

## New trends in the Chinese diet: cultural influences on consumer behaviour

Teresa Del Giudice,<sup>1</sup> Gianni Cicia,<sup>1</sup>  
Klaus G. Grunert,<sup>2</sup>  
Athanasios K. Krystallis,<sup>2</sup> Yanfeng Zhou,<sup>3</sup>  
Luigi Cembalo,<sup>1</sup> Fabio Verneau,<sup>1</sup>  
Francesco Caracciolo<sup>1</sup>

<sup>1</sup>Department of Agricultural Sciences, University of Naples Federico II, Portici (NA), Italy; <sup>2</sup>Department of Business Administration, Aarhus University, Aarhus C, Denmark; <sup>3</sup>Sun Yat-Sen University, Shengcheng, China

### Abstract

China is one of the most dynamic regions in the world in terms of economic growth and development. Such development has inevitably influenced the structure and habits of Chinese society. Whilst the economic condition of the middle class and high-income segment has steadily improved, cultural changes are also under way: ancient Chinese traditions now include major elements from other cultures, most notably the West. The above scenario is the background to this paper. A structured research-administered survey was developed to investigate the changes in the Chinese consumer food culture: 500 urban participants were randomly selected from six reference cities, covering geographically almost the whole country. This study aims not only to analyze the propensity of consumers to include food products from other countries in their ancient Chinese culinary culture, but also represents an initial attempt to perform a market segmentation of Chinese consumers according to their degree of cultural openness towards non-Chinese food, taking into account socio-demographic, cognitive and psychographic variables.

### Introduction

When considering emerging markets, China is one of the most dynamic regions in the world in terms of economic growth and development. It is no coincidence, therefore, that this area, together with India, Russia and Brazil, has become a significant challenge for companies from the *old continent* (Horwitz and Budhwar, 2015), generating extensive discussion also in academic circles on how best to exploit the new market opportunities.

Economic development has inevitably influ-

enced the structure and habits of Chinese society: while there is still a great disparity between the richer and poorer classes, a growing middle class and high-income segment have emerged (Cheung and Wu, 2012). These groups are changing in cultural terms, including major elements from other cultures, most notably the West, in the ancient Chinese tradition (Wang *et al.*, 2015). This broadening of cultural horizons is also affecting Chinese food consumption behavior: although the Chinese market has a gastronomic tradition which is profoundly different from its Western counterpart, the emerging social classes are expressing a growing demand for processed food, opening up to foreign influences, which are neither accepted with prejudice nor viewed passively. Therefore, the dynamic and vibrant food Chinese market is evolving, creating room for example for European products which are imbued not only with strong cultural value but also enjoy high standards of quality and food safety (Grunert *et al.*, 2011; Zhang *et al.*, 2012). Given the above scenario, a structured research-administered survey was developed to investigate the change in Chinese consumer food culture. The survey was one of the research activities of the Q-PorkChains EU FP6 Project, which focuses on the development of the European pork industry, testing and supplying innovations in order to improve global competitiveness. Our study had a twofold objective. The first was to analyse the propensity of consumers to include in their ancient Chinese culinary culture food products from other countries. The second was a first attempt to perform a market segmentation of Chinese consumers according to their degree of cultural openness toward non-Chinese food, with due consideration taken of socio-demographic, cognitive and psychographic variables. In particular, the applied framework relies on the analysis of *values* (Schwartz *et al.*, 2001) and *lifestyle* (Bruns and Grunert, 1995). This approach, far removed from the classic schemes, allows fairly objective consumer characterization with little influence from the researcher's assumptions and knowledge. In our study, the hypothesis being tested is that the propensity of consumers to consume *foreign* food products from countries (the dependent variable) is a function both of the socio-demographic characteristics of consumers and of the *values* of individuals and several dietary habits.

