Segmenting young-adult consumers in East Asia and Central and Eastern Europe – The role of consumer ethnocentrism and decision-making styles[☆]

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ABSTRACT

The article addresses consumer ethnocentrism (CET) and consumer decision-making styles (CDMS) of young-adult consumers. We explore the level of between- and within-regional differences in CDMS in East Asia and Central and Eastern Europe. Drawing on Social identity theory, we explore various "constellations" of young-adult consumers with regards to their CDMS and assess to what extent can we discriminate between various consumer segments based on CET. We test hypotheses on matched samples' survey data from China, Japan, Slovenia and Croatia. Our study confirms low ethnocentric tendencies of young-adult consumers at regional, country and segment levels. We identify diverse CDMS archetypes between and within the respective countries and regions. Inter-regional differences are not bigger than country-level differences. We find weak pair-wise correlations between CET and some CDMS only in the case of Central and Eastern Europe.

1. Introduction

Understanding consumers and their decision making is essential for designing effective foreign market strategies (Zou & Cavusgil, 2002). It starts with market segmentation (Steenkamp & Ter Hofstede, 2002) and an understanding of consumer decision-making styles (CDMS)[3] (Sinkovics, Leelapanyalert, & Yamin, 2010). From a consumer-centric perspective, foreign companies face various affective, cognitive and behavioral responses in overcoming the liability of foreignness of their products (Sharma, 2015). Research on consumer centrism has shown that various social identity bases shape consumer behaviour and feed into decision-making processes in foreign markets (Prince, Davies, Cleveland, & Palihawadana, 2016). Within these processes, individual-level consumer traits and dispositions influence purchasing decisions in an "inside-out" model of consumer behaviour (Diamantopoulos, Davydova, & Arslanagic-Kalajdzic, 2018). This is perhaps most

apparent among the young generation, where social identity and social learning manifest themselves through consumer behaviour in a coming-of-age process (Gentina, Butori, Rose, & Bakir, 2014). The young generation is also at the forefront of globalization and global acculturation (Kjeldgaard & Askegaard, 2006); with young-adult consumers often described as the "archetypal global segment" (Sobol, Cleveland, & Laroche, 2018, p. 342).

Consumer ethnocentrism (CET) is one social identity base, especially relevant in international markets (Prince et al., 2016). It is influenced by demographic (Feurer, Baumbach, & Woodside, 2016) and psychographic consumer characteristics (Sharma, Shimp, & Shin, 1995), yet contingent also on various contextual factors (Shankarmahesh, 2006). Originating from studies of in-group favour-itism, with origins in Social identity theory (Diamantopoulos et al., 2018) and with clear implications for consumer segmentation (Zeugner-Roth, Žabkar, & Diamantopoulos, 2015), CET has been defined by

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Shimp and Sharma as "the beliefs held by consumers about the appropriateness, indeed morality, of purchasing foreign-made products" (1987, p. 280).

CET "suggests that individuals become affectively involved with products" (Prince et al., 2016, p. 718); pointing to the mediating mechanisms of product evaluations (Yen, 2018). Because of its role in product evaluations and impact on willingness to buy foreign and domestic products (Yen, 2018), CET has become a cornerstone international marketing concept. It has implications for marketers (Gineikiene, Schlegelmilch, & Aruskeviciene, 2017) and policy makers in its role as a non-tariff trade barrier (Balabanis & Siamagka, 2017).

Yet, CET does not simply act as a normative social identity base for consumer behaviour. It can also be employed by marketers as "an individual difference variable that helps discriminate [among] the consumer segments" (Wang, Siu, & Hui, 2004, p. 249). As studies on related consumer cosmopolitanism have shown, there are clear consumer sub-segments with distinct types of cosmopolitanism. Regionalism plays a particularly important role, with clear distinctions between global and local cosmopolitan consumers (Riefler, Diamantopoulos, & Siguaw, 2012). However, less is known about such sub-segments when it comes to CDMS and their potential link to CET (Wang et al., 2004).

Segmenting consumers according to such dispositions is particularly relevant in emerging markets; with varying levels of CET influenced by economic development, integration with the global economy and other international influences (Jin et al., 2015). Myriad studies have also shown the link between CET and consumer decision-making differs across developed and developing markets (Diamantopoulos et al., 2018; Yen, 2018). In cross-country settings, the "magnitude, causes and effects of CET have been found to be inconsistent across various countries and cultures" (Prince et al., 2016, p. 718), which calls for multi-country comparisons. However, cross-regional comparisons have been less often the focus of such research (Ding, Vuchkovski, Žabkar, Hirose, & Rašković, 2018).

Growing research has been carried out on different social and psychographic antecedents of CET (e.g. patriotism, animosity, internationalism) and correlates (e.g. cosmopolitanism, xenocentrism). However, researchers have only recently started to explore the specific consumer decision-making mechanisms through which CET influences product evaluations, willingness to buy and actual purchases. Yen (2018) established quality, price and branding to be at the core of such processes.

Employing a micro-comparative marketing approach (Sinkovics et al., 2010), our study explores CDMS of young-adult consumers (in their 20s)[4] in East Asia (China, Japan) and Central and Eastern Europe (Slovenia, Croatia); further linking them to CET. Our study has two goals. First, we explore the level of differences in CDMS of a specific consumer demographic cohort believed to be particularly homogenous in terms of their consumer behaviour and generally displaying low levels of CET (Rašković et al., 2016). Here, we have asked ourselves two questions. Can young-adult consumers really be considered as *a* global consumer segment? What kind of between- and within-regional differences can we observe in East Asia and Central and Eastern Europe?

Our second goal is to establish to what extent can CET be employed as an individual consumer variable able to discriminate between various consumer segments. We have followed the research call by Wang et al. (2004) on using CET as such a variable, given its social identity theoretical base and socio-psychographic nature.

Our study makes three contributions to the literature. First, we examine CET as a possible socio-psychographic correlate of CDMS. We add to our understanding of "a complex view of the antecedents and consequences of consumer decision-making styles" (Welsley, LeHew, & Woodside, 2006, p. 535). We draw on Social identity theory

underpinning CET and its potential normative impact on consumer decision-making (Sharma, 2015; Wang et al., 2004). This has implications for marketing and retailing. Second, we test if young-adult consumers can indeed be seen as an "archetypal global consumer segment" (Sobol et al., 2018, p. 342). Looking at CET and CDMS, we test our hypotheses within a specific inter- and intra-regional regional context. Our research confirms the existence of different consumer archetypes within and between individual countries and regions. This is consistent with a more sociological understanding of consumer "constellations" (Beck & Beck-Gernsheim, 2009), than a converging influence of age structuring (Settersten Jr. & Meyer, 1997) and globalization-led convergence (Sobol et al., 2018). Third, our results contribute to the understanding of regional and country differences in international markets (Cleveland, Erdoğan, Arıkan, & Poyraz, 2011; Ding et al., 2018; Merz, He, & Alden, 2008). This is becoming relevant for practitioners and policy makers in the current global climate characterized by retrenching globalization, rising nationalism and increasing inter-regional rivalry.

Lastly, given the "seismographic" nature of this consumer cohort (Kjeldgaard & Askegaard, 2006, p. 233), understanding the young generation is also important when looking forward and making sense of an increasingly uncertain future for international business.

