Influential Article Review - Feature Measurement Models and Natural Product Choice Effect

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This paper examines innovation. We present insights from a highly influential paper. Here are the highlights from this paper: Face in China is a well-known word but still lacks a precise and authoritative definition. Other than the counterpart connotation of social norms in western culture, Chinese face is also a cultural construct strongly connected with situational context. To explore the general context and the specific connotation of Chinese face, this paper focuses on comparing the difference between reflective model and formative model when measuring the construct of Chinese face. We find that RM is more reliable and stable than FM in terms of face measurement but is inferior to FM in explaining the connotations of Chinese face. Moreover, we also explore the effects of different dimensions of Chinese face on consumer preference for ecological products. This study not only enriches the existing research on Chinese face, but also exploratively answers a controversial problem in this area. Furthermore, the findings in this study also provide theoretical support for building an environmentally-friendly society in China. For our overseas readers, we then present the insights from this paper in Spanish, French, Portuguese, and German.

Keywords: Face, Reflective Model (RM), Formative Model (FM), Ecological Product Preference

SUMMARY

- This paper innovatively explores both the advantages and disadvantages embedded in the reflective model and formative model in constructing face, and furthermore, analyzes the effect on ecological product preference of various dimensions of Chinese face. Initially study 1 finds through empirical study that the RM of face has a better reliability.
- In terms of theoretical contributions, first, this paper explores the differences between measurement models of face and their influence, diminishing the confusion about choosing a model to measure face. As a vital component of eastern traditional culture, with both situational characteristics and general characteristics, face is extremely difficult to measure. In some cases, scholars emphasize situational indicators to increase accuracy of measurement. Nevertheless, most use general indicators to increase stability. Therefore there simultaneously exists FM of face and RM of face. Choosing the right measurement model is essential for a thorough understanding of a construct. It influences the corresponding empirical study and usage of a structural equation model. Moreover,

specifying measurement models contributes to promoting Chinese scholars' empirical studies. Most scholars are keen to argue about causal variables of face as a whole concept, such as the effect of face on the consumption of luxury goods and exclusive goods. Yet most studies put the dimensions of face and measurement models aside. Because every researcher has his or her own definition of face, lacking consideration of measurement models, they unintentionally adopt RM, a classic analysis paradigm. Addressing this gap in marketing research, this paper offers a new point of view to examine the detailed dimensions of face and its measurement, as well as develop a better understanding of the connotations of face. Also, this paper provides out-of-the-box thinking for subsequent scholars in exploring and selecting measurement models, with more scientific evidence to explain the mechanisms of face.

- In addition, we further test the difference between LIAN and MIAN and their causal effects on consumer behavior. In Chinese traditional culture, consumption is not only a personal activity, but also a tool to gratify upper-class social needs. Products undoubtedly have instrumental functions, and yet people purchase them because of what they mean, too. Solomon argued that product purchases are relevant to social status, for people normally judge others by the products they own. Face consists of two dimensions, LIAN and MIAN. The former refers to image and reputation recognized by others gained because of obeying moral norms and coming from inner morality and self-constraint. However, the latter refers to external personal success and social status, as recognized by the social group. Even though it is universally believed that face is a multidimensional construct, most studies take face as a whole concept to analyze its relationship to luxury goods consumption, gifts consumption, human consumption and conspicuous consumption.
- This paper presents a discussion on two measurement models self-responsibility by which individuals hope to maintain their inner moral standards and avoid feelings of guilt. For the first path, companies can appropriately prompt consumer inclination to moral or ecological products, by highlighting the advantages of the other attributes or halo effect. Even though morality-oriented face affects the interest in ecological products through the second and third pathways, the paper did not discuss these mechanisms.
- Environmentally friendly vehicles are selected as the object of study. Nonetheless cars belong to consumer goods which are consumed in public. Scholars believe that the second path produces its effect only in public.

HIGHLY INFLUENTIAL ARTICLE

We used the following article as a basis of our evaluation:

Schot, J., & Steinmueller, W. E. (2018). Three frames for innovation policy: R&D, systems of innovation and transformative change. *Research Policy*, 47(9), 1554-1567.

This is the link to the publisher's website:
https://www.sciencedirect.com/science/article/pii/S0048733318301987

INTRODUCTION

People often behave similarly to those around them but sometimes also want to be different from others because of the identity signaling effect (Berger and Heath 2007; Chan et al. 2012). This is a worldwide phenomenon emerging not only in the west but in eastern countries such as China as well. However, compared to social identity in the west, people in eastern cultures are more likely to be concerned about faces. They care more about others' opinions and the social effects resulting from their own behavior. This kind of social effect manifests as face (Li and Su 2007). Not only is it something to be gained through human interaction with specific situational characteristics (Ho 1976; Zhou et al. 1993; Hwang, et al. 2002), face also expresses some stable individual characteristics (Chen 1982). So far, even though research on face

has attracted numerous scholars, the meaning and dimensions of face remain unsettled, and a universal definition with popular recognition is lacking. Therefore, researchers incline to use their own measurement methods to explain faces. For example, Zhang (2012) uses a reflective model (RM), which consists of generalized indicators, while Bao and Zhao (2009) and Shi et al. (2012) use a formative model (FM) constructed from situational indicators instead. In fact, both models have advantages and disadvantages in consistency and the interpretation of latent variables with their differences shown through empirical studies (Diamantopoulos and Winklhofer 2001). Scholars in China and abroad have shown more interest in both RM and FM in recent years. Zhou et al. (2007) studied the relationship between suppliers and retailers in Chinese marketing channels which led to a discussion about testing the internal validity and discriminant validity of a formative scale. As well, when exploring the dependence and conflicts in China's marketing channels, Zhou et al. (2007) specified that the measurement of dependence of suppliers on retailers is formative and vice versa. However, few scholars have discussed the utilization of FM and RM with regards to research on face.

