale (Richins and Dawson, 1992; Richins, 2004). A sample question was: 'How do you feel about people who own expensive homes, car and clothes?' Past studies have reported that the scale demonstrates good reliability (e.g. Prendergast and Wong (2003); Rose and DeJesus (2007)).

Analysis procedure

First, we ran an exploratory factor analysis (EFA) using SPSS software version 23. We subjected all items to the EFA using varimax rotation. Using a cut-off eigenvalue of 1 (Kaiser, 1960) we found that there were five factors with accumulated variance explained of 52 per cent. We delete items that cross loaded onto more than one factor. With the inspection of the items forming the factors, we found that there are eight items measuring the materialism construct while there are eight items measuring the independent self-construal. For the items measuring the interdependent self-construal, there were three factors. Each factor had three items. The first sub-construct born from interdependent self-construal was renamed *group dependency*, and refers to a need to achieve the group's authorisation before any action; it includes three items (e.g. 'I consult others before making important decisions'). The second construct was named *group loyalty* and includes three items on putting the group interests ahead of one's own interests (e.g. 'I will sacrifice my self-interest for the benefit of my group'). Finally, *group respect* considers three items related to respecting group decisions (e.g. 'I respect decisions made by my group').

This all suggested a re-evaluation of our original hypotheses. While the first hypothesis (H1) continues to be reasonable, the second hypothesis had lost its meaning. We replaced H2 with three new hypotheses, H2a, H2b and H2c. Figure 2 diagrams the five construct model conceptually.

H1: Independent self-construal relates negatively to materialism.

H2a: Group dependency relates positively to materialism

H2b: Group loyalty relates positively to materialism

H2c: Group respect relates positively to materialism

Then we subjected the remaining 25 items measuring the specified five constructs to a confirmatory factor analysis using LISREL 9.1 (Jöreskog and Sörbom, 2013). The initial fit indices indicated a good model fit [$\chi^2_{314} = 537.35$, χ^2/df = 1.71, $p > 0.001$, RMSEA = 0.04, CFI = 0.96, NFI = 0.91, NNFI = 0.98]. However, there were items that had low standardised factor loadings. Considering both statistical guidelines and evaluating the impact of deleting items on how a construct was defined, we sequentially deleted items with standardised factor loadings less than 0.50. The final measurement model fits the data well [$\chi^2_{109} = 176.43$, χ^2/df = 1.61, $p = 0.02$, RMSEA = 0.03, CFI = 0.99, NFI = 0.95, NNFI = 0.98]. The values for CFI, NFI and NNFI were greater than the recommended value of 0.90 while the RMSEA is less than 0.08 (Hu and Bentler, 1998) (Table 1).

Convergent validity was supported, as the factor loadings were all significant (the lowest t-value was 9.11). The measurement model also demonstrated a reasonable level of reliability as the lowest construct reliability (CN) was 0.72, and the lowest Cronbach's alpha was 0.70 (Nunnally and Bernstein, 1994). However, the average variance extracted (AVE) values were rather low. The lowest AVE was 0.40. However, as indicated by Fornell and Larcker (1981), the AVE is a more conservative measure of construct reliability. There are past studies that have also reported low value of AVEs (e.g. De Luca and Atuahene-Gima, 2007, Hanvanich *et al.*, 2006). To satisfy the requirement of discriminant

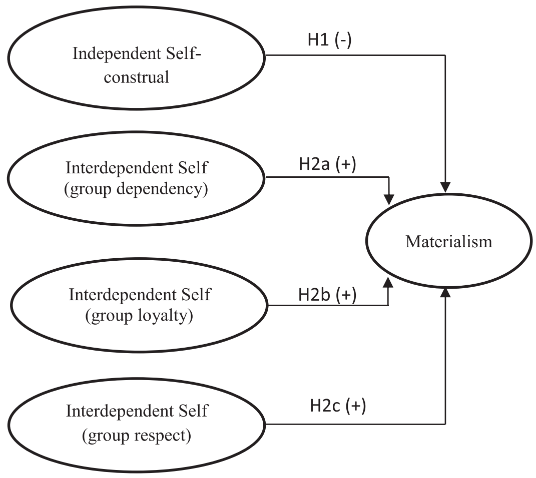

Figure 2. Conceptual complex model.

