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Supermarket literacy and use of branding in China: The case of fresh meat

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Abstract

Food retailing in China has been under rapid change, with sizeable portions of the demand moving from traditional wet markets to Western-style supermarkets. Consequently, the necessary shopping skills have moved from personal negotiation and bargaining to skills related to locating and evaluating products in supermarkets, where branding has become prominent. We define the concept of *supermarket literacy* and investigate how it relates to the use of brands when buying fresh pork. Using data collected at three different types of supermarkets in Shanghai and Shenzhen, we find that a higher degree of supermarket literacy leads to more brand awareness and a more positive brand image, but is not related to concentration of purchase intentions. We conclude with observations on the role of branding in Chinese food retailing.

Keywords: branding, China, pork, retailing



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Introduction

The economic growth and transition towards a market economy that has taken place in China over the last decades has brought about unprecedented changes in consumer behaviour (Wang, Li & Fu, 2010). From a plan economy where consumer goods were scarce, basic food products were rationed and choice was limited, the economy has rapidly developed towards a Western-style consumer society with pervasive use of modern marketing tools and abundant choices.

The food area, and especially fresh produce, is an area where the changes have been especially drastic (Veeck & Burns, 2005). Food used to be either rationed through state stores, or it was traded on open markets, where the major marketing tool is personal communication between buyer and seller. During the last few years, food retailing has been moving rapidly into Western style supermarkets (Hu, Reardon, Rozelle, Timmer & Wang, 2004), where personal communication between buyers and sellers is replaced by communication through food labels, in-store displays, advertising, and not least the physical product and its appearance on the shelf or in the cooler.

This involves major changes in the way in which Chinese consumers make buying decisions for food. Food has always been an experience good (Grunert, 2005), i.e., the quality of a food product is unknown before the purchase and has to be inferred from quality cues. On open markets, the major quality cues were the familiarity with the seller, personal communication with the seller, and the ability to inspect – often not only see, but also touch and feel – the physical product. When purchases move into the supermarket, most of these quality cues are no longer available. The physical product is still visible, but may be prepacked and hence less available for visual inspection and handling. The consumer therefore has to find new ways of reducing the risk associated with buying food. Risk perception is a major factor in food choice in China, as a series of food safety problems and deficiencies in the Chinese food risk management system (Kim, 2013) have resulted in consumer risk perception (Liu, Pieniak & Verbeke, 2014).

Branding is traditionally the major marketing tool for reducing consumer uncertainty in cases when goods are characterized by experience and credence qualities and when personal communication between seller and buyer is not possible (Erdem & Swait, 1998). Indeed, branding has become highly visible in Chinese supermarkets, and even product categories like fresh meat, which in Europe traditionally have a low degree of branding, are being heavily

branded. For example, it is not uncommon that a Chinese supermarket carries several brands of fresh pork, together with several brands of pre-packed pork and perhaps one or two brands of frozen pork.

Since purchasing by brand is a very different way of shopping compared to purchasing on the basis of personal negotiations with the seller, going from one way of purchasing to the other requires a learning process from the consumer, where shopping habits must be unlearned and new ones learned (Maruyama & Wu, 2014), developing literacy in acting in the new shopping environment. We propose in this paper the concept of *supermarket literacy* to designate consumers' ability to shop successfully in a supermarket setting. We argue that supermarket literacy is a prerequisite for being able to make use of branding. We will define and operationalize the concept and develop hypotheses on how supermarket literacy is related to use of brands. We test these hypotheses using data on shopping behaviour with regard to pork. Pork is a major item in Chinese food patterns, its consumption has been rising rapidly together with the economic growth (Fu, Gandhi, Cao, Liu & Zhao, 2012), it has been subject to food scandals giving rise to consumer risk perception (Verbeke & Liu, 2014), and as noted above it has been subject to considerable branding efforts by pork producers.

Supermarket Literacy and Use of Brands

Literacy is usually used to designate the ability to read and write, but more recently the term has been used in a broader sense to designate skills and knowledge in a particular area. Thus, *health literacy* (see Sørensen et al., 2012, for an overview) has been used to describe the degree to which people have the cognitive and social skills to obtain and use information that helps them to maintain and promote good health, and *computer literacy* (see, e.g., Poynton, 2005) has been used to describe the possession of skills and knowledge that enable people to deal with computer technology in their daily life. The term *consumer literacy* has been used as a higher order concept that encompasses health literacy, financial literacy, and possibly other domains in which people need market- and communication-related skills and knowledge in order to achieve their goals (McGregor, 2011). *Marketing literacy* (Macdonald & Uncles, 2007) has been proposed as a construct describing people's ability to recognize and deal with sales-oriented actions. To our knowledge, there have been no previous attempts to define or measure supermarket literacy.