In addition to research on measurement tools, research on the effect of face on ecological consumption is also insufficient. The rapid increase of poor air quality in many areas in China has triggered enormous social consciousness. Unprecedentedly, reference to one type of air pollution, PM2.5, was included in the 2012 official government work report. Ecological consumption consequently generated considerable interest from the Chinese government and scholars as a way to address current pollution problems. As a matter of fact, Chinese consumers' consumption is deeply influenced by face culture (Jap 2010). Nevertheless, most existing research concentrates on luxury goods consumption (e.g. Bearden and Etzel 1982; Wong and Ahuvia 1998; Zhang 2012) instead of ecological consumption. Importantly, Shi et al. (2014) preliminarily have shown that the concept of face has strong predictability for ecological consumption as a moderator, while four separate dimensions of face fail to show the same moderating effect. The authors suggest two possible explanations: conceptual reason and methodological reason. The conceptual explanation is mainly rooted in the integrity, coordination, simultaneity and dynamics of face consciousness, indicating that face is a concept that cannot be divided. On the other hand, a methodological explanation notes that at present, no scales and models for measuring face are generally accepted. Thus, if one is seeking to understand the underlying mechanism between face and ecological consumption, an important first step is to locate a more scientific and precise scale.

This paper aims to resolve two problems with research on face. First we examine the advantages and disadvantages of FM and RM. We examine the use of a RM of face in study 1. Then, in study 2, we run an empirical test to compare RM and FM particularly with regards to stability and validity. By selecting a better measurement scale as a result of study 2, we expect that the connection between face and ecological consumption will be more understandable. Hence, we will investigate the effect of face on ecological product preference in study 3.

CONCLUSION

This paper innovatively explores both the advantages and disadvantages embedded in the reflective model (RM) and formative model (FM) in constructing face, and furthermore, analyzes the effect on ecological product preference of various dimensions of Chinese face. Initially study 1 finds through empirical study that the RM of face has a better reliability. Then, based on an existing FM of face (Shi et al. 2012), study 2 contrasts these two measurement models with regards to their stability and interpretation of face. Finally, according to the results from study 2, four generalized indicators of four dimensions of face were analyzed as grouping variables for study 3, so as to test whether different dimensions have differentiated effects on consumers' tendency to purchase ecological products.
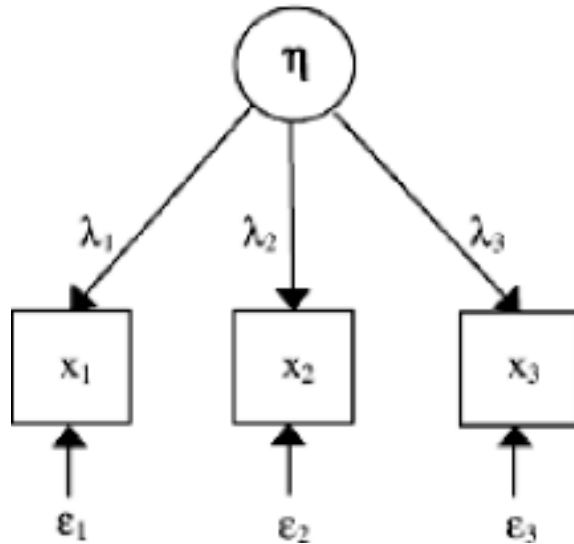
Conclusions are as follows: 1) In study 1, the RM of face is verified as having high reliability, and is made up of four factors, namely, morality-oriented face, ability-oriented face, status–oriented face and social relationship-oriented face. 2) We conclude from study 2, RM has greater stability; however, FM is better at interpreting the concept of face. As well, the incremental four generalized indicators of the four dimensions show positive significance with the overall concept of face, along with explained variance R^2

at 34.6%. 3) Study 3 deepens study 2 and shows that the separated dimensions of face exert various impacts on consumer ecological product preference. Consumers who have a stronger morality-oriented face (LIAN) rather than social-oriented face (MIAN) are more likely to purchase ecological products.
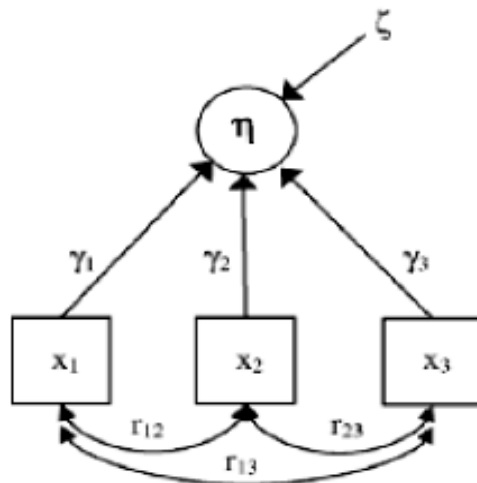
APPENDIX

FIGURE 1
REFLECTIVE MODEL (RM)

Formulation: $\mathcal{X}_i = \lambda_i \eta + \varepsilon_i$

FIGURE 2
FORMATIVE MODEL (FM)

Formulation: $\eta = \gamma_1 \mathcal{X}_1 + \gamma_2 \mathcal{X}_2 + \cdots + \gamma_i \mathcal{X}_i + \zeta$

TABLE 1
SUMMARY OF MEASUREMENT SCALES ON FACE

Scholars (year)	Genre of measurement scale	Item number	Dimensions
Chen (1982)	RM	40	Love face (i.e. concerned about face a lot), Thin face (i.e. easy to feel ashamed when losing face)
Chou (1996)	RM	50	Protective face orientation, Acquisitive face orientation
Chan et al. (2009)	RM	8	Concern for face
Bao and Zhao (2009)	FM	35	Ability-based face need, Relationship-based face need and Morality-based face need
Shi et al. (2012)	FM	22	Morality-oriented face, Ability-oriented face, Status-oriented face and Social relationship-oriented face
Zhang et al. (2012)	RM	11	Desire to gain face, Fear of losing face

TABLE 2
MEASURE INDICATORS COMBINED WITH PREVIOUS FINDINGS AND IN-DEPTH INTERVIEWS

Indicators	Detail description	Source
GF1	I hope that I can solve problems others cannot.	Zhang (2012)
GF2	I long to possess something people desire to own but do not.	
GF3	I want others to think well of me.	
GF4	I hope I can let others know I have some friends with high status.	
GF5	I hope in others' eyes, I have a better life than the majority.	
GF6	I will try my best to conceal my drawbacks in front of others.[b]	
GF7	I am concerned about others' attitudes towards me.	Chan et al. (2009)
GF8	I am concerned about others' criticism towards me.	
GF9	I am concerned about others' looking down upon on me.	
GF10	My identity and social status are essential to myself.[b]	

GF11	What I consume should correspond to my identity and social status.[b]	Li and Su ([2007])
GF12	When buying a gift for someone, I am usually concerned about the prestige of the gift.[a]	
GF13	I hope in others' opinion, I perform better than the majority.[b]	Organized by in-depth interviews
GF14	I hope compared with others' possessions, I own something of higher class.	
GF15	I think no matter how hard it is, one should maintain the same consumption level as others.[b]	
GF16	I hope I know a lot of people.	
GF17	I hope I have friends with high status.	
GF18	I hope my friends will give me a hand unhesitatingly when I have trouble.[a]	
GF19	I hope I can have good conversation and interaction with others during social activities.	
GF20	I hope I can behave well.	
GF21	I hope I can become a model others look up to.	
GF22	I pay attention to my performance in public.[a]	
GF23	I am concerned about whether what I do accords with my identity.	
GF24	I am concerned about whether my behavior meets the social norms.	
GF25	If I do something indecent, I will feel embarrassed.	