### Materials and Methods

#### Survey and data

A structured research-administered survey was developed to investigate Chinese consumer preferences. In all, 500 urban participants were randomly interviewed from six reference cities, representing extensive coverage

Correspondence: Teresa del Giudice, Department of Agriculture, University of Naples Federico II, via Università 100, 80055 Portici (NA), Italy. Tel: +39.081.2539096 - Fax: +39.081.7755143. E-mail: agriqual@unina.it

Key words: Chinese diet; Consumer behaviour; Food related life style.

Conflict of interest: the authors declare no potential conflict of interest.

Received for publication: 17 May 2015.  
Revision received: 10 September 2015.  
Accepted for publication: 14 September 2015.

This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC 4.0).

©Copyright T. Del Giudice *et al.*, 2016  
Licensee PAGEPress, Italy  
Italian Journal of Food Safety 2016; 5:5273  
doi:10.4081/ijfs.2016.5273

of the country's disparate regions: Nanjing, in the south-eastern coastal region, Chengdu, in the southwest, Wuhan in the middle, Changchun in the northeast, Beijing in the north, and Guangzhou in the south of China. Nevertheless, the field survey was restricted to two kinds of retailing: supermarkets and local markets. The data we will analyse come from five sections of the questionnaire: i) Schwartz Portrait Value Questionnaire (PVQ) questions (Schwartz *et al.*, 2001); ii) food-related lifestyle (FRL) (Bruns and Grunert, 1995); iii) a reduced version of the CETSCALE to measure ethnocentrism (Sharma, 2014); iv) consumer behavior related to pork consumption; v) socio-demographic characteristics of the respondent. Several approaches have been proposed to characterize and measure personal values. Among the most frequently used are the Rokeach value survey (RVS) (Rokeach, 1973) and the list of values (LOV) developed at the University of Michigan Survey Research Center (Beatty *et al.*, 1985). Schwartz (1992) defined ten values, namely: self-direction, stimulation, hedonism, achievement, power, security, conformity, tradition, universalism and benevolence. The ten values are abstract guides in human life and are able to fulfill three essential needs: i) those of individuals as a biological organism; ii) requisites of social interaction; iii) and the survival and welfare needs of the group (Schwartz, 1992). The PVQ was implemented using the theory of Schwartz and subsequently validated at the international level (Saris *et al.*, 2013). The instrument consists of 56 operational items. Each provides a brief description (portrait) of the individual goals, aspirations or desires. Everything is structured so that it can describe

the above values proposed by Schwartz, represented in a circular spatial way, organized in two pairs of different and opposite dimensions: *openness to change vs conservation*; *self-transcendence vs self-enhancement*. Values that are juxtaposed in the circular structure are similar in terms of meaning. The relationship between values, attitudes and behavior has been widely investigated (Bernard *et al.*, 2003; Dreezens *et al.*, 2005; Thøgersen and Ölander, 2002) and the flow of causality that seems to emerge from different studies is from values through attitudes to behavior, so that values have an impact on attitudes, which in turn influence behavior (Homer and Kahle, 1988, Maio and Olson, 1994). However, the relation between values and behavior seems to be indirect. Individual values influence behavior mostly indirectly through mediator variables. The intermediate level is played by food-related values, attitudes or lifestyles related to food consumption (Maio and Olson, 2004; Brunso and Grunert, 1995). Among the different mediators proposed to improve the relationship between values and behavior in the food area is the FRL construct defined as *the system of cognitive categories, scripts and their associations which relate a set of products to a set of values* (Grunert, 1993; Brunso and Grunert, 1995).