2. Theoretical framework

In this section, we overview the literature on CDMS and link it with CET. We then discuss young-adult consumers and their consumer behaviour characteristics. Given the causal limitations of cross-sectional studies (Rindfleisch, Malter, Ganesan, & Moorman, 2011), we adopt a descriptive research approach which lends itself well to analysis of CDMS (Welsley et al., 2006). We formulate a series of general research hypotheses, reflecting the micro-comparative nature of our study (Sinkovics et al., 2010).

2.1. Consumer decision-making styles (CDMS)

CDMS are analogous to a kind of "consumer personality" which includes "cognitive and affective characteristics" (Sproles & Kendall, 1986, p. 268). The conceptual origins of CDMS research go back to a fundamental shift in economics from production to individual choice-based consumption in the 1930s (Zelizer, 2010).

The literature on CDMS has been influenced by research on profiling consumers and examining "the relationship between cognitive styles and consumer behavior" (Wang et al., 2004, p. 240). It follows the so-called consumer characteristics approach, which took off in the 1970s together with the consumer typology and the psychographic lifestyle approaches. Sproles and Kendall's (1986) seminal work related to CDMS paved the way for research which has provided a needs-based toolkit for marketing. Developing a specific consumer styles inventory (CSI), Sproles and Kendall's (1986) framework identified eight distinct decision-making styles. These styles include perfectionist/quality consciousness, brand consciousness, recreational/hedonic shoppers, price consciousness impulsive/careless consumers, consumers confused by over-choice (processing of information), and brand loyal/habitual consumers. It is worth mentioning that the framework was initially developed on date from high-school students in the U.S.

In terms of international cross-validation, the CDMS framework has been reproduced to varying degrees (Mishra, 2015). Following Sproles and Kendall's development of CSI in the mid-1980s, the earliest cross-validations were by Hafstrom, Chae, and Chung (1992) (South Korea) and Durvasula, Lysonski, and Andrews (1993) (New Zealand). They provided an indication of optimism for "potential use across international populations" (Hafstrom et al., 1992, p. 157), where "similarities outweigh the differences" (Durvasula et al., 1993, p. 60). However, as our analysis in Table 1 shows, both studies only benchmarked their data with Sproles and Kendall (1986).

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[4] Popularly referred to also as Millennials or Generation Y (Rašković, Ding, Škare, Ozretić Došen, & Žabkar, 2016).

Table 1
Overview of cross-validation of the CSI instrument and key empirical results for multi-country studies relevant to our research[a].

Study & year	Journal	Data	# of factors	Comparability	Invariance
Hafstrom et al. (1992)	Journal of Consumer Affairs	Korean students (n = 310) compared to U.S. data by Sproles and Kendall (1986)	8 factors	More similarities than differences. However, 3 factors had reliability issues.	No
Durvasula et al. (1993)	Journal of Consumer Affairs	New Zealand students (210) compared to data by Sproles and Kendall (1986)	8 factors	Significant differences. Appropriate invariance discussed only for 3 CDMS.	No
Lysonski, Durvasula, and Zotos (1996)	European Journal of Marketing	Students in Greece (95), India (Zeugner-Roth et al., 2015), New Zealand (210), USA (108)	7 factors in 3 countries, 8 factors in USA	Significant differences. 6 items loaded on different factors in India and Greece + reliability issues.	No
Fan and Xiao (1998)	Journal of Consumer Affairs	Students in China (Guangzhou) (271) compared to U.S. data by Sproles and Kendall (1986) and Korean data by Hafstrom et al. (1992)	7 factors identified, 5-factor solution chosen	Significant differences observed, especially for brand consciousness and information utilization. Authors observed similar item loadings for 5 core CDMS; we see more notable differences.	No
Hui, Sui, Wang, and Chang (2001)	Journal of Consumer Affairs	387 adult shoppers in China (Guangzhou),	7 factors (22 items removed due to loading issues)	Comparable CDMS with previous studies; only 5 CDMS had acceptable reliability.	No
Leo, Bennet, and Hartel (2005)	Cross Cultural Management	Residents of Singapore (352) and Australia (182)	6 factors	Significant differences for 3 CDMS.	No
Anić, Ciunova-Shuleska, Piri Rajh, Rajh, and Bevanda (2016)	Economic Research	Students in Croatia (404), Bosnia & Herzegovina (601) and Macedonia (201)	6 factors (21 items dropped due to factor loading issues)	Significant differences (ANOVA) for all 6 CDMS.	No
Lamour and De La Robertie (2016)	Int. Journal of Retail & Distribution Management	French (308) and Chinese (2210) pet food buyers	8 factors for France, 7 factors for China	Significant differences for more than half of the comparable CDMS.	No (only country measurement models tested)
Ding et al. (2018)	Journal of East European Management Studies	Students in Slovenia (246), Croatia (243), China (208), Japan (233)	4 factors (1 factor excluded due to measurement invariance issues)	Significant differences (ANOVA) between 4 countries for all 4 CDMS, regional differences for 2 CDMS.	Yes

[a] We acknowledge several other single-country studies of CDMS have been conducted to date (e.g. Germany, India etc.). These have been excluded from our analysis, as they are neither directly relevant to the geographic scope of our research, nor have they been published in mainstream academic journals.

The assumption of applicability was quickly questionned by a four-country comparison of Greece, India, New Zealand and USA by Lysonski et al. (1996). They suggested greater applicability of the instrument in developed and more westernized markets (Mishra, 2015). This view was reinforced by Fan and Xiao's (1998) adaptation of the original Sproles and Kendall (1986) instrument for the Chinese market, producing a five-factor CDMS solution.

Subsequent research has provided conflicting evidence regarding the applicability of the CSI instrument across West-East and developed-developing market settings. For example, Lamour and De La Robertie (2016) found support for such applicability, while the observations by Ding et al. (2018) were closer to Lysonski et al. (1996). Table 1 provides an overview related to the application of the CSI instrument and the corresponding results across the various research contexts relevant to the scope of our study.

Four things are worth pointing out. First, six out of the nine presented studies used student samples. Second, only five out of the nine studies are actual multi-country comparisons based on primary data collection; the rest merely benchmark their country data with Sproles and Kendall (1986). Third, only one of the five multi-country studies addressed measurement invariance and provided sufficient information to determine the level of invariance achieved (metric vs configural). Fourth, a large number of items from the original 40-item CSI instrument had to be omitted in almost all studies, due to factor loading and/or reliability issues.

Complementary research on acculturation to global consumer culture (AGCC) among the young (Fan & Xiao, 1998; Feurer et al., 2016; Firat & Schultz, 1997; Gentina et al., 2014; Gineikiene et al., 2017; Grant & Waite, 2003) by Durvasula and Lysonski (2016) has further established cross-national validity of the AGCC scale in the USA, China, New Zealand and Nigeria. It has, however, pointed to some notable variability in results. Based on our review of the evidence, we have formulated the following research hypothesis:

Research hypothesis 1. The CDMS framework is applicable across all four studied countries (producing comparable results).