Notes. [a]indicates that the question was excluded after SPSS reliability analysis; bindicates that the question was excluded after LISREL exploratory analysis

TABLE 3
17 MEASUREMENT INDICATORS OF EXPLORATORY FACTOR ANALYSIS

Factors	Indicators	Factor loadings	CITC	Cronbach's α	Eigenvalues	Interpretable variance
Factor 1	GF3	0.76	0.871	0.898	7.88	35.84%
	GF7	0.82	0.860			
	GF8	0.82	0.859			

	GF9	0.72	0.882			
Factor 2	GF4	0.71	0.733	0.792	2.55	11.60%
	GF16	0.62	0.741			
	GF17	0.87	0.648			
	GF19	0.53	0.807			
Factor 3	GF1	0.52	0.840	0.827	1.83	8.33%
	GF2	0.81	0.731			
	GF5	0.62	0.817			
	GF14	0.80	0.722			
Factor 4	GF20	0.53	0.789	0.799	1.50	6.80%
	GF21	0.52	0.790			
	GF23	0.74	0.737			
	GF24	0.75	0.734			
	GF25	0.71	0.745			

TABLE 4
RELIABILITY AND VALIDITY ANALYSIS RESULTS FOR THE RM OF FACE

Latent variable	Dimensions	Indicators	Factor loadings	CITC	Composite reliability	Cronbach's α	Overall Cronbach's α
Face	Morality-oriented face	RMF1	0.85	0.773	0.875	0.873	0.899
		RMF2	0.81	0.704			
		RMF3	0.79	0.734			
		RMF4	0.64	0.615			
		RMF5	0.72	0.686			
	Ability-oriented face	RMF6	0.70	0.662	0.873	0.871	
		RMF7	0.74	0.711			
		RMF8	0.91	0.812			
		RMF9	0.82	0.720			
		RMF10	0.91	0.840	0.9114	0.910	

	Status-oriented face	RMF11	0.88	0.819			
		RMF12	0.82	0.787			
		RMF13	0.78	0.746			
	Social Relationship-oriented face	RMF14	0.77	0.722	0.899	0.898	
		RMF15	0.88	0.816			
		RMF16	0.83	0.769			
		RMF17	0.84	0.790			

TABLE 5
AVE AND CR OF THE RM OF FACE

	Morality-oriented face	Ability-oriented face	Status-oriented face	Social relationship-oriented face
Morality-oriented face	0.7656			
Ability-oriented face	0.312[a]	0.7966		
Status-oriented face	0.306[a]	0.463[a]	0.8490	
Social relationship-oriented face	0.309[a]	0.414[a]	0.403[a]	0.8310
AVE	0.5861	0.6345	0.7208	0.6905

Notes. [a]indicates the two-tailed tests are significant at the 0.01 level. The value on the diagonal is the square root of AVE, and below the diagonal is correlation coefficient value between latent variables

TABLE 6
INDICATORS FOR JUDGING THE GOODNESS OF FIT FOR FM

Category	Content	Judgments
Statistically Significant Index	-Significance of latent variable index weighted coefficient γ	-T value is significant, and the absolute value is greater than 1.96
	-Significance of latent variable path coefficients	-T value is significant, and the absolute value is greater than 1.96
	-Chi-square significance	-should not be significant
	-GFI	-ideal value is greater than 0.9
Statistical Validity Index	-latent variable index weighted coefficient γ	-generally greater than 0.6, preferably greater than 0.7

	-latent variables standardized path coefficient	-generally greater than 0.2, preferably greater than 0.3
	-regression coefficient of determination (R^2)	-generally greater than 0.2

TABLE 7
INDICATORS FOR THE FM OF FACE AND INCREMENTAL GENERALIZED MEASUREMENT INDICATORS

Dimensions	Indicators	Description
Morality-oriented face	FMF1	I behave indecently in public.
	FMF2	I was told that I am immoral.
	FMF3	I have uncivilized behavior.
	FMF4	Bad habits are known by others.
	FMF5	I quarrel with others in public.
	FMF6	I have no shame, doing something low and cheap.
Ability-oriented face	FMF7	Compared with my peers, I lead a worse life.
	FMF8	My child or I am not able to enter a university.
	FMF9	I am bad at learning/working.
	FMF10	Friends are talking about a topic that I know nothing about.
Status-oriented face	FMF11	I work in a small company.
	FMF12	My income is low.
	FMF13	My housing conditions are poor.
	FMF14	I always take a crowded bus to work.
Social relationship-oriented face	FMF15	People openly criticize me.
	FMF16	I get refused when turning to people for help.
	FMF17	I don't bring enough money when treating others to a meal.
Generalized measurement indicators	ALLF1	In daily life, I care about my own face.
	AMF1	When my conduct is questioned by others, I feel I have no face.
	AAF1	When I am not as capable as others, I feel I have no face.

	ASF1	When I do not have the same social status as others, I feel no face.
	ARF1	When I am embarrassed in social interactions with others, I feel I have no face.
	ALLF2	Generally, I think I care about face a lot.