As noted above, we believe that shopping in a supermarket requires skills and knowledge that are different from shopping in a situation where personal communication and bargaining is possible (just as online shopping requires a different set of skills and knowledge).

Supermarket shopping requires the ability to identify relevant merchandise, to appreciate and evaluate differences between related products without help from a salesperson, to find, understand and process information given on product labels and on in-store displays, to evaluate the credibility of such information, and not least to understand the role of branding and make use of it in the shopping process. We define supermarket literacy as follows:

Supermarket literacy is the set of skills and knowledge that enable a consumer to locate, evaluate, and choose between product offerings in a supermarket in such a way that the consumer's shopping goals are fulfilled.

Brands affect consumer behaviour only to the extent that consumers possess brand knowledge (Keller, 1993). The major components of brand knowledge are brand awareness and brand image. Brand awareness is a prerequisite for more advanced forms of brand knowledge, but can also in itself serve a role in the shopping function when the brand serves as a recognition cue, mostly in the context of low involvement purchases (Macdonald & Sharp, 2000). Brand image, i.e., the associations the consumer has with the brand, are the basis for brand-based decision-making in the shop. Consumers with good supermarket literacy will be able to make use of brands in the supermarket because they are aware of the brand's existence and because they associate the brands – or at least some of them – with favourable associations. Thus, we formulate the following hypotheses:

H1: Consumers with a higher degree of supermarket literacy will be aware of more brands

H2: Consumers with a higher degree of supermarket literacy will have a more favourable brand image

To the extent brands can fulfil the function of reducing risk for the consumer (Erdem & Swait, 1998), they also help the consumer find a preferred brand. The supermarket literate consumer should hence be more likely to concentrate her/his purchases on a particular brand rather than distribute their purchases over many different brands, which would be more typical of a consumer who has less brand knowledge and generally is not as proficient in using brands to guide their choices. Hence:

H3: Consumers with a higher degree of supermarket literacy will concentrate their choices on a particular brand

Methodology

To test the hypotheses, we collected data by surveying consumers in China. As noted above, we use buying pork as the focal product category.

Data collection

Data collection was by means of paper-and-pencil questionnaires distributed to shoppers at selected supermarkets after they finished their shopping. Only shoppers who had bought pork during the shopping trip were interviewed. Shoppers were approached by personal interviewers and invited to contribute to the study, and were then seated at desks outside the cashier section of the supermarket. Participants received a small gift for their participation. Filling out the questionnaire took normally 15-20 minutes. Data was collected in three waves:

- 315 interviews were carried out in Shanghai in December 2013 at three stores of a major, foreign-owned supermarket chain with a medium-quality positioning
- 154 interviews were carried out in Shanghai in November 2014 at two stores of a major, Chinese-owned supermarket chain with a medium-quality positioning
- 154 interviews were carried out in Shenzhen in December 2014 at a store of a major, foreign-owned supermarket chain with a high-end quality positioning

Questionnaire development

The questionnaire contained sections measuring brand awareness, brand image, and purchase intention with regard to the brands. It also contained a scale measuring supermarket literacy and some other scales not used in the present paper, and it contained a section on demographic information.

The set of brands used in the questionnaire was customized based on a store audit in the three different types of stores. This resulted in the selection of eight brands (including fresh unbranded pork) for each of the three retail chains. For each of these brands, participants were asked whether they had seen them before, aided by a pictorial stimulus. This constituted the measure of *brand awareness*. For those brands the participants were aware of, brand image was measured by evaluating each brand on the following characteristics: taste, healthiness,

safety, trust in the brand, consistency of the quality, overall quality, and price, on seven-point semantic differential type scales. These brand associations were based on previous focus groups and previous research (Grunert, Loose, Zhao & Tinggaard, 2015). This constitutes the measure of *brand image*. Finally, purchase intentions with regard to the brands were measured by asking participants to distribute 10 points among the brands they were aware of, corresponding to 10 future pork purchases.

Supermarket literacy was measured by six items developed by the authors. These items, along with their means and standard deviations, can be seen in the appendix.

Results

The demographic composition of the sample can be seen in table 1. For the purposes of the following analysis, data from the three waves of measurement are pooled.