2.2. Consumer ethnocentrism (CET)

The concept of ethnocentrism emerged within sociology over a century ago (Prince et al., 2016). Connected to the nature of intergroup relations and identity (Lewis, 1976), viewing one's own group as "central" and favouring it over the "others" is part of "human nature" (Sharma et al., 1995, p. 27). The role of ethnocentrism is "to secure the survival of groups and their cultures and by increasing a group's solidarity, conformity, cooperation, loyalty, and effectiveness" (ibid., p. 27). Ethnocentrism manifests itself in all types of social groups, not just nations, including generational cohorts sharing common social experiences (Hung, Gu, & Yim, 2007).

Despite its popularity and wide application within the international marketing literature, Sharma (2015) has pointed to an overreliance on the "socio-normative and economic aspects" subject to critical events and changes over time, as well as "limited evidence about its validity, dimensionality and cross-cultural measurement invariance" (p. 382).

Being mindful of some mixed evidence (Shankarmahesh, 2006), Sharma et al. (1995) generally point to a positive relationship between age and CET. They attribute this to higher levels of conservatism and tradition, patriotism and greater incidence of critical events and conflict as one ages. This supports the so-called age structuring view[5] (Settersten Jr. & Meyer, 1997). When it comes to social and psychographic antecedents of CET, Sharma et al. (1995) point to cultural

openness and higher levels of individualism to be consistent with lower CET, as well as higher levels of consumer innovativeness (Tellis, Yin, & Bell, 2009). This view has been reinforced by Jossiasen, Assaf, and Karpen (2011) in their examination of demographic consumer characteristics associated with CET. In discussing the link between CET and product evaluations, the relationship between age and CET was also highlighted by Yen (2018); who found CET to be a less strong driver for purchase of domestic products among young people.

We have formulated the following general research hypothesis, which is also grounded in the literature on global citizenship and acculturation of the youth (Bartsch, Riefler, & Diamantopoulos, 2016; Durvasula & Lysonski, 2016):

Research hypothesis 2. Young-adult consumers will display relatively low levels of CET.

Our third research hypothesis addresses the relationship between CET and CDMS. This hypothesis is grounded in the very origins of the CET concept by Shimp and Sharma (1987) and the nomological validation of their CETSCALE. Contrasting their findings with results from the *National Consumer Good Study* of 1986 (which surveyed over 2000 consumers and their opinions related to consumer goods increasingly vulnerable to foreign competition), Shimp and Sharma (1987) linked CET to product judgements regarding price, quality and branding of foreign consumer products. A similar set of product judgement mechanisms has also been observed by Yen (2018) studying purchase decisions behind domestic products in Taiwan.

Research hypothesis 3. There is a link between CDMS and CET (across all four countries).

2.3. Young-adult consumers and their consumer behaviour

Due to the process of age structuring and its impact on social experiences and identity (Settersten Jr. & Meyer, 1997), age should not be viewed as a demographic characteristics included in consumer behaviour research as a simple control variable. It should be explored as a socio-psychographic force behind consumer behaviour and related to the concept of (social) identity.

Young-adult consumers are an interesting consumer demographic cohort for international marketers (Carpenter, Moore, Doherty, & Alexander, 2012; Rašković et al., 2016). As an "archetypal global segment" (Sobol et al., 2018, p. 342), they are believed to be "seismographic" for marketers (Kjeldgaard & Askegaard, 2006, p. 233). This is because they are at the forefront of globalization (Rašković et al., 2016) and are highly consumer innovative (Tellis et al., 2009). They are also a particularly interesting segment for research on globalization and cosmopolitanism (Bartsch et al., 2016; Durvasula & Lysonski, 2016). As consumers, they have a key influence on household spending (Grant & Waite, 2003) and are the main driver of consumer spending in emerging markets (Cavusgil, Deligonul, Kardes, & Cavusgil, 2018; Luo et al., 2018).

In existing international marketing research, young-adult consumers have been generally compared to other age groups and treated as a homogenous demographic cohort (Cleveland, Papadopoulos, & Laroche, 2011; Cleveland, Rojas-Mendez, Laroche, & Papadopoulos, 2016).

However, a generational segmentation approach can also involve a hybrid approach (Hung et al., 2007); combining the relevance of socio-psychographic segmentation with traditional demographic and behavioral criteria (Zeugner-Roth et al., 2015). Such segmentation assumes the influence of important socio-institutional changes (e.g. the Cultural Revolution, or the fall of the Iron curtain) on individual consumer demographic cohorts (Hung et al., 2007). Another example is research on middle-class consumers, which are in emerging markets often young, well-educated urbanites (Cavusgil et al., 2018). The literature on so-called global generations within sociology (Beck & Beck-Gernsheim,

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[5] Age structuring refers to the process of social structuration of life based on age and one's life cycle, impacting shared social experiences (Settersten & Meyer, 1997)

2009) has also influenced our research approach, as has evidence of different sub-segments of cosmopolitan consumers (Riefler et al., 2012).

With regards to CET, young-adult consumers are more culturally open and cosmopolitan (Riefler & Diamantopoulos, 2009). They are believed to share a common global identity (Bartsch et al., 2016; Kjeldgaard & Askegaard, 2006), underpinned by an acculturation tendency towards a common global consumer culture (Bartsch et al., 2016; Durvasula & Lysonski, 2016). They follow global mass media and popular culture, increasingly use English and are more exposed to marketing activities of multinational companies (Rašković et al., 2016). They share similar patterns of social interaction (personal, via technology, travel, study) and similar work-life values (Twenge, Campbell, Hoffman, & Lance, 2010).

In the process of manifesting their social identities through consumption (Gentina et al., 2014), they are inclined towards experimentation, novelty seeking and hedonism; part of their social learning (Rašković et al., 2016). This seems to be more sensory than cognitive, particularly when it comes to shopping behaviour (Mishra, 2015). This carries important implications for managing customer experience in physical retail and e-commerce.

In emerging markets, young-adult consumers are believed to have even stronger tendencies towards global-citizen-type identification than in developed markets (Strizhakova, Coulter, & Price, 2012). Recent research has also shown young-adult consumers tend to be more future oriented, optimistic and more materialistic; which in turn corresponds to lower levels of CET (Sobol et al., 2018).

In terms of CDMS, price and quality seem to be important decision-making factors. However, brands also play a particularly important role, both in terms of self-expression (Ahuvia, 2005) and aspirational consumption (Lu & Xu, 2015). For example, a comparison of Canadian and Chinese young-adult consumers has shown branding to act as an important mechanism of young-adult consumers' susceptibility to global consumer culture through socio-cultural conformity, prestige and quality associations (Zhou, Teng, & Poon, 2008). Young-adult consumers seem to be better equipped to draw on multiple information sources and a large number of attributes to evaluate products (Moschis & Moore, 1979). They seem to be less confused by overchoice than other age groups (Wang et al., 2004). Based on this, we have formulated the following research hypotheses regarding young-adult consumers:

Research hypothesis 4a. Similar CDMS patterns can be observed among young-adult consumers regardless of country or region.

Research hypothesis 4b. Such patterns can in turn be linked to CET (as a discriminating variable).