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Table 1. Measures

Measures	Std. factor loadings
Materialism (α = 0.70, CN = 0.72, and AVE = .40)	
How do you feel about people who own expensive homes, cars and cloths? (1 = do not admire to 7 = greatly admire)	0.50
How do you approach your life in terms of your possessions (i.e. buying and owning things)? (1 = simple is better to 7 = more is better)	0.65
Would your life be any better if you owned certain things that you don't have? (1 = not any better to 7 = much better)	0.79
What do the things you own say about how well you are doing in life? (1 = very little to 7 = a great deal)	0.52
Independent self-construal (α = 0.74, CN = 0.77 and AVE = .46)	
I prefer to be self-reliant rather than depend on others.	0.72
I try not to depend on others.	0.75
It is important for me to act as an independent person.	0.73
I should decide my future on my own.	0.50
Group dependency (α = 0.70, CN = 0.74 and AVE = .50)	
I consult others before making important decision.	0.55
It is better to consult others and get their opinion before doing anything.	0.74
It is important to consult close friends and get their ideas before making a decision.	0.72
Group loyalty (α = 0.72, CN = 0.73 and AVE = .50)	
I will sacrifice my self-interest for the benefit of my group.	0.52
I will stay in a group if it needs me, even if I am not happy with it.	0.82
I remain in the groups of which I am a member if they need me, even though I am dissatisfied with them.	0.71
Group respect (α = 0.71, CN = 0.73 and AVE = .50)	
I respect decisions made by my group.	0.80
I maintain harmony in the groups of which I am a member.	0.52
I respect the majority's wishes in groups of which I am a member.	0.72

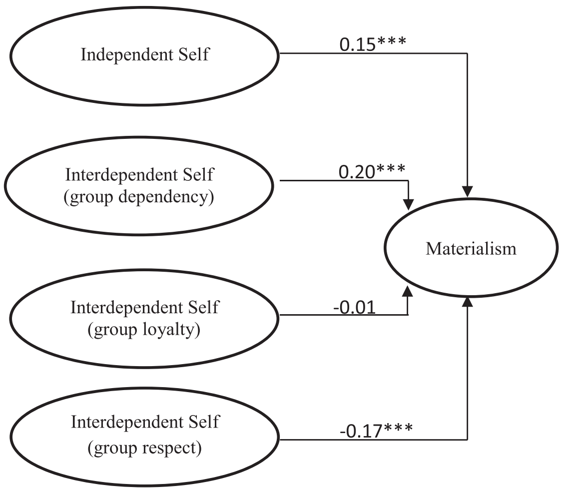
$\chi^2_{314} = 537.35$, $\chi^2/\mathrm{df} = 1.71$, $p > 0.001$, RMSEA = 0.04, CFI = 0.96, NFI = 0.91, NNFI = 0.98.

validity, the AVE for two constructs should exceed the squared correlation between them (Fornell and Larcker, 1981). It can be seen from Table 2, which presents the correlations among constructs, there is no evidence that a squared correlation between any two constructs was higher than either of the constructs' AVE. This provides support for discriminant validity among the constructs. In conclusion, the measurement model demonstrated satisfactory measurement properties.

RESULTS AND DISCUSSION

Once the measurement model demonstrated reasonably good measurement properties, we proceeded to run the structural model. The structural model fits the data well [$\chi^2_{115} = 335.40$, $\chi^2/\mathrm{df} = 2.91$, $p < 0.001$, RMSEA = 0.06, CFI = 0.94, NFI = 0.91, NNFI = 0.93]. As the structural model fits the data well, we proceed with the analyses of the hypotheses. The complete model's standardised solution is shown in Figure 3 and Table 3.

H1 is not supported because independent self-construal is positively related to materialism (β = 0.15. t-value = 3.36). While we hypothesise that the independent self-construal would be negatively related to materialism, the significant



*Significant at ≤0.05 level (two tail test).
**Significant at ≤0.01 level (two-tailed test).
***Significant at ≤0.001 level (two-tailed test).

Figure 3. Complex model (standardised solution).

Table 3. Standardised solution—estimates and t-values

Hypothesis		Standardised solution	
		Estimate	t-value
Independent Self → Materialism	H1	0.15***	3.36
Group Dependency → Materialism	H2a	0.20***	3.25
Group Loyalty → Materialism	H2b	−0.01	−0.31
Group Respect → Materialism	H2c	−0.17***	−3.81

*Significant at ≤0.05 level (two-tailed test).
**Significant at ≤0.01 level (two-tailed test).
***Significant at ≤0.001 level (two-tailed test).

Table 2. Descriptive statistics: means, standard deviation and correlations

Constructs	Mean	Std. deviation	1	2	3	4	5
1. Materialism	4.16	1.13					
2. Independent self-construal	5.46	1.16	0.15**				
3. Group dependency	4.93	1.40	0.12**	0.11*			
4. Group loyalty	4.11	1.55	−0.02	0.11*	0.26**		
5. Group respect	5.41	1.26	−0.08*	0.18**	0.25**	0.36**	

*Significant at ≤0.05 level (two-tailed test).
**Significant at ≤0.01 level (two-tailed test).

result for H1is found, but in the opposite direction. It is unexpected to see that independent self-construal is positively affecting materialism. This result challenges our preconceived belief but is not necessarily unreasonable. Independent people, especially teenagers, may be drawn into materialistic behaviour in order to signal their difference with the rest. Additional explanation for the positive relationship between independent self-construal and materialism could rest on the fact that this research was done with Brazilian teenagers, a group seldom scrutinised in this class of research.