TABLE 8
COMPARISON OF THE RESULTS OF SMART-PLS

Dimensions	Measurement indicator	Reflective model (RM)		Formative model (FM)	
		Factor loadings λ	T value	Weighted coefficient γ	T value
Morality-oriented face	MF1	0.7955	8.3149	−0.0689	0.5655
	MF2	0.7196	5.9639	0.6438	4.6195
	MF3	0.7822	8.0402	0.2782	2.0404
	MF4	0.8249	11.3884	0.0710	0.7318
	MF5	0.8786	12.9011	0.0858	0.8057
	MF6			0.2346	2.0409
	CR	0.8997			
	AVE	0.6430			
Ability-oriented face	AF1	0.7844	15.6330	0.2490	2.0040
	AF2	0.8308	22.5111	0.2170	1.3950
	AF3	0.9029	40.1336	0.2442	1.8698
	AF4	0.8720	22.8262	0.5043	4.3079
	CR	0.9113			
	AVE	0.7203			
Status-oriented face	SF1	0.9217	66.0711	0.3830	2.2965
	SF2	0.9070	51.0724	0.0636	0.3246
	SF3	0.8594	25.0973	0.5008	2.6671
	SF4	0.8626	36.8282	0.1756	1.2490
	CR	0.9372			

	AVE	0.7887			
Social relationship-oriented face	RF1	0.8569	38.7145	0.5015	3.8842
	RF2	0.8992	50.7292	0.3942	3.5771
	RF3	0.8699	36.4603	0.3466	2.9411
	RF4	0.8746	41.5258		
	CR	0.9291			
	AVE	0.7661			

TABLE 9
CORRELATION COEFFICIENTS, T VALUES AND R2 OF THE FOUR DIMENSIONS AND OVERALL CONCEPT OF FACE

Path	Reflective model (RM)			Formative model (FM)		
	Correlation coefficient	T value	R^2	Correlation coefficient	T value	R^2
AMF0—>AMF1	0.2148	3.6167	0.0461	0.6067	13.8279	0.3680
AAF0—>AAF1	0.2950	4.8311	0.0870	0.5683	11.2012	0.3230
ASF0—>ASF1	0.3694	6.4111	0.1365	0.6035	14.1563	0.3642
ARF0—>ARF1	0.3244	4.6899	0.1052	0.5901	11.9363	0.3482
Path	Correlation Coefficient		T value		R^2	
AMF1—>ALLF	0.1409		2.0057		0.346	
AAF1—>ALLF	0.2310		2.4341			
ASF1—>ALLF	0.3033		3.3470			
ARF1—>ALLF	0.2831		3.3180			

TABLE 10
STUDY 3: SAMPLE DESCRIPTIVE STATISTICS

Gender	Amount	Percentage	Education	Amount	Percentage
Male	129	54.7%	Junior College	1	0.4%

Female	107	45.3%	Undergraduate	152	64.4%
Date of Birth	Amount	Percentage	Postgraduate and above	83	35.2%
1961–1973	17	7.2%	Profession	Amount	Percentage
1974–1984	113	47.9%	Full-time Students	52	22%
1985–1995	103	43.6%	Government and Institution Personnel	14	5.9%
After and within 1996	3	1.3%	State Enterprise Personnel	58	24.6%
Annual Salary	Amount	Percentage	Foreign Enterprise Personnel	45	19.1%
Below 50,000	53	22.5%	Private Enterprise Personnel	53	22.5%
50,001–100,000	25	10.6%	Self-employed Entrepreneurs and Freelance	8	3.4%
100,001– 300,000	118	50%			
300,001– 500,000	29	12.3%	Unemployed and others	6	2.5%
Over 500,001	11	4.7%			

TABLE 11
MEAN STATISTIC IN STUDY 3

	N	Means	Standard deviation	Standard error	95% Confidence interval	
					Lower limit	Upper limit
Group 1	108	2.74	1.816	.175	2.39	3.09
Group 2	128	5.52	1.655	.146	5.23	5.81
Total	236	4.25	2.214	.144	3.96	4.53

TABLE 12
ANOVA ANALYSIS IN STUDY 3

	Sum of squares	Degree of freedom	Mean square	F	Significance
Between groups	451.036	1	451.036	150.622	.000
Within groups	700.709	234	2.994		
Total	1151.746	235			

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TRANSLATED VERSION: SPANISH

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VERSION TRADUCIDA: ESPAÑOL

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INTRODUCCIÓN

Las personas a menudo se comportan de manera similar a las que les rodean, pero a veces también quieren ser diferentes de los demás debido al efecto de señalización de identidad (Berger y Heath 2007; 2012). Este es un fenómeno mundial que surge no sólo en el oeste, sino también en países orientales como China. Sin embargo, en comparación con la identidad social en el oeste, las personas en las culturas orientales son más propensas a preocuparse por la cara. Se preocupan más por las opiniones de los demás y los efectos sociales resultantes de su propio comportamiento. Este tipo de efecto social se manifiesta como cara (Li y Su 2007). No sólo es algo que se puede ganar a través de la interacción humana con características situacionales específicas (Ho 1976; Zhou et al. 1993; 2002), face también expresa algunas características individuales estables (Chen 1982). Hasta ahora, a pesar de que la investigación en la cara ha atraído a numerosos eruditos, el significado y las dimensiones de la cara siguen sin resolverse, y falta una definición universal con reconocimiento popular. Por lo tanto, los investigadores se inclinan a utilizar sus propios métodos de medición para explicar la cara. Por ejemplo, Zhang (2012) utiliza un modelo reflectante (RM), que consta de indicadores generalizados, mientras que Bao y Zhao (2009) y Shi et al. (2012) utilizan un modelo formativo (FM) construido a partir de indicadores situacionales en su lugar. De hecho, ambos modelos tienen ventajas y desventajas en la consistencia y la interpretación de variables latentes con sus diferencias mostradas a través de estudios empíricos (Diamantopoulos y Winklhofer 2001). Los académicos

en China y en el extranjero han mostrado más interés en RM y FM en los últimos años. (2007) estudiaron la relación entre proveedores y minoristas en el canal de marketing chino, lo que llevó a una discusión sobre la prueba de la validez interna y la validez discriminatoria de una escala formativa. Además, al explorar la dependencia y los conflictos en los canales de comercialización de China, Zhou et al. (2007) especificaron que la medición de la dependencia de los proveedores de los minoristas es formativa y viceversa. Sin embargo, pocos estudiosos han discutido la utilización de FM y RM con respecto a la investigación en la cara.