The hypothesis that FRL could be used as moderators in the relationship between values and food-related behaviors was first tested in two studies (Brunso *et al.*, 2004), using the so-called LOV instrument (Beatty *et al.*, 1985). Both studies confirmed the role of the FRL construct as mediators. Brunso, Scholderer and Grunert (2004) used the more sophisticated and complex Schwartz value survey (SVS). Their analysis confirms the influence of values on attitudinal constructs such as FRL, having found a meaningful relationship between values and FRL in Spain, Germany and Asia

(Grunert *et al.*, 2011). In this study, FRL variables were used to segment consumers and build a profile through the knowledge of their actual, or also perceived, way of life. The model assumes that the approach to the different individual life dimension is related to a specific mental construct that often does not identify the real lifestyle. The theoretical approach (Brunso and Grunert, 1995) was implemented operationally through the construction of an instrument, validated for inter-cultural analysis, capable of binding the cognitive structure of consumers and the food choices of these values. The five cognitive categories identified are: i) buying patterns – the importance of product information, sensitivity to advertising, price sensitivity, purchase impulses or shopping lists; ii) methods of food preparation – for the culinary appetite, looking for innovative techniques and recipes, ready meals, improvisation; iii) quality aspects – health, value for money, news, organic products, taste and freshness; iv) consumption situations – rapid consumption *vs* full meals; v) buying motivations – personal satisfaction, security, social relations. A reduced version of the CETSCALE (Sharma, 2014) to measure ethnocentric attitudes was also used in the questionnaire. More specifically a six-item scale related to the *hypothetical* negative impact of foreign products on the local economy/local employment was used. In other words, the consumption of products from other countries could be considered wrong because it could have a negative impact on the local economy/local employment (Table 1). One part of the questionnaire was devoted to pork consumption habits. In one of the questions, consumers were asked which drinks could go with pork. The alternatives included Chinese wine *vs* non-Chinese wine. China is at present ranked fifth in the world for red wine consumption. In the Chinese market

more than half of this product is produced domestically, but there are also imported wines widely available, especially from France and the US, which have a higher reputation than locally produced wines (Muhammad *et al.*, 2014).

### Methodology and empirical framework

In this study, the hypothesis being tested is that the propensity of Chinese consumers to consume *foreign* food depends on dietary habits (FRL), *values* of individuals (PVQ), ethnocentric attitudes, and the socio-demographic characteristics of consumers. The statistical model adopted is that of *multinomial logit*. This model represents a generalization of the logit model when the dependent variable may assume more than two outcomes that are not ordered. In this paper, the dependent variable consists of a set of four cases:

The model assumes that the probability of the response for the *i*-th observation being equal to the outcome *g* is as follows:

$$\pi_{ig} = Prob(y_i = g) = \begin{cases} \frac{1}{1 + \sum_{g=2}^G \exp(x_i \beta_g)} & \text{if } g = 1 \\ \frac{x_i \beta_g}{1 + \sum_{g=2}^G \exp(x_i \beta_g)} & \text{if } g > 1 \end{cases}$$

where  $x_i$  is the vector of explanatory variables characterizing the *i*-th respondent, and  $\beta_g$  is the vector of unknown parameters for outcome *g* obtained by the maximum likelihood estimator (Greene, 2012). The dependent variable was constructed using the scores assigned by consumers to six different items included in the food-related lifestyle section chosen among those most related to the research aims (Table 2).

**Table 1. Ethnocentric scale.**

Statement	Mean	SD
Buying goods made in China helps the circulation of China's economy	5.26	1.23
Buying goods made in China supports local economy and employment	5.43	1.14
A real Chinese person should always buy products which are made in China	4.79	1.46
We should buy products which are made in China and not let other countries prosper before us	4.38	1.55
Chinese consumers who buy products made in other countries may be considered responsible for their Chinese compatriots losing jobs	3.83	1.46
Chinese products are the first and most important choice	4.94	1.39

SD, standard deviation. Cronbach's alpha=0.85.

**Table 2. Items used for the dependent variable.**

Statements	Mean	SD	
<i>New way</i> (Likert scale 1-7)*	I love to try recipes from abroad	4.95	1.34
	I like to try new recipes	4.86	1.35
	I look for various ways to prepare uncommon meals	4.84	1.43
<i>Security</i> (Likert scale 1-7)°	I dislike anything that may change my habits in food and drink	4.62	1.56
	I only buy and eat the food I know well	5.76	1.43
	Dishes that I am familiar with give me a sense of security	5.16	1.4

\*Cronbach's alpha: 0.60; °Cronbach's alpha: 0.54.