3. Data and methodology

3.1. Data

We analyze four country matched samples of business students from urban areas based on recommendations regarding generalizability criteria from student samples (Peterson & Merunka, 2014) and sampling considerations in international business research (Reynolds, Simintiras, & Diamantopoulos, 2003). Following translation and back-translation, survey data was collected through web-based questionnaires at undergraduate programs of leading business schools in Tokyo (Japan), Shanghai (China), Ljubljana (Slovenia) and Zagreb (Croatia). Except for Shanghai, the other three cities are respective country capitals. All four cities are the biggest and most international cities in their countries. The respondents were instructed to focus on fast moving consumer goods (FMCGs); excluding food items (which are subject to greater cultural differences).[6] We provided examples of FMCG categories for

illustration (e.g. cosmetics, toiletries and soft drinks). Table 2 shows key descriptive statistics.

Except for the Japanese sample, most respondents in the other samples were female. In the Japanese sample, most respondents were male (66.4%). We tested for gender differences across all CDMS dimensions and CET. Since we did not find significant differences, we deemed the difference in gender structure between the Japanese and other samples not critical. The four country samples were comparable in terms of respondent age and urban background, as well as (low) level of work experience.

3.2. Methodology

We employed Fan and Xiao's (1998) CSI-based survey instrument which identified five cognitive characteristics of consumer decision-making: brand consciousness, time consciousness, quality consciousness, price consciousness, and information utilization (confused by over-choice). The instrument is an adapted version of Sproles and Kendall's (1986) CSI instrument developed for China.

We employed 7-point ordinal Likert-type scales (1-less important, 7-most important). Invariance analysis was conducted for samples from the four countries. According to Steenkamp and Baumgartner (1998), configural invariance should be at least established if the objective of the study is to explore the basic meaning and the structure of the model across groups. Having achieved configural invariance, Steenkamp and Baumgartner (1998) suggest increasingly restrictive forms of invariance (metric, factor variance and error variance invariance) for a set of nested models. Our data was tested for configural and metric invariance using multi-group CFA analysis in *MPlus* 7.3 (see Appendix 1 for Chi-square difference tests). We also tested for common method bias effects using a correlational marker technique (Lindell & Whitney, 2001; Williams, Hartman, & Cavazotte, 2010). The underlying correlation analysis between substantive and marker variables did not show evidence of common method bias effects.

4. Results

4.1. Identification of CDMS

We first checked for measurement invariance. Only four out of the five identified CDMS by Fan and Xiao (1998) achieved appropriate invariance thresholds. The *time conscious* factor was eliminated from further analysis, as neither configural nor metric invariance could be achieved (Steenkamp & Baumgartner, 1998). This is why we present results only for four CDMS. For quality consciousness and information utilization, factor loadings were equivalent across groups, as evident from non-significant Chi-square difference tests ($\Delta \chi 2$) between configural and metric nested models (see Appendix 1).

The brand consciousness factor displays the most balanced Chi-square contribution in multi-group CFA. Central and Eastern European samples have larger Chi-square contributions than the East Asian ones; accounting for more variance among the countries. The Japanese sample had the lowest Chi-square contribution across three out of the four CDMS. The exception was information utilization (confusion by over-choice), where the Chinese sample had the lowest Chi-square contribution. The results of our invariance analysis are shown in Appendix 1 and also include results for invariance testing related to CET; where two out of the ten items from Shimp and Sharma (1987)

(*footnote continued*)
dialectic view of Chinese (Asian) consumers. It corresponds to the consumption of global products in public to show cosmopolitanism and status, but more traditional consumption in private/at home (Zhou & Belk, 2004). It is also supported by evidence from marketing practitioners in East Asia (Davies & Rašković, 2017).

Table 2
Sample characteristics.

	Slovenia	Croatia	China	Japan
Sample size (n)	246	243	208	233
% of female respondents	77%	79%	69%	33.6%
Age-birth year (std. dev.)	23–24 years (6.5)	23–24 years (2.0)	21–22 years (1.9)	19–20 years (5.4)
% of undergraduates	80%	71%	82%	78%
% of urban	100%	100%	100%	100%

Table 3
EFA results with reliability statistics.

	Slovenia	Croatia	China	Japan
Brand consciousness (Cronbach alpha)	0.74	0.73	0.81	0.80
Highly advertised brands are usually very good.	0.727	0.626	0.589	0.747
A brand recommended in a consumer magazine is an excellent choice for me.	0.642	0.619	0.633	0.798
The most well-known national brands are the best for me.	X	0.498	0.803	0.582
The more recognizable the brand, the better the quality of the product.	0.718	0.724	0.658	0.663
Expensive brands are usually the best.	0.496	0.466	0.602	X
Quality consciousness (Cronbach alpha)	0.82	0.75	0.80	0.68
My standards and expectations for products I buy are very high.	0.733	0.630	0.767	0.638
I make a special effort to choose high quality products.	0.826	0.809	0.762	0.638
I usually buy well-known, national, or designer brands.	0.693	0.525	0.446	0.427
When it comes to purchasing products, I try to get the very best or perfect choice.	0.537	0.574	0.680	0.473
I buy high quality products, since they last longer.	0.657	0.502	0.578	0.496
Price consciousness (Cronbach alpha)	0.63	0.73	0.79	0.62
I carefully watch how much money I spend.	0.566	0.480	0.701	0.439
I consider price first, when making purchases.	0.690	0.653	0.719	0.717
I usually chose lower price products.	X	0.624	0.690	0.626
I usually compare at least three brands before choosing.	0.524	0.623	X	X
I am prone to buying items on sale or in special deals.	0.475	0.606	0.589	X
Information utilization (Cronbach alpha)	0.73	0.83	0.81	0.77
All the information I get on different products confuses me.	0.577	0.826	0.745	0.667
There are too many brands to choose from so I often feel confused.	0.824	0.914	0.857	0.788
Sometimes it is hard to choose at which stores to shop.	0.601	0.701	0.687	0.704
I often make careless purchases that I later regret.	0.545	0.510	0.484	X
Explained variance (Varimax rotation) for CDMS	43.9%	44.1%	50.5%	38.2%
CET (Cronbach alpha)	0.93	0.92	0.94	0.93
Purchasing foreign-made products is anti-[country].	0.825	0.790	0.834	0.790
It is not right to purchase foreign-made products, because it puts [country] people out of jobs.	0.903	0.847	0.910	0.886
A real [country] should always buy [country] products.	0.894	0.829	0.871	0.863
We should purchase products manufactured in [country] instead of letting other countries get rich from us.	0.853	0.821	0.851	0.847
[Country] should not buy foreign products, because this hurts [country] business and causes unemployment.	0.884	0.877	0.921	0.893
It may cost me in the long run, but I prefer to buy [country]-made products.	0.721	0.651	0.701	0.620
[Country] consumers who purchase products made in other countries are responsible for putting their fellow [country] people out of work.	0.783	0.803	0.895	0.822
We should buy from foreign countries only those products which we cannot obtain within our own country.	0.722	0.697	0.798	0.797

Note: "X" denotes factor loading below 0.4.

had to be omitted (neither configural nor metric variance could be achieved). Given the reflective nature of the construct, this was not deemed problematic.

Table 3 provides results for a four-factor Exploratory Factor Analysis (EFA) rotated solution (Varimax rotation) and accompanying loadings related to CET. A list of statements from Fan and Xiao's (1998) instrument which were omitted in the process of invariance testing is available in Appendix 2.