Además de la investigación sobre herramientas de medición, la investigación sobre el efecto de la cara en el consumo ecológico también es insuficiente. El rápido aumento de la mala calidad del aire en muchas zonas de China ha desencadenado una enorme conciencia social. Sin precedentes, la referencia a un tipo de contaminación atmosférica, PM2.5, fue incluida en el informe oficial de trabajo del gobierno de 2012. En consecuencia, el consumo ecológico generó un interés considerable por parte del gobierno y los estudiosos chinos como una forma de abordar los problemas actuales de contaminación. De hecho, el consumo de los consumidores chinos está profundamente influenciado por la cultura facial (Jap 2010). Sin embargo, la mayoría de las investigaciones existentes se centran en el consumo de artículos de lujo (por ejemplo, Bearden y Etzel 1982; Wong y Ahuvia 1998; Zhang 2012) en lugar del consumo ecológico. (2014) han demostrado preliminarmente que el concepto de cara tiene una fuerte previsibilidad para el consumo ecológico como moderador, mientras que cuatro dimensiones separadas de la cara no muestran el mismo efecto moderador. Los autores sugieren dos posibles explicaciones: la razón conceptual y la razón metodológica. La explicación conceptual está principalmente arraigada en la integridad, coordinación, simultaneidad y dinámica de la conciencia facial, lo que indica que el rostro es un concepto que no se puede dividir. Por otro lado, una explicación metodológica señala que en la actualidad no se aceptan generalmente básculas ni modelos para medir la cara. Por lo tanto, si se trata de entender el mecanismo subyacente entre el consumo facial y ecológico, un primer paso importante es localizar una escala más científica y precisa.

Este artículo tiene como objetivo resolver dos problemas con la investigación en la cara. En primer lugar examinamos las ventajas y desventajas de FM y RM. Examinamos el uso de un RM de cara en el estudio 1. Luego, en el estudio 2, realizamos una prueba empírica para comparar RM y FM particularmente con respecto a la estabilidad y validez. Al seleccionar una mejor escala de medición como resultado del estudio 2, esperamos que la connación entre la cara y el consumo ecológico sea más comprensible. Por lo tanto, investigaremos el efecto de la cara en la preferencia del producto ecológico en el estudio 3.

CONCLUSIÓN

Este artículo explora de forma innovadora tanto las ventajas como las desventajas incorporadas en el modelo reflectante (RM) y el modelo formativo (FM) en la construcción de la cara, y además, analiza el efecto en la preferencia del producto ecológico de varias dimensiones de la cara china. Inicialmente el estudio 1 encuentra a través del estudio empírico que el RM de la cara tiene una mejor fiabilidad. Luego, basado en un FM de cara existente (Shi et al. 2012), el estudio 2 contrasta estos dos modelos de medición con respecto a su estabilidad e interpretación de la cara. Por último, según los resultados del estudio 2, se analizaron cuatro indicadores generalizados de cuatro dimensiones de la cara como variables de agrupación para el estudio 3, con el fin de comprobar si las diferentes dimensiones tienen efectos diferenciados en la tendencia de los consumidores a comprar productos ecológicos.

Las conclusiones son las siguientes: 1) En el estudio 1, se verifica que el RM de la cara tiene una alta fiabilidad, y se compone de cuatro factores, a saber, la cara orientada a la moralidad, la cara orientada a la capacidad, la cara orientada al estado y la cara orientada a las relaciones sociales. 2) Concluimos del estudio 2, RM tiene mayor estabilidad; sin embargo, FM es mejor en la interpretación del concepto de cara. Además, los cuatro indicadores generalizados incrementales de las cuatro dimensiones muestran una importancia positiva con el concepto general de cara, junto con la varianza explicada R^2 en 34,6%. 3) El estudio 3 profundiza el estudio 2 y muestra que las dimensiones separadas de la cara ejercen diversos impactos en la preferencia del producto ecológico del consumidor. Los consumidores que tienen una cara

más fuerte orientada a la moralidad (LIAN) en lugar de la cara orientada socialmente (MIAN) son más propensos a comprar productos ecológicos.

TRANSLATED VERSION: FRENCH

Below is a rough translation of the insights presented above. This was done to give a general understanding of the ideas presented in the paper. Please excuse any grammatical mistakes and do not hold the original authors responsible for these mistakes.

VERSION TRADUITE: FRANÇAIS

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INTRODUCTION

Les gens se comportent souvent de la même façon que ceux qui les en sont, mais veulent parfois aussi être différents des autres en raison de l'effet de signalisation identitaire (Berger et Heath, 2007; Chan et coll. 2012). Il s'agit d'un phénomène mondial qui émerge non seulement à l'ouest, mais aussi dans les pays de l'Est comme la Chine. Cependant, par rapport à l'identité sociale en Occident, les gens dans les cultures orientales sont plus susceptibles d'être préoccupés par le visage. Ils se soucient davantage des opinions des autres et des effets sociaux résultant de leur propre comportement. Ce genre d'effet social se manifeste comme visage (Li et Su, 2007). Non seulement il y a quelque chose à gagner par l'interaction humaine avec des caractéristiques situationnelles spécifiques (Ho, 1976; Zhou et coll. 1993; Hwang, et coll. 2002), le visage exprime également quelques caractéristiques individuelles stables (Chen, 1982). Jusqu'à présent, même si la recherche sur le visage a attiré de nombreux chercheurs, le sens et les dimensions du visage restent instables, et une définition universelle avec reconnaissance populaire fait défaut. Par conséquent, les chercheurs inclinent à utiliser leurs propres méthodes de mesure pour expliquer le visage. Par exemple, Zhang (2012) utilise un modèle réfléchissant (RM), qui se compose d'indicateurs généralisées, tandis que Bao et Zhao (2009) et Shi et coll. (2012) utilisent plutôt un modèle formatif (FM) construit à partir d'indicateurs situationnels. En fait, les deux modèles ont des avantages et des inconvénients dans la cohérence et l'interprétation des variables latentes avec leurs différences montrées par des études empiriques (Diamantopoulos et Winklhofer 2001). Les chercheurs en Chine et à l'étranger ont montré plus d'intérêt pour RM et FM ces dernières années. Zhou et coll. (2007) ont étudié la relation entre les fournisseurs et les détaillants dans le canal de commercialisation chinois, ce qui a mené à une discussion sur la vérification de la validité interne et la validité discriminante d'une échelle formatrice. En outre, lorsqu'on explore la dépendance et les conflits dans les canaux de commercialisation de la Chine, Zhou et coll. (2007) ont précisé que la mesure de la dépendance des fournisseurs à l'égard des détaillants est formatrice et vice versa. Cependant, peu de chercheurs ont discuté de l'utilisation de fm et rm en ce qui concerne la recherche sur le visage.