## Results and Discussion

According to the average scores assigned by the consumers to the factors *new way* and *security* (including 6 items), the sample was divided into three tertiles for each of the two factors used (high/average/low score for *new way*; high/average/low score for *security*). This procedure gave us four classes of consumers: traditionalist, high score for *new way* and low score for *new way*; indifferent, average score for both *security* and *new way*; nationalist, innovators-high score for both *security* and *new way*; innovator, high score for *new way* and low score for *security*.

The adopted approach allows a first Chinese market segmentation according to the categories described above, showing the propensity of consumers to foreign food.

As shown in Table 3, innovators represent over 14.2% of the sample, 21.75% of the sample can be identified as nationalist-innovators, while 41.75% are indifferent and 22.34% of the sample can be termed traditionalists.

The gradient of the propensity to foreign food shown in this segmentation may be considered as an indirect index of change and openness that is affecting the economy and Chinese society. In this context, identification of a segment of *pure* innovators of around 14%, consumers ready for *exotic* tastes and perceptions, confirms the potential of the Chinese market as a potential destination for European food products in general and for Italian products in particular. The market share increases if we include the first mentioned segment, that of nationalist-innovators, thus constituting a potential market of more than 1/3 of the total population.

The explanatory variables are divided into four groups: i) PVQ; ii) ethnographic attitude; iii) behaviour toward national and international wine; iv) socio-demographic variables.

Principal component analysis with orthogonal (Varimax) rotation was performed on the 10 Schwartz values obtained from the PVQ

answers collected in the questionnaire. The scores of the extracted factors were subsequently interpreted following the meta-value dimensions and included as regressors in the econometric model.

Table 4 shows Schwartz metavalues obtained from the polymerase chain reaction: i) *conservation* (comp. 1); ii) *openness to change* (comp. 2); iii) *self-enhancement* (comp. 3); iv) *benevolence* (comp. 4). Estimated meta-values are consistent with the Schwartz circle (Schwartz *et al.*, 2001).

The socio-economic variables used in the econometric model and statistically significant in at least one model are as follows: i) *age*; ii) *gender*; and iii) *living in rural areas*.

Also a variable related to preferences for Chinese *vs* foreign wine was used. Our hypothesis is that the choice between Chinese wine and imported wine is, among other factors, affected by values such as traditionalism.

Table 5 shows the results of the estimates of the parameters, indicating the direction and magnitude of the statistical associations between the explanatory variables (*x* vectors) and the probability for the *i*-th respondents to be assigned to the *g*-th group or  $\text{Prob}(y_i=g)$ . The group of traditionalists, which makes up 22.34% of the sample, shows a positive association with the Meta value, which includes the conservation values, namely tradition, conformity and security. This meta-value emphasizes order, self-restriction, preservation of the past, and resistance to change. This segment of consumers tends to be older: if they had to

choose a wine to go with pork they would buy a Chinese wine.

The group of nationalist-innovators, which makes up 21.71% of the sample shows a positive association with the meta-value of *self-enhancement*, including achievement and power values. This meta-value emphasizes pursuit of one's own interests and relative success and dominance over others. This group of consumers is highly ethnocentric and lives in urban areas.

The last group, that of innovators (14.2% of consumers in the sample), shows a positive association with the meta-value *openness to change*, which includes stimulation and self-direction. Centered on independence and readiness for change this meta-value emphasizes independence of thought, action, and feelings and readiness for change. This group sees the prevalence of the female gender, and has a negative correlation with ethnocentric attitudes.

## Conclusions

The analysis presented in this study on the propensity for innovation in the food habits of Chinese consumers provided interesting insights, despite showing some limitations. The latter concern essentially the sample that, albeit representative of heavily urbanized areas of the country, is really small compared to the Chinese population of one billion. This

Table 3. Propensity to foreign food, sample share of the categories.