Only factor loadings above 0.4 are presented. Next, a weighted composite variable was calculated based on the factor loadings. The composite scores for the four CDMS and CET are shown in Table 4 along with results of ANOVA testing. ANOVA results show that there are significant differences for all CDMS across the four country matched samples ($p = 0.000$). The same also applies for CET.

Looking at the scores for specific CDMS, we can see Japan (4.08) and China (4.03) score higher on brand consciousness than Croatia (3.94) and Slovenia (3.25). This is consistent with the so-called dispositional view of cultural influences on consumer behaviour. Asian consumers display greater conduciveness to the symbolic and conspicuous aspects of brands (Braley, Morris, & Simonson, 2000; Cayla & Eckhardt, 2008).

Concerning quality consciousness, while the scores for Croatia (4.89), Slovenia (4.57) and Japan (4.46) are similar, China displays a higher degree of quality consciousness (5.02). This is consistent with research on Chinese consumers, which has shown very high quality-seeking behaviour; also more closely linked to price-related quality associations (Ackerman & Tellis, 2001).

Price consciousness is higher in Croatia (5.06) and Japan (5.04) than in China (4.57) and Slovenia (4.86). Generally, young-adult consumers in all four countries display high levels of price consciousness, which is consistent with prior research (Moschis & Moore, 1979).

In terms of information utilization (confusion by over-choice), we can observe a similar pattern to brand consciousness. China (4.44) and Japan (4.11) score much higher than Slovenia (3.27) and Croatia (3.41). This may be supported by evidence on differences in product evaluation patterns. Cowley (2002) has shown that Western linear thinking focuses more on individual product attributes, while Eastern non-linear thinking assumes a more holistic perspective.

With regards to CET, all four countries display relatively low levels of CET. Yet, two things are worth noting. First, the relative level of variability is much higher in the case of CET across all four countries than for CDMS (higher coefficient of variation). Second, Chinese young-

Table 4
Composite CDMS scores across the four country samples and ANOVA results.

	Slovenia	Croatia	China	Japan	F-statistic[*]
Brand consciousness	3.25 (*1.07*)	3.94 (*1.02*)	4.03 (*1.15*)	4.08 (*1.09*)	30.74***
Quality consciousness	4.57 (*1.19*)	4.89 (*1.01*)	5.02 (*1.09*)	4.46 (*0.96*)	13.80***
Price consciousness	4.86 (*1.15*)	5.06 (*1.03*)	4.57 (*1.13*)	5.04 (*1.20*)	9.12***
Information utilization	3.27 (*1.36*)	3.41 (*1.43*)	4.44 (*1.25*)	4.11 (*1.35*)	38.33***
CET	2.76 (*1.40*)	2.90 (*1.34*)	2.43 (*1.30*)	2.84 (*1.25*)	5.012**

Note: Scores calculated as a weighted average score, based on factor loadings. Standard deviations shown in brackets.
  [*] Significance levels: $p < 0.05$.
 [**] Significance levels: $p < 0.01$.
[***] Significance levels: $p = 0.000$.

Table 5
Inter- and intra-regional differences in young-adult CDMS and CET (t-test).

	East Asia – within region	CEE[a] – within region	Between regions
Brand consciousness	NO (0.657)	YES (0.000)	YES (0.000)
Quality consciousness	YES (0.000)	YES (0.002)	NO (0.988)
Price consciousness	YES (0.000)	YES (0.036)	YES (0.060)
Information utilization	YES (0.009)	NO (0.255)	YES (0.000)
CET	YES (0.001)	NO (0.254)	YES (0.041)

Note: Values in brackets show significance values (p) for independent sample t-test calculated from the composite weighted average scores in Table 3.
 [a] Abbreviation for Central and Eastern Europe.

adult consumers display the lowest relative levels of CET (2.43), while the other three countries display slightly higher levels of CET (> 2.76).

We also performed inter- and intra-regional comparisons, based on the importance of regional differences in consumer behavior linked to acculturation to a global consumer culture (Cleveland, Papadopoulos, & Laroche, 2011). Table 5 presents pair-wise independent sample *t-test* results between the regions (East Asia vs Central and Eastern Europe), as well as within the regions (Slovenia vs Croatia, China vs Japan).

In East Asia, young-adult consumers are similar only when it comes to *brand consciousness*; but not the rest. The case is somewhat different for Central and Eastern Europe, where the two countries are similar only when it comes to *information utilization* (confusion by over-choice).

Concerning our inter-regional comparison, there are no significant differences between East Asia and Central and Eastern Europe when it comes to *quality consciousness*. However, there are significant differences related to the remaining three CDMS. In terms of CET, we find significant differences between East Asia and Central and Eastern Europe, as well as within the East Asia region. This is not the case when it comes to Central and Eastern Europe. We discuss implications of these findings under Theoretical implications section.

4.2. Link between CET and CDMS

Before proceeding to our segmentation analysis, we looked at simple pair-wise correlations between CET and any of the four CDMS within each country. Table 6 summarizes the results. We can see that the pair-wise correlation coefficients (albeit mostly weak) can be established for three CDMS in the case of Slovenia ($p \leq 0.1$) (with the

exception of *price consciousness*) and for two CDMS in the case of Croatia ($p \leq 0.05$) (with the exception of *brand* and *price consciousness*). However, there isn't a single significant pair-wise correlation in the case of either China or Japan.

4.3. Segmentation analysis

We first performed hierarchical clustering on pooled data from all four country samples. We identified five specific clusters, as shown in Table 7. The first segment represents a slightly larger share (29.8%), while the others are quite balanced in terms of their relative sizes (17–18%).

Bassed on ANOVA analysis, the biggest difference between the five sub-segments is related to the role of *brand consciousness* and *information utilization* (confusion by over-choice). This is consistent with country-specific differences in consumer behaviour (Leo et al., 2005), the dispositional view of consumer behavior related to brands (Braley et al., 2000) and differences in information utilization (Cowley, 2002).

High brand consciousness is characteristic for three out of the five segments, as is a high degree of confusion by over-choice (information utilization). Looking at how the two aspects are connected, segment #3 assigns low importance to brands and is not confused by over-choice (has no problem processing the information), corresponding to a *low/low* relationship. On the other hand, both segments #2 and #5 display high sensitivity to brands and a high degree of confusion by over choice (to struggle with information processing). This corresponds to a *high/high* relationship. The only difference is segment #2 on average displays high scores on all four CDMS; with brand consciousness being relatively least important. Segment #5 displays more moderate scores across all four CDMS.

In terms of CET, some significant differences can be observed between the five identified segments (with mean differences being significant at $p = 0.012$). While segment #1 displays high levels of brand, quality and price consciousness and a low level of confusion by over-choice, it displays the lowest average level of CET. Segment #5 displays high confusion by overchoice and the highest relative level of CET among the five segments (albeit still quite low).

Table 8 presents an overview of young-adult consumer segments based on their CDMS and CET. In all four countries, the clustering procedure produced a smaller number of cluster than when clustering was performed on pooled data. Four clusters were identified in the case of Slovenia and Japan, and three clusters in the case of Croatia. The

Table 6
Pair-wise correlation coefficients between CET and CDMS according to country.