Outre la recherche sur les outils de mesure, la recherche sur l'effet du visage sur la consommation écologique est également insuffisante. L'augmentation rapide de la mauvaise qualité de l'air dans de nombreuses régions de Chine a déclenché une énorme conscience sociale. Sans précédent, la référence à un type de pollution atmosphérique, les PM2,5, a été incluse dans le rapport officiel de travail du gouvernement de 2012. La consommation écologique a donc suscité un intérêt considérable de la part du gouvernement chinois et des chercheurs pour résoudre les problèmes actuels de pollution. En fait, la consommation des consommateurs chinois est profondément influencée par la culture du visage (Jap 2010). Néanmoins, la plupart des recherches existantes se concentrent sur la consommation de produits de luxe (par exemple Bearden et Etzel, 1982; Wong et Ahuvia, 1998; Zhang 2012) au lieu de la consommation écologique. Fait important, Shi et coll. (2014) ont démontré de façon préliminaire que le concept de visage a une forte prévisibilité pour la consommation écologique en tant que modérateur, tandis que quatre

dimensions distinctes du visage ne montrent pas le même effet modérateur. Les auteurs suggèrent deux explications possibles : la raison conceptuelle et la raison méthodologique. L'explication conceptuelle est principalement enracinée dans l'intégrité, la coordination, la simultanéité et la dynamique de la conscience du visage, ce qui indique que le visage est un concept qui ne peut pas être divisé. D'autre part, une explication méthodologique note qu'à l'heure actuelle, aucune échelle et modèle de mesure du visage n'est généralement accepté. Ainsi, si l'on cherche à comprendre le mécanisme sous-jacent entre le visage et la consommation écologique, une première étape importante consiste à localiser une échelle plus scientifique et précise.

Cet article vise à résoudre deux problèmes avec la recherche sur le visage. Tout d'abord, nous examinons les avantages et les inconvénients de FM et RM. Nous examinons l'utilisation d'une RM du visage dans l'étude 1. Ensuite, dans l'étude 2, nous faisons un test empirique pour comparer rm et FM en particulier en ce qui concerne la stabilité et la validité. En choisissant une meilleure échelle de mesure à la suite de l'étude 2, nous nous attendons à ce que la connation entre le visage et la consommation écologique soit plus compréhensible. Par conséquent, nous étudierons l'effet du visage sur la préférence écologique des produits dans l'étude 3.

CONCLUSION

Cet article explore de façon novatrice à la fois les avantages et les inconvénients intégrés dans le modèle réfléchissant (RM) et le modèle de formation (FM) dans la construction du visage, et en outre, analyse l'effet sur la préférence écologique des produits de diverses dimensions du visage chinois. Initialement, l'étude 1 révèle à travers une étude empirique que la RM du visage a une meilleure fiabilité. Puis, sur la base d'un FM existant de visage (Shi et coll. 2012), l'étude 2 oppose ces deux modèles de mesure en ce qui concerne leur stabilité et l'interprétation du visage. Enfin, selon les résultats de l'étude 2, quatre indicateurs généralisés de quatre dimensions du visage ont été analysés comme des variables de regroupement pour l'étude 3, afin de vérifier si différentes dimensions ont des effets différenciés sur la tendance des consommateurs à acheter des produits écologiques.

Les conclusions sont les suivantes: 1) Dans l'étude 1, la RM du visage est vérifiée comme ayant une grande fiabilité, et est composée de quatre facteurs, à savoir, le visage axé sur la moralité, le visage axé sur les capacités, le visage orienté vers le statut et le visage axé sur la relation sociale. 2) Nous concluons de l'étude 2, RM a une plus grande stabilité ; cependant, FM est mieux à interpréter le concept de visage. De plus, les quatre indicateurs généraux différentiels des quatre dimensions montrent une importance positive avec le concept global du visage, ainsi que la variance expliquée R2 à 34,6 %. 3) l'étude 3 approfondit l'étude 2 et montre que les dimensions séparées du visage exercent divers impacts sur la préférence des consommateurs en matière de produits écologiques. Les consommateurs qui ont un visage plus fort axé sur la moralité (LIAN) plutôt que le visage social (MIAN) sont plus susceptibles d'acheter des produits écologiques.

TRANSLATED VERSION: GERMAN

Below is a rough translation of the insights presented above. This was done to give a general understanding of the ideas presented in the paper. Please excuse any grammatical mistakes and do not hold the original authors responsible for these mistakes.

ÜBERSETZTE VERSION: DEUTSCH

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EINLEITUNG

Die Menschen verhalten sich oft ähnlich wie ihre Mitmenschen, wollen sich aber manchmal auch aufgrund der Identitätssignalwirkung von anderen unterscheiden (Berger und Heath 2007; Chan et al. 2012). Dies ist ein weltweites Phänomen, das sich nicht nur im Westen, sondern auch in östlichen Ländern wie China abzeichnet. Im Vergleich zur sozialen Identität im Westen sind die Menschen in den östlichen Kulturen jedoch eher besorgt über das Gesicht. Sie interessieren sich mehr für die Meinungen anderer und die sozialen Auswirkungen, die sich aus ihrem eigenen Verhalten ergeben. Diese Art von sozialem Effekt manifestiert sich als Gesicht (Li und Su 2007). Es ist nicht nur etwas, das durch menschliche Interaktion mit spezifischen situalen Merkmalen gewonnen werden kann (Ho 1976; Zhou et al. 1993; Hwang, et al. 2002), Face drückt auch einige stabile individuelle Eigenschaften aus (Chen 1982). Obwohl die Forschung über das Gesicht zahlreiche Gelehrte angezogen hat, bleiben Bedeutung und Dimensionen des Gesichts ungeklärt, und es fehlt an einer universellen Definition mit populärer Anerkennung. Daher neigen die Forscher dazu, ihre eigenen Messmethoden zu verwenden, um gesichtzuhaben. Zhang (2012) verwendet beispielsweise ein reflektierendes Modell (RM), das aus verallgemeinerten Indikatoren besteht, während Bao und Zhao (2009) und Shi et al. (2012) stattdessen ein prägendes Modell (FM) verwenden, das aus Situationsindikatoren konstruiert wurde. Tatsächlich haben beide Modelle Vor- und Nachteile in der Konsistenz und der Interpretation latenter Variablen mit ihren Unterschieden, die durch empirische Studien aufgezeigt werden (Diamantopoulos und Winklhofer 2001). Wissenschaftler in China und im Ausland haben in den letzten Jahren mehr Interesse an RM und FM gezeigt. Zhou et al. (2007) untersuchten die Beziehung zwischen Lieferanten und Einzelhändlern im chinesischen Marketingkanal, was zu einer Diskussion über das Testen der internen Gültigkeit und der diskriminierenden Gültigkeit eines prägenden Maßstabs führte. Auch bei der Erforschung der Abhängigkeit und Konflikte in Chinas Marketingkanälen präzisierte Zhou et al. (2007), dass die Messung der Abhängigkeit von Lieferanten von Einzelhändlern prägend ist und umgekehrt. Jedoch, nur wenige Wissenschaftler haben die Verwendung von FM und RM in Bezug auf die Forschung auf Gesicht diskutiert.