We expected interdependent self-construal to be positively related to materialism, because we hypothesised that more interdependent individuals would need to consume more of what others are consuming, in order to fit into the group. Teenagers are more invested with their friends, and would require somehow signalling their concordant personality to them. Nonetheless, the original construct was not homogeneous enough so it was divided into three sub-constructs. These revealed relationships between them, depicted in Table 3, which allows for much more thought-provoking analyses. H2a is supported as group dependency affects materialism positively ($\beta = 0.20$. t-value $= 3.25$). As expected, Brazilian teenagers who possess high levels of group dependency tend to report high levels of materialism. This is because they want to achieve the group's authorisation to be part of the group and thus may increase their levels of materialism consumption to fit in the group they belong or aspire to belong to.

H2b is not supported, as group loyalty has no effect on materialism ($\beta = -0.01$. t-value $= -.31$). H2c is also not supported as group respect diminishes materialism ($\beta = -0.17$. t-value $= -3.81$). While we hypothesise that group respect would be positively related to materialism, a significant result for H2c is found, but in the opposite direction. Individuals with high respect for the decisions of the group seem to be the less affected by materialism, and this is actually the only construct to diminish it, which is something that we expected independent self to do.

CONCLUSION

Because there is no prior study that focuses on the relationship between self and materialism among teenagers, especially Brazilian teenagers, the results of this study suggest that both independent self and group dependency promote materialism among Brazilian teenagers. Also, materialistic individuals represent a large consumer segment (Wiedmann *et al.,* 2009). The study of the Brazilian teen market reveals that retailers could shift marketing efforts to focus more on materialistic aspects of merchandising and advertising. Retail companies should understand that some teens relate with their own belief that money can buy them happiness and that acquiring material possessions is a form of demonstrating one's achievements in life (Banerjee and Dittmar, 2008).

This research offers three main contributions. First, this study is an attempt to increase understanding of teenagers' self and materialism and the relationship between them. The focus was on how interdependent and independent self-construal affects teenagers' materialism levels. This research allows us to expand our understanding of the self and its different dimensions. Until now research has focused mainly on two types of self, independent and interdependent. It may be time to investigate a little deeper, and discover new levels of the self. One of the key findings of our study demonstrates that the self is a powerful force in developing materialism. Also, there are more dimensions of the self that should be studied. Our beliefs were partly justified; the self does translate into different levels of materialism among individuals. Yet, not all dimensions of the self-concept affect materialism equally. While both independent self and group dependency have positive impact on materialism, the group respect has a negative impact on materialism among teenagers. Because some of our hypotheses are supported in the opposite direction, it should be a compelling task to strengthen these findings with more investigation.

Second, we test the conceptual model using data from a sample of teenagers. Because our conceptual model was tested using the data gathered from adolescents, we found interesting new focuses for research. Regardless, our conclusions need not be confined only to adolescents, because aspects like loyalty and respect (the sub-constructs of interdependent self) are also part of the daily life of adults. These results should be taken with prudence, but also interest, by researchers.

Finally, this research focuses on Brazil. Another goal of the study was to examine the applicability of scales already tested in different cultures with Brazilian teenagers. The results are mixed, while independent self-construal responded well, interdependent self-construal did not. This may be because Brazilians do not share the traditional dimensions that have been internationally tested, or it could be that teenagers represent a more complex cohort to be analysed using the measurement scales developed for an adult cohort. It would be interesting to retest these dimensions in cultures in which they have already been tested, but with teenagers, in order to evaluate the real difference. This would be a good way to recognise if these results are born from the fact we studied adolescents, or because Brazilians do not share the same aspects other cultures do.

LIMITATIONS AND FUTURE RESEARCH

We should consider some possible shortcomings of our work, largely to do with the fact we used an adolescent's data base and discovered new features of their self. Considering this, perhaps some of the measures used lack sensitivity for our audience, which could make sense given that most of the work done until now has not been tested on teenagers, but on adults. More research is needed in order to be certain this is not the case, and eventually find new scales more appropriated for use with teenagers. In order to make the psychometric properties of the measures used in this study stronger, future studies can incorporate some qualitative investigation into wordings and meaning used for measurement scales to ensure their appropriateness for adolescents. This can be done prior to pretesting the quantitative questionnaire.

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Second, because our hypotheses are supported in the opposite direction, future studies can consider replicating and extending our conceptual frame work. Future research should involve different countries and different measures in order to investigate if the relationships found in this study are applicable in different settings. Further investigation should shade more light into the conflicting findings and explain our results better. Also, some qualitative study can be conducted to further explain the findings of our research.

Finally, the nature of our research is cross sectional. Further studies can be developed to investigate whether the relationship between self and materialism varies as the teenagers become older. In other word, future research can test the moderating role of age on the associations between various self and materialism.

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