	Slovenia	Croatia	China	Japan
Brand consciousness	0.141 (*0.031*)	0.065 (*0.326*)	0.037 (*0.606*)	−0.050 (*0.456*)
Quality consciousness	0.115 (*0.082*)	−0.135 (*0.039*)	−0.126 (*0.077*)	−0.115 (*0.086*)
Price consciousness	0.051 (*0.431*)	0.016 (*0.801*)	−0.043 (*0.546*)	0.018 (*0.788*)
Information utilization	0.184 (*0.004*)	0.138 (*0.034*)	−0.004 (*0.952*)	0.075 (*0.256*)

Values in brackets show significance values (p) for Pearson's pair-wise correlations.

Table 7

Segmentation of young-adult consumers based on CDMS and CET.

CDMS scores (1–7)	Segment #1 (29.8%)	Segment #2 (17.6%)	Segment #3 (18.0%)	Segment #4 (17.1%)	Segment #5 (17.5%)	F-statistic**
Brand conscious	4.21	4.57	2.88	2.82	4.31	146.86***
Quality consciousness	5.09	5.42	3.94	4.24	4.65	67.46***
Price consciousness	4.99	5.77	4.38	5.26	3.97	83.62***
Information utilization	2.83	5.26	2.25	4.62	4.52	372.17***
CET	2.59	2.84	2.62	2.75	3.02	3.235*

Note: Segments obtained based on a hierarchical clustering approach (Ward's method, Square Euclidian distance).

* Significance level: $p < 0.05$.
** Significance level: $p < 0.01$.
*** Significance level: $p = 0.000$.

clustering approach for China initially produced five clusters. However, upon inspection of the size of the clusters, we established that the fifth cluster included only seven observations. Hence, a four-cluster solution was established for China.

The four segments in Slovenia were relatively evenly balanced in

terms of size; showing generally a relatively low degree of brand consciousness and a high degree of rational consumer decision-making split into three distinct sub-groups: balanced importance of quality and price, importance of quality and importance of price. Confusion by over-choice is quite low for segments #3 and #4, moderate for segment

Table 8

Young-adult consumer segmentation based on cluster analysis and CDMS.

Slovenia

CDMS scores (1–7)	Segment #1 (26.1%)	Segment #2 (22.2%)	Segment #3 (27%)	Segment #4 (24.8%)	F-statistic
Brand conscious	Low (3.40)	Low (3.50)	Low (2.53)	Moderate (3.68)	21.01***
Quality consciousness	Low (3.33)	High (5.27)	Moderate (4.46)	High (5.29)	60.93***
Price consciousness	High (5.39)	Moderate (4.20)	Moderate (4.61)	High (5.16)	13.91***
Information utilization	Moderate (3.66)	Moderate (4.70)	Low (2.06)	Low (2.75)	90.01***
CET	Low (2.60)	Low (3.12)	Low (2.30)	Low (3.03)	4.33***

Croatia

CDMS scores (1–7)	Segment #1 (40.2%)	Segment #2 (37.2%)	Segment #3 (22.6%)	F-statistic
Brand conscious	Moderate (3.98)	Moderate (3.51)	Moderate (4.56)	20.32***
Quality consciousness	Moderate (4.78)	Moderate (4.51)	High (5.66)	27.03***
Price consciousness	High (4.84)	Hih (5.31)	High (5.00)	4.96**
Information utilization	Low (2.11)	Moderate (4.68)	Low (3.67)	191.71***
CET	Low (2.71)	Low (3.13)	Low (2.89)	2.34

China

CDMS scores (1–7)	Segment #1 (36.8%)	Segment #2 (30.5%)	Segment #3 (15.8%)	Segment #4 (16.8%)	F-statistic
Brand conscious	Moderate (3.92)	Moderate (4.87)	Low (2.88)	Moderate (4.32)	47.58***
Quality consciousness	Moderate (4.83)	High (5.67)	Moderate (4.25)	High (5.54)	35.46***
Price consciousness	Moderate (3.74)	High (5.27)	High (5.19)	High (5.07)	40.03***
Information utilization	Moderate (4.10)	High (5.42)	High (5.18)	Low (3.23)	54.96***
CET	Low (2.51)	Low (2.36)	Low (2.03)	Low (2.53)	1.12

Japan

CDMS scores (1–7)	Segment #1 (25.6%)	Segment #2 (27.9%)	Segment #3 (34.0%)	Segment #4 (12.6%)	F-statistic
Brand conscious	Moderate (3.53)	Moderate (4.94)	Moderate (4.11)	Low (3.22)	30.90***
Quality consciousness	Moderate (3.80)	High (5.13)	Moderate (4.37)	Moderate (4.52)	24.33****
Price consciousness	Moderate (3.93)	Moderate (4.84)	High (5.80)	High (5.77)	51.49***
Information utilization	Moderate (3.75)	Moderate (4.39)	Moderate (4.73)	Low (2.19)	40.50***
CET	Low (3.04)	Low (3.01)	Low (2.70)	Low (2.32)	2.65*

Notes: Based on a hierarchical clustering approach (Ward's method and Square Euclidean distance measure) and a 4-factor CDMS solution.

Low levels corresponding to mean scores of 3.5 an below, moderate levels corresponding to mean levels between 3.51 and 4.99, high levels corresponding to mean scores of 5.00 and above on 7-point ordinal Likert-type scales.

* Significance levels: $p < 0.05$.
** Significance levels: $p < 0.01$.
*** Significance levels: $p = 0.000$.

#1 and high only for segment #2. Segments #2 and #4 display significantly higher levels of CET and score above the 3.0 mark.

In the case of Croatia, two very distinct segments appear. While both segments #1 and #2 assign high importance to price and quality, and a relatively moderate importance to brands, the key distinction is in terms of their information utilization (confusion by over-choice). Segment #1 is not confused by over-choice, while segment #2 seems to struggle with too much choice and how to process the corresponding information. Interestingly, now significant differences are found between the three identified segments when it comes to CET.

Chinese young-adult consumers are also characterized by two key segments. Both seem to be confused by over-choice and seem to struggle with corresponding information (segment #2 even more than segment #1). A particularly interesting segment are young-adult consumers in segment #2, who are most confused by over-choice. They are highly price sensitive, but also demand high quality. Chinese young-adult consumers seem to have a much less linear consumer decision-making process than their Central and East European peers. They generally have a strong price-quality sensitivity, as well as display higher sensitivity to brands. An interesting segment is segment #3, which has high price-quality sensitivity, is confused by over-choice, but is much less brand sensitive. While segment #3 displays somewhat lower levels of CET, the difference is not significant compared to the other three segments.

The four Japanese segments seem to be more balanced. Segment #1 displays moderate scores for all four CDMS. Their exact opposites are segments #2 and #3. While both display high confusion by too much choice (information processing issues), segment #2 is more quality sensitive and segment #3 is more price sensitive. Segment #4 shows a high importance of price and quality consciousness, but unlike segment #3 relatively lower degree of confusion by too much choice. Significant differences in the levels of CET can be observed among the four segments, but the level of significance is borderline at p = 0.05, with segments #1 and #2 scoring slightly above the 3.0 mark on CET.