	Shanghai 2013	Shanghai 2014	Shenzhen
Gender			
• Male	31.7%	37.7%	19.5%
• Female	68.3%	62.3%	80.5%
Mean age	54.9	50.6	41.35
Education			
• Elementary school	4.2%	3.2%	0.6%
• Junior high	25.0%	18.8%	3.9%
• Senior high	41.3%	26.0%	26.6%
• Advanced	29.5%	51.9%	68.8%
Economic status			
• Difficult	1.9%	1.3%	0.6%
• Modest	72.6%	66.9%	49.4%
• Reasonable	23.9%	28.6%	42.9%
• Well-off	1.6%	3.2%	7.1%

Table 1: Demographic characteristics of study participants

Principal components analysis of the six items measuring supermarket literacy showed only one factor with an eigenvalue over 1, explaining 53% of the variance. The Cronbach's alpha of the composite score resulting from combining the six items was .82 and hence very satisfactory. Mean literacy was not significantly different between the samples taken at medium-level supermarkets in 2013 and 2014. Mean literacy of the sample at the high end supermarket in 2014 was higher than mean literacy of the medium-level supermarket in 2014 (mean difference=.35, $t=2.98$, $p<.01$). The supermarket literacy score turned out to be highly skewed, with a majority of participants expressing a high degree of supermarket literacy. The raw score was therefore transformed into an ordinal variable with four levels, based on quartiles. This variable will be used in the subsequent analysis.

Principal components analysis of the brand image data showed that the items all loaded onto one common factor with the exception of the price item. The remaining 6 items were hence, for each participant and each brand, combined into a composite brand image score.

The effect of supermarket literacy on brand awareness was tested by running an ANOVA with number of brands recognized as the dependent variable and the four levels of supermarket literacy as factor, controlling for level of education (elementary/junior high, senior high, advanced), gender, age and perceived economic situation (difficult or modest, reasonable or well-off). Age had a significant positive effect on number of brands recognized, whereas the other demographic variables had not. Literacy had a significant effect on number of brands recognized ($F_{610,3}=6.70, p=.000$). Further analysis showed that there was no difference in brand awareness between the two lowest levels, but that the number of brands recognized was higher at the third and especially fourth level. This relationship can be seen in figure 1. H1 is thus confirmed.

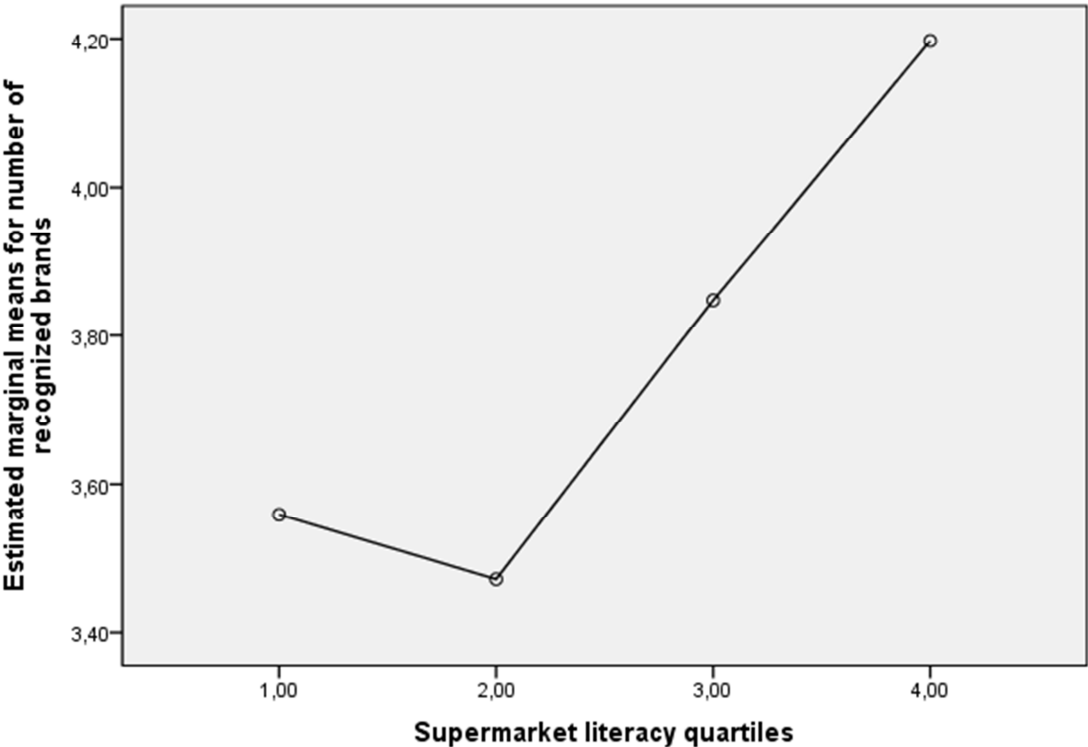


Figure 1: Relationship between supermarket literacy and brand awareness

In order to test H2, a linear mixture regression was estimated with brand image as the dependent variable, type of brand as the independent variable, and literacy as a covariate, with repeated measures on the brand image variable (estimated in Latent Gold). Brands were

classified as medium quality fresh, medium quality pre-packed, premium and imported. In addition, there was the unbranded fresh variety. A linear mixture model with latent classes was used in order to account for heterogeneity in brand image perception. Based on inspection of the information criteria AIC and BIC, a three class model was chosen. As the effect of literacy on brand image did not differ between the three classes, these parameters were constrained to be equal across the three classes. The results are in table 2.