Neben der Forschung an Messinstrumenten reicht auch die Forschung über die Wirkung von Gesicht auf den ökologischen Konsum nicht aus. Der rapide Anstieg der schlechten Luftqualität in vielen Gebieten Chinas hat ein enormes soziales Bewusstsein ausgelöst. Unerhörtes Wurde der Hinweis auf eine Art von Luftverschmutzung, PM2.5, in den offiziellen Arbeitsbericht der Regierung 2012 aufgenommen. Der ökologische Konsum weckte daher großes Interesse der chinesischen Regierung und der Gelehrten, um die aktuellen Verschmutzungsprobleme anzugehen. Tatsächlich ist der Konsum der chinesischen Verbraucher stark von der Gesichtskultur beeinflusst (Jap 2010). Dennoch konzentriert sich die forschung in den meisten Forschungsarbeiten auf den Konsum von Luxusgütern (z. B. Bearden und Etzel 1982; Wong und Ahuvia 1998; Zhang 2012) statt ökologischem Konsum. Wichtig ist, dass Shi et al. (2014) vorläufig gezeigt haben, dass das Konzept des Gesichts eine starke Vorhersehbarkeit für den ökologischen Konsum als Moderator hat, während vier separate Dimensionen des Gesichts nicht den gleichen mäßigenden Effekt zeigen. Die Autoren schlagen zwei mögliche Erklärungen vor: konzeptionelle Vernunft und methodische Vernunft. Die konzeptionelle Erklärung wurzelt hauptsächlich in der Integrität, Koordination, Gleichzeitigkeit und Dynamik des Gesichtsbewusstseins, was darauf hindeutet, dass Gesicht ein Konzept ist, das nicht geteilt werden kann. Andererseits wird in einer methodischen Erklärung festgestellt, dass derzeit keine Skalen und Modelle zur Flächenmessung allgemein akzeptiert sind. Wenn man also versucht, den zugrunde liegenden Mechanismus zwischen Gesichts- und ökologischem Konsum zu verstehen, besteht ein wichtiger erster Schritt darin, einen wissenschaftlicheren und präziseren Maßstab zu finden.

Dieses Papier zielt darauf ab, zwei Probleme mit der Forschung auf dem Gesicht zu lösen. Zunächst untersuchen wir die Vor- und Nachteile von FM und RM. Wir untersuchen die Verwendung eines RM von Gesicht in Studie 1. In Studie 2 führen wir dann einen empirischen Test durch, um RM und FM insbesondere in Bezug auf Stabilität und Gültigkeit zu vergleichen. Durch die Auswahl einer besseren Messskala als Ergebnis von Studie 2 erwarten wir, dass die Konnation zwischen Gesicht und ökologischem Verbrauch verständlicher sein wird. Daher werden wir in Studie 3 die Auswirkungen von Gesicht auf ökologische Produktpräferenzen untersuchen.

SCHLUSSFOLGERUNG

In diesem Beitrag werden sowohl die Vor- und Nachteile des Reflektierenden Modells (RM) als auch des Gestaltungsmodells (FM) bei der Konstruktion von Flächen innovativ untersucht und darüber hinaus die Auswirkungen auf die ökologische Produktpräferenz verschiedener Dimensionen chinesischer Gesichtsflächen analysiert. Zunächst stellt Die Studie 1 durch empirische Studien fest, dass das RM des Gesichts eine bessere Zuverlässigkeit hat. Dann, basierend auf einem bestehenden FM von Gesicht (Shi et al. 2012), Studie 2 kontrastiert diese beiden Messmodelle in Bezug auf ihre Stabilität und Interpretation der Fläche. Schließlich wurden nach den Ergebnissen der Studie 2 vier verallgemeinerte Indikatoren von vier Gesichtsdimensionen als Gruppierungsvariablen für Studie 3 analysiert, um zu testen, ob unterschiedliche Dimensionen differenzierte Auswirkungen auf die Neigung der Verbraucher zum Kauf ökologischer Produkte haben.

Schlussfolgerungen sind folgende: 1) In Studie 1 wird der RM des Gesichts als hoch zuverlässig bestätigt und besteht aus vier Faktoren, nämlich moralorientiertes Gesicht, fähigkeitsorientiertes Gesicht, statusorientiertes Gesicht und beziehungsorientiertes Gesicht. 2) Wir schließen aus Studie 2, RM hat eine größere Stabilität; FM ist jedoch besser darin, das Konzept des Gesichts zu interpretieren. Auch die inkrementellen vier verallgemeinerten Indikatoren der vier Dimensionen zeigen eine positive Bedeutung mit dem Gesamtkonzept der Fläche, zusammen mit der erklärten Varianz R^2 bei 34,6%. 3) Studie 3 vertieft Studie 2 und zeigt, dass die getrennten Dimensionen der Fläche verschiedene Auswirkungen auf die ökologische Produktpräferenz der Verbraucher haben. Verbraucher, die ein stärker moralorientiertes Gesicht (LIAN) als ein sozialorientiertes Gesicht (MIAN) haben, kaufen eher ökologische Produkte.

TRANSLATED VERSION: PORTUGUESE

Below is a rough translation of the insights presented above. This was done to give a general understanding of the ideas presented in the paper. Please excuse any grammatical mistakes and do not hold the original authors responsible for these mistakes.