4.4. Summary of hypotheses testing

Table 9 summarizes the results of our hypotheses testing. Only the second hypothesis could be fully supported (generally low levels of CET) out of the four hypotheses. The first hypothesis related to the applicability of the Fan and Xiao's (1998) CDMS framework was mostly supported, with comparability across four out of the five originally identified CDMS and only limited invariance issues.

The third research hypothesis and one of the fourth sub-hypotheses (H4b) referring to a link between CDMS and CET found only partial support, while the other sub-hypothesis related to similar CDMS patterns across the studied countries could not be supported at all.

5. Discussion

5.1. Theoretical implications

With regards to the applicability of Fan and Xiao's (1998) CDMS framework, we were able to show a high level of applicability across the four countries. A four-factor CDMS solution was produced, with comparable factor loadings for *quality consciousness* and *information utilization*.

With regards to CDMS, our results raise three important implications. First, they support cautious optimism by Hafstrom et al. (1992) with regards to the applicability of the CDMS framework across countries. At the same time, they also point to some noticeable variability, which is also consistent with related evidence from cross-validation of the AGCC scale measuring acculturation to global consumer culture (Durvasula & Lysonski, 2016). Second, the fact that the *time conscious* factor could not be compared due to invariance issues supports a core-culturally contingent structure within the CDMS framework. This has been suggested by Fan and Xiao (1998), when adapting the original CSI for China. It was also suggested by Anić et al. (2016) within a multi-country comparison from the Western Balkans. Third, our analysis of previous multi-country CDMS studies (in Table 1) shows that we need to question prior evidence regarding the general applicability of Sproles and Kendall's (1986) eight-factor CDMS framework in diverse multi-country and regional contexts (Hafstrom et al., 1992). The predominance of such studies has not addressed invariance analysis. They merely benchmarked CFA results. While it might be the case that "similarities outweigh the differences" when it comes to CDMS (Durvasula et al., 1993, p. 60), establishing appropriate measurement invariance is the first step in multi-country analyses (Steenkamp & Baumgartner, 1998).

Obviously, in our case, the concept of time was a particularly sensitive issue due to an East-West cultural comparative context. Indeed, invariance became an issue only when comparing the two countries from Central and Eastern Europe with the two countries from East Asia; but not within the respective regions. This supports prior evidence on differences in the conceptualization and cultural orientations towards time among Western and Eastern cultures, which emerged from the literature on the Confucian dynamism concept (Hofstede & Bond, 1988).

Our results also raise implications for cross-cultural research. First, comparing China, Croatia, Japan and Slovenia offered a balanced intra- and inter-regional perspective. Such balanced comparisons are less common within CDMS studies. These usually employ diverse multi-country samples, or single pair-wise country East-West benchmarking. We have shown that significant inter- and intra-regional differences exist when it comes to CDMS of young-adult consumers in East Asia and Central and Eastern Europe; and that regional differences are not bigger than country differences. This carries implications for understanding regional boundaries of the so-called global consumer culture (Merz

Table 9
Summary of hypotheses testing.

Hypothesis	Result	Comment
H1: General applicability of CDMS framework across the four countries	Mostly supported	Four out of the five CDMS passed invariance testing. Comparable factor loadings observed for *quality consciousness* and *information utilization* across the four country samples.
H2: Young-adult consumers display generally low CET levels	Supported	All four countries displayed low CET mean scores (below the 3.0 mark on a 7-point ordinal Likert-type scale). China did, however, display significantly lower levels of CET than the other three countries.
H3: Clear link between CET and CDMS	Partially supported	Significant pair-wise correlation coefficients found for some CDMS in the case of Central and Eastern Europe.
H4a: Similar CDMS patterns	Not supported	Similar CDMS patterns observed only for price consciousness across segments in all four countries and CET.
H4b: CDMS patterns linked to CET	Partially supported	Significant CET mean score differences across the identified segments only in the case of Slovenia and borderline significant differences in the case of Japan. No significant CET mean scores differences in the case of Croatia and China.

et al., 2008) and CDMS research (Anić et al., 2016; Ding et al., 2018; Rašković et al., 2016). Of course, further research should be conducted to what degree are such differences driven by national or personal culture orientations; but this was beyond the scope of our study.

With regards to CET, our research has established the validity and cross-cultural comparison of Shimp and Sharma's (1987) original CETSCALE through invariance analysis called for by Sharma (2015). It supports the unidimensionality of the CET concept called into question in cross-cultural studies (Jimenez-Guerro, Gazquez-Abad, & Linares-Aguera, 2014; Sharma, 2015).

The two items from the original 10-item CETSCALE which needed to be omitted due to invariance issues in our analysis also correspond to items omitted in various reductions of the CETSCALE (see Jimenez-Guerro et al., 2014). This points to wording issues, which might be particularly susceptible to semantics and/or cultural differences in assertiveness and type of identity formation (e.g. independent vs interdependent identity construal in the West and East).

Second, a weak relationship could only be established between CET and CDMS in the case of Central and Eastern Europe. However, given the strength of the pair-wise correlations, one needs to be particularly mindful of ecological fallacy[7] and effect size. This is a particular concern in multi-country studies, where aggregate mean scores are compared (McSweeney, 2013). The lack of any relationship between CET and any CDMS in the case of the two East Asian country samples is consistent with experimental research conducted on young-adult consumers in China. In it, country of origin (COO) effects were tested with regards to consumer decision-making of high involvement products from Germany and China (Wong, Polonsky, & Garma, 2008). COO effects and CET had limited impact on product assessment (quality) and purchase intentions. The authors explained this through consumer experience with "hybrid" high-involvement products, which have become the norm among Asian consumers.

We believe our results point to a need for further empirical verification of CDMS. Young-adult consumers display generally low CET levels (Sharma et al., 1995; Yen, 2018), regardless of the level of development of a market; as suggested by Jin et al. (2015). This was consistent in our research across all consumer sub-segments (archetypes) identified in our segmentation analysis; not just at the country level. This makes other determinants and moderators of CDMS more relevant than CET (Welsley et al., 2006), at least among young-adult consumers (Yen, 2018). CET is thus a poor discriminating variable to distinguish between various sub-segments of young-adult consumers. This does not, however, mean is cannot be useful for other demographic cohorts, as suggested by Wang et al. (2004).

Lastly, in terms of thinking of young-adult consumers as *a* common global segment (Cleveland et al., 2016; Kjeldgaard & Askegaard, 2006), our results question this understanding and call for more examination; at least in the context of CDMS. As our results in Table 7 have shown, not all young-adult consumers are brand conscious or able to process a lot of information when it comes to choice. As Table 8 shows, very different consumer archetypes can be identified within and between the four compared countries and their respective regions. In particular, the fundamental assumption that young-adult consumers are able to process a lot of information and do not get confused by a lot of choice (Moschis & Moore, 1979; Wang et al., 2004) is not consistent with our evidence and warrants further empirical exploration.