	Class1	Class2	Class3	Wald	p-value	Wald(=)	p-value
Intercept	5.43	4.74	6.18	32850.09	.000	458.13	.000
Brand							
• unbranded	-0.62	-0.49	-0.09	332.18	.000	68.45	.000
• medium fresh	0.26	0.40	0.14				
• medium prepacked	-0.12	0.08	-0.02				
• premium	0.30	0.53	0.21				
• imported	0.17	-0.52	-0.23				
Supermarket literacy quartiles							
• 1st	-0.27	-0.27	-0.27	64.22	.000		.
• 2nd	0.00	0.01	0.01				
• 3rd	0.04	0.04	0.04				
• 4th	0.22	0.22	0.22				
R ²	0.27	0.15	0.13	0.48			
Class size	0.40	0.33	0.25				

Table 2: Effect of brand type and supermarket literacy on brand image

The three classes differ in their pattern of brand images. Classes 1 and 2 are both critical of the unbranded pork and positive about the premium brands; they differ mainly in their brand image of imported brands. Class 3 is not quite as negative about the unbranded product and is less positive about the premium brands. For all three classes, higher levels of literacy imply higher levels of brand image, confirming H2.

In order to test H3, the variation ratio was computed based on the purchase intention data for each participant, The variation ratio in this case could be simply defined as the number of points (out of 10) that were not allocated to the brand that received the highest number of points. An ANOVA with the variation ratio as dependent variable and the four levels of literacy as factor, again controlling for demographics, showed no significant effect of literacy, thus rejecting H3.

Discussion

In the present paper, we developed a measure of *supermarket literacy* and investigated links between levels of supermarket literacy and use of brands in the supermarket when buying fresh meat – brand awareness, brand image, brand-based purchase intentions. We found that higher levels of supermarket literacy are related to higher levels of brand awareness and more favourable brand images, but not to brand-based purchase intentions.

We proposed the concept of supermarket literacy because we believe there is a need for a theoretical construct that captures the possession of skills and knowledge relevant for handling different types of shopping environments. When shopping environments change – for example from wet open markets to supermarkets, or from supermarkets to online shopping – the necessary skills and knowledge also change, and consumers first have to acquire them, which is a process over time. When shopping environments change quickly, as is the case in present-day China, some consumers may adapt to those changes more rapidly than others.

The measure we propose in this paper is novel and the fact the find it related to measures of brand use provides some initial evidence of nomological validity. However, considerably more work needs to be done to establish the reliability and validity of the measure. This includes investigations of whether the present measure captures all relevant facets of the theoretical construct, and investigations of relationships to other relevant behaviours in supermarkets, like the ability to find items, and to relevant outcome measures, like shopping trip satisfaction (Esbjerg et al., 2012).

As noted we did find evidence that higher levels of supermarket literacy also imply more brand awareness and a more positive brand image. This seems to suggest that the more literate consumers adopt brand-based buying as part of their learning process, and that the brands available in the supermarket command so much trust that consumers dare relate to them. This is by no means evident in a market that has been ridden by food scandals, and where value chain governance in the provision of fresh produce is notoriously weak, making it more difficult to assure the level of clarity and credibility of the brand promise that is a prerequisite for successful branding. Analysis of a database of food safety events in Beijing indicated that 73.4% of the food safety problems in China occurred in the food production and processing stage, and in this process human factors play a decisive role (Liu, Liu, Zhang & Gao, 2015).

As consumers' brand awareness increases, supermarkets should pay attention to brand communication to consumers. The void caused by a lack of reliable information from

government agencies is filled with different voices from the internet and media. In today's new media era, food safety events will spread rapidly through emerging media channels such as micro-blogs, and messages forwarded by opinion leaders can quickly spread to a vast number of consumers, possibly undermining consumer trust and affecting consumers' brand awareness, brand image and purchase decisions (Peng, Li, Xia, Qi & Li, 2015).

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Appendix – supermarket literacy measure

Item	Mean	Std. Deviation
I find it easy to shop at a supermarket	2.04	1.506
I have no problems understanding the information that is printed on food packages	2.20	1.635
I can easily find the products I need in a supermarket	1.94	1.372
I find it easy to pay for the products that I bought at the cashier	2.30	1.696
I find it easy to see the prices of products in the supermarket	1.97	1.417
I have no trouble understanding when products are on promotion in the supermarket	2.33	1.665

Scale 1=strongly agree, 7=strongly disagree