VERSÃO TRADUZIDA: PORTUGUÊS

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INTRODUÇÃO

Muitas vezes, as pessoas comportam-se da mesma forma que as que as rodeiam, mas por vezes também querem ser diferentes das outras devido ao efeito de sinalização de identidade (Berger e Heath 2007; Chan et al. 2012). Trata-se de um fenómeno mundial que surge não só no Ocidente, mas também em países de Leste, como a China. No entanto, em comparação com a identidade social no Ocidente, as pessoas nas culturas orientais são mais propensas a preocuparem-se com o rosto. Preocupam-se mais com as opiniões dos outros e com os efeitos sociais resultantes do seu próprio comportamento. Este tipo de efeito social manifesta-se como rosto (Li e Su 2007). Não só é algo a ganhar através da interação humana com características situacionais específicas (Ho 1976; Zhou et al. 1993; Hwang, et al. 2002), face também expressa algumas características individuais estáveis (Chen 1982). Até agora, embora a investigação sobre o rosto tenha atraído numerosos estudiosos, o significado e as dimensões do rosto permanecem incertos, e falta uma definição universal com reconhecimento popular. Por isso, os investigadores inclinam-se a usar os seus próprios métodos de medição para explicar o rosto. Por exemplo, Zhang (2012) usa um modelo refletor (RM), que consiste em indicadores generalizados, enquanto Bao e Zhao (2009) e Shi et al. (2012) usam um modelo formativo (FM) construído a partir de indicadores situacionais. De facto, ambos os

modelos têm vantagens e desvantagens na consistência e na interpretação das variáveis latentes com as suas diferenças demonstradas através de estudos empíricos (Diamantopoulos e Winklhofer 2001). Os académicos na China e no estrangeiro mostraram mais interesse tanto na RM como na FM nos últimos anos. Zhou et al. (2007) estudou a relação entre fornecedores e retalhistas no canal de marketing chinês, o que levou a uma discussão sobre o teste da validade interna e da validade discriminatória de uma escala formativa. Além disso, ao explorar a dependência e os conflitos nos canais de marketing da China, Zhou et al. (2007) especificou que a medição da dependência dos fornecedores nos retalhistas é formativa e vice-versa. No entanto, poucos estudiosos têm discutido a utilização de FM e RM no que diz respeito à investigação no rosto.

Para além da investigação sobre ferramentas de medição, a investigação sobre o efeito do rosto no consumo ecológico também é insuficiente. O rápido aumento da má qualidade do ar em muitas regiões da China desencadeou uma enorme consciência social. Sem precedentes, a referência a um tipo de poluição atmosférica, PM2.5, foi incluída no relatório oficial de trabalho do governo de 2012. O consumo ecológico gerou, por conseguinte, um interesse considerável por parte do Governo chinês e dos académicos como forma de resolver os atuais problemas de poluição. Com efeito, o consumo dos consumidores chineses é profundamente influenciado pela cultura face (Jap 2010). No entanto, a maior parte das investigações existentes concentra-se no consumo de bens de luxo (por exemplo, Bearden e Etzel 1982; Wong e Ahuvia 1998; Zhang 2012) em vez de consumo ecológico. Importante, Shi et al. (2014) mostrou preliminarmente que o conceito de rosto tem uma forte previsibilidade para o consumo ecológico como moderador, enquanto quatro dimensões distintas do rosto não mostram o mesmo efeito moderador. Os autores sugerem duas explicações possíveis: razão conceptual e razão metodológica. A explicação conceptual está principalmente enraizada na integridade, coordenação, simultaneidade e dinâmica da consciência facial, indicando que o rosto é um conceito que não pode ser dividido. Por outro lado, uma explicação metodológica observa que, atualmente, não são aceites escamas e modelos para medir o rosto. Assim, se se procura compreender o mecanismo subjacente entre o consumo facial e o consumo ecológico, um primeiro passo importante é localizar uma escala mais científica e precisa.

Este trabalho visa resolver dois problemas com a investigação no rosto. Em primeiro lugar, examinamos as vantagens e desvantagens da FM e da RM. Examinamos o uso de um RM do rosto no estudo 1. Depois, no estudo 2, fazemos um teste empírico para comparar RM e FM particularmente no que diz respeito à estabilidade e validade. Ao selecionar uma melhor escala de medição como resultado do estudo 2, esperamos que a connação entre o consumo facial e o consumo ecológico seja mais compreensível. Por isso, vamos investigar o efeito do rosto na preferência ecológica do produto no estudo 3.

CONCLUSÃO

Este trabalho explora inovadoramente tanto as vantagens e desvantagens incorporadas no modelo refletor (RM) como no modelo formativo (FM) na construção do rosto, e além disso, analisa o efeito na preferência ecológica do produto de várias dimensões do rosto chinês. Inicialmente, o estudo 1 descobre através do estudo empírico que o RM do rosto tem uma maior fiabilidade. Em seguida, com base num FM existente (Shi et al. 2012), o estudo 2 contrasta estes dois modelos de medição no que diz respeito à sua estabilidade e interpretação do rosto. Finalmente, de acordo com os resultados do estudo 2, quatro indicadores generalizados de quatro dimensões do rosto foram analisados como variáveis de agrupamento para o estudo 3, de modo a testar se diferentes dimensões têm efeitos diferenciados na tendência dos consumidores para a compra de produtos ecológicos.

As conclusões são as seguintes: 1) No estudo 1, o RM do rosto é verificado como tendo alta fiabilidade, e é composto por quatro fatores, nomeadamente, rosto orientado para a moralidade, rosto orientado para a capacidade, rosto orientado para o estado e rosto orientado para a relação social. 2) Concluímos do estudo 2, o RM tem maior estabilidade; no entanto, FM é melhor na interpretação do conceito de rosto. Além disso, os quatro indicadores generalizados das quatro dimensões mostram um significado positivo com o conceito global de face, juntamente com a variação explicada R2 em 34,6%. 3) O estudo 3 aprofunda o estudo 2 e mostra que as dimensões separadas do rosto exercem vários impactos na preferência ecológica do

consumidor. Os consumidores que têm um rosto mais forte e orientado para a moralidade (LIAN) do que o rosto social (MIAN) são mais propensos a comprar produtos ecológicos.