Segment	Sample share (%)
Innovator	14.2
Nationalist-innovator	21.71
Indifferent	41.75
Traditionalist	22.34
Total	100

Table 4. Principal component analysis loading matrix.

	Component 1	Component 2	Component 3	Component 4	Unexplained
Benevolence	-0.04	-0.08	-0.03	0.83	0.15
Universalism	0.38	0.15	-0.11	0.24	0.30
Self-direction	0.07	0.75	-0.13	-0.08	0.20
Stimulation	-0.19	0.58	0.24	-0.02	0.31
Hedonism	0.07	-0.09	0.61	0.11	0.33
Achievement	-0.06	0.19	0.30	0.39	0.34
Power	0.03	0.01	0.65	-0.13	0.36
Security	0.41	0.13	-0.13	0.19	0.34
Conformity	0.49	0.07	0.03	-0.03	0.39
Tradition	0.63	-0.12	0.14	-0.17	0.25

Table 5. Multinomial logit estimates.

		Coefficient	SD	z	P
Traditionalist (high score for <i>Security</i> and low score for <i>New way</i> )	Conservation	0.58	0.13	4.37	0
	Openness to change	-0.13	0.15	-0.88	0.38
	Self-enhancement	-0.1	0.14	-0.73	0.46
	Benevolence	-0.16	0.15	-1.09	0.27
	Age	0.02	0.01	1.73	0.08
	Gender	-0.45	0.31	-1.44	0.15
	Living in rural areas	-0.17	0.15	-1.14	0.25
	Chinese wine	0.7	0.31	2.26	0.02
	Ethnocentrism	0.19	0.16	1.2	0.23
	Constant	-2.48	0.92	-2.71	0.01
Nationalist-innovator (high score for both <i>Security</i> and <i>New way</i> )	Conservation	-0.09	0.12	0.8	0.43
	Openness to change	0.13	0.13	1.01	0.31
	Self-enhancement	0.21	0.12	1.74	0.08
	Benevolence	0.23	0.17	1.38	0.17
	Age	0.01	0.01	0.55	0.58
	Gender	0.26	0.27	0.96	0.34
	Living in rural areas	-0.35	0.14	-2.44	0.02
	Chinese wine	-0.28	0.26	-1.05	0.29
	Ethnocentrism	0.6	0.14	4.32	0
	Constant	-3.64	0.84	-4.34	0
Innovator (high score for <i>New way</i> and average or low score for <i>Security</i> )	Conservation	0.01	0.11	0.04	0.97
	Openness to change	0.27	0.12	2.28	0.02
	Self-enhancement	-0.07	0.12	-0.59	0.55
	Benevolence	-0.03	0.12	-0.27	0.79
	Age	-0.01	0.01	-0.71	0.48
	Gender	0.41	0.26	1.61	0.11
	Living in rural areas	-0.17	0.13	-1.31	0.19
	Chinese wine	-0.26	0.25	-1.03	0.3
	Ethnocentrism	-0.21	0.13	-1.6	0.11
	Constant	0.39	0.72	0.54	0.59

SD, standard deviation.

problem is not extremely significant when considering some further aspects: the extent of economic and social disparities in China, the lack of knowledge of the Chinese market currently possessed by analysts and Western food business operators. For the above-mentioned factors, this study can be considered an initial analysis to investigate the ancient, diverse and little-known Chinese culture. Moreover, from a marketing strategic point of view, it would be not very useful to investigate the rural population, still in an early stage of economic development and cultural openness.

Within the limits of the proposed analysis, the results seem to confirm the major potential of certain segments of the Chinese market (namely, the urban middle class and upper income bracket) as a destination for quality Western products. Identifying the segment of *pure* innovators – the consumers ready to buy and consume foreign foods – by three types of variables (FRL, PVQ and socio-demographic) provides valuable information not only for analysts but also for food business operators in the West and in Italy in particular.