Our evidence supports different consumer archetypes consistent with a more sociological understanding of various consumer "constellations" for this consumer demographic cohort (Beck & Beck-Gernsheim, 2009). However, the generally low level of CET and

inconsistent relationship between CET and CDMS does in our opinion lend support to an underlying common global citizen identity (Sobol et al., 2018), further reinforced by strong acculturation tendencies to a global consumer culture (Cleveland et al., 2016). In this regard, young-adult consumers can be thought of as an archetypal global segment when it comes to CET (Sobol et al., 2018), but not when it comes to CDMS.

5.2. Managerial implications

The key managerial implication of our study is that young-adult consumers might be archetypal global citizens with generally low levels of CET across various sub-segments, countries and regions. Yet, this does not imply that they also have universal consumer decision-making patterns, as suggested by some empirical evidence. This is because the majority of such evidence has been based on comparing various demographic cohorts. In such comparisons age was simply a control variable.

We suggest a more cautious two-step generational segmentation approach. In the first step, consumers may be segmented according to their age groups and greater homogeneity may be assumed relative to other age cohorts. However, in the second stage, when young-adult consumers are targeted, homogeneity should not be a priori assumed and greater care should be paid to customer-centric segmentation and sensitivity to specific consumer constellations when it comes to their CDMS. This is consistent with archetypal analysis, particularly useful in segmentation research and cross-cultural comparisons (Venaik & Midgley, 2015). It is also important to note that a customer-centric segmentation approach is not necessarily an antinomy to a market-centric segmentation approach. Most international firms are likely to first identify specific geographical markets or regions and then focus on segmentation within those markets.

We have shown the value of consumer-centric segmentation across international markets, at least when it comes to CDMS. This has obvious implications for how international companies segment consumers, develop and implement international marketing strategies (Zou & Cavusgil, 2002). The multitude and distinctiveness of our segmentation analysis between and within the markets and/or regions shows the fragmented nature of post-modern markets (Firat & Schultz, 1997). It also shows that international marketing needs to learn from cross-cultural research. This has shown that within-country differences may explain 80% of variability, while between-country differences explain only 20% (Taras, Steel, & Kirkman, 2016).

Without going into specific details about most appropriate strategies for each of the four markets or specific segments within markets, we would like two point out three things. First, the concept of time and temporal orientations of consumers differ significantly between East and West. This has implications for shopping behaviour and marketing communications. Second, young-adult consumers differ significantly when it comes to their information processing capabilities. This appears to be the biggest differentiating CDMS in our analysis. International marketers should not blindly assume that young-adult consumers are able to process large amounts of information and may not get confused by over- choice. As similar observation can also be made for certain consumer sub-segments when it comes to the importance of brands. Third, our study also shows that young-adult consumers have very complex and non-linear price-quality judgements. These seem to be more consistent with the post-modern understanding of markets and market segmentation (Firat & Schultz, 1997).

5.3. Limitations of our research

In interpreting our results, one needs to keep in mind some research limitations. We have tried to address the general limitation of cross-sectional research by avoiding causal inferences and have deliberately adopted a descriptive comparative approach. We acknowledge that our

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[7] Ecological fallacy relates to "fallacious inference that the characteristics (concepts and/or metrics) of an aggregate (historically called 'ecological') level also describe those at the lower hierarchical level or levels" (McSweeney, 2013, p. 484).

research lacked a relevant dependent variable, like willingness to buy or actual product purchase. This is especially relevant when it comes to CET. We also acknowledge that Fan and Xiao's (1998) CSI instrument is itself an adaptation of the original CSI instrument by Sproles and Kendall (1986). However, it is worth noting that several reliability and validity issues were raised when applying the original CSI instrument in China (Hui et al., 2001).

6. Conclusion

Our study has sought to address the universality of young-adult consumers as an archetypal global consumer segment, particularly appealing to international marketers due their cosmopolitan nature and implications for greater marketing standardization. We have established that while young-adult consumers are an archetypal global consumer segment in terms of CET, this is not the case for CDMS. A plethora of unique CDMS constellations exists within this generational cohort, with greater within-country variability than between countries and even regions. This calls for a customer-centric and constellational approach to segmentation of young-adult consumers in international markets. It is also more consistent with a sociological understanding of young-adult consumers as a set of global generational constellations.

With regards to CET, our study has shown that young-adult consumers have a universally low predisposition towards ethnocentric consumer behaviour, regardless of their CDMS. It suggests that while CET can be employed as a segmentation variable across different demographic cohorts, it is a poor discriminating variable in CDMS-based segmentation analysis among young-adult consumers across international markets.

Appendix A. Appendix 1

Results from invariance testing based on multi-group Confirmatory Factor Analysis (CFA) in Mplus 7.3 with increasingly restrictive forms of invariance and Chi-square difference tests for a set of nested models:

- **Brand consciousness** (configural invariance): Chi-square = 46.766, df = 20, p = 0.006; **Slovenia**: 35% (Chi-square = 16.515), **Croatia**: 19% (Chi-square = 9.007), **China**: 24% (Chi-square = 11.275), **Japan**: 21% (Chi-square = 9.969). Comparison of metric against configural model: Chi-square difference test = 49.112, df = 12, p = 0.000.
- **Quality consciousness** (metric invariance): Chi-square = 92.414, df = 32, p = 0.000; **Slovenia**: 43% (Chi-square = 39.796), **Croatia**: 33% (Chi-square = 30.833), **China**: 16% (Chi-square = 14.348), **Japan**: 8% (Chi-square = 7.436). Comparison of metric against configural model: Chi-square difference test = 17.295, df = 12, p = 0.1388.
- **Price consciousness** (configural invariance): Chi-square = 89.724, df = 20, p = 0.000; **Slovenia**: 49% (Chi-square = 44.238), **Croatia**: 26% (Chi-square = 22.943), **China**: 13% (Chi-square = 11.823), **Japan**: 12% (Chi-square = 10.720). Comparison of metric against configural model: Chi-square difference test = 32.173, df = 12, p = 0.0013.
- **Information utilization** (metric invariance): Chi-square = 42.723, df = 17, p = 0.0005; **Slovenia**: 50% (Chi-square = 21.749), **Croatia**: 19% (Chi-square = 8.271), **China**: 7% (Chi-square = 2.779), **Japan**: 24% (Chi-square = 10.194). Comparison of metric against configural model: Chi-square difference test = 11.665, df = 9, p = 0.2329.

Appendix B. Appendix 2

Excluded statements from Fan and Xiao's (1998) instrument in the process of invariance testing:

- Brand consciousness:
  o I usually compare advertisements when buying fashionable products.
  o All brands are the same in overall quality.
  o I usually choose the most expensive brands.
- Quality consciousness:
  o It is fun to buy something new and exciting.
  o I should plan my shopping more carefully than I do.
  o I accept that top quality products are much more expensive than regular quality products.
- Price consciousness:
  o The most expensive brands are usually my preferred choice.
  o I always make my purchases by comparing the price to the quality of the product.
  o I take part in loyalty programs to get discounts and special deals.
- Information utilization:
  o I like to gather as much information about a new/unfamiliar product before buying it.
  o I get most of the information about products online.
  o I like to consult with friends/family before purchasing a product.

Excluded statements from Sharma and Shimp's (1987) CETSCALE instrument in the process of invariance testing:

- Only those products unavailable in [country] should be imported.
- [Country] products: first, last, and foremost.

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