In addition, using a cognitive, modern approach in market segmentation provides an *open-minded* Chinese consumer profile that is very useful for the implementation of policies for specific marketing and promotion strate-

gies. The analysis also assumes a major role if we consider the level of closure that characterized China in the past and the presence of a strong and meaningful cultural identity in all dimensions of Chinese existence. Therefore, the challenge of any marketing strategy for penetrating the Chinese market will rely on offering a different approach to life.

Latent demand for *Westernization* is growing in all emerging countries. From a marketing point of view, this opportunity could well be captured by food products, which can confer valuable intangible characteristics such as a different life-style and a feeling of modernity.

## References

- Beatty SE, Kahle LR, Homer P, Misra S, 1985. Alternative measurement approaches to consumer values: the list of values and the Rokeach value survey. *Psychol Market* 2:181-200.
- Bernard MM, Maio GR, Olson JM, 2003. The vulnerability of values to attack: inoculation of values and value-relevant attitudes. *Pers Soc Psychol B* 29:63-75.
- Brunso, K, Grunert, KG, 1995. Development and testing of a cross-culturally valid instrument: food-related life style. *Adv Consum Res* 22 475-80.
- Brunso K, Scholderer J, Grunert KG, 2004. Closing the gap between values and behavior: a means-end theory of lifestyle. *J Bus Res* 57:665-70.
- Cheung S, Wu DY, 2012. *Globalization of Chinese food*. Routledge, Abingdon-on-Thames, UK.
- Dreezens E, Martijn C, Tenbült KG, de Vries NK, 2005. Food and values: an examination of values underlying attitudes toward genetically modified- and organically grown food products. *Appetite* 44:115-22.
- Greene WH, 2012. *Econometric analysis*. 7th ed. Prentice Hall Inc., Boston, MA, USA.
- Grunert KG, 1993. Towards a concept of food-related lifestyle. *Appetite* 21:51-5.
- Grunert KG, Perrea T, Zhou Y, Huang G, Sørensen BT, Krystallis A, 2011. Is food-related lifestyle (FRL) able to reveal food consumption patterns in non-Western cultural environments? Its adaptation and application in urban China. *Appetite* 56:357-67.
- Homer PM, Kahle LR, 1988. A structural equation test of the value-attitude-behavior hierarchy. *Pers Soc Psychol B* 54:638-46.
- Horwitz F, Budhwar P, 2015. *Handbook of human resource management in emerg-*

- ing markets. Edward Elgar Publ, London, UK.
- Maio GR, Olson JM, 1994. Value-attitude-behavior relations: the moderation role of attitude functions. *Brit J Soc Psychol* 33:301-12.
- Muhammad A, Leister AM, McPhail L, Chen W, 2014. The evolution of foreign wine demand in China. *Aust J Agr Res* 58:392-408.
- Rokeach M, 1973. *The nature of human values*. Free Press, New York, NY, USA.
- Saris WE, Knoppen D, Schwartz SH, 2013. Operationalizing the theory of human values: balancing homogeneity of reflective items and theoretical coverage. *Surv Res Method* 7:29-44.
- Schwartz SH, 1992. Universals in the content and structure of values: theoretical advance and empirical tests in 20 countries. *Adv Exp Soc Psychol* 25:1-60.
- Schwartz SH, Melech G, Lehmann A, Burgess S, Harris M, Owens V, 2001. Extending the cross-cultural validity of the theory of basic human values with a different method of measurement. *J Cross Cult Psychol* 32:519-42.
- Sharma P, 2014. Consumer ethnocentrism: reconceptualization and cross-cultural validation. *J Int Bus Stud* 46:381-9.
- Thøgersen J, Ölander F, 2002. Human values and the emergence of a sustainable consumption pattern: a panel study. *J Econ Psychol* 23:605-30.
- Wang O, De Steur H, Gellynck X, Verbeke W, 2015. Motives for consumer choice of traditional food and European food in mainland China. *Appetite* 87:143-51.
- Zhang C, Bai J, Wahl TI, 2012. Consumers' willingness to pay for traceable pork, milk, and cooking oil in Nanjing, China. *Food Control* 27:21-8.

Non commercial use only