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Research Paper

Demographics in the relationships between consumer ethnocentrism and attitudes toward local and foreign products

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Abstract

More research is still needed to examine the role of various demographic subsamples in altering theoretical relationships based on consumer ethnocentrism. This paper aims to understand the heterogeneity effects of demographic groups in the relationships between consumer ethnocentrism and attitudes toward local and foreign products. An online survey collected 943 samples which were divided into six equal subsamples of (a) gender, (b) income, (c) island, (d) education, (e) occupation, and (f) geographic. Partial least squares multigroup and measurement invariance of composites support full invariance across education, occupation, and location, which encourages pooling sample data for analysis. Partial invariance found across gender, income, and island confirms no significant moderating heterogeneity effects. As a result, this study presents a new finding of homogeneity by not separating the baseline sample. This method avoids confusion in the theoretical relationships between consumer ethnocentrism and attitudes toward local and foreign products. This empirical study holds theoretical significance for marketing researchers, emphasizing the importance of reporting standard measurement invariance before engaging in multigroup comparisons. The practical contributions of marketers entail mass marketing strategies. Future research can expand beyond this study's limitations by examining cross-country comparisons and including more than two groups for comparison.

Keywords: Multigroup, Measurement invariance, Demographics, Consumer ethnocentrism, Attitudes.

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Introduction

International business and marketing studies have highlighted consumer ethnocentrism as a predominant factor influencing customers' preference for native products over imported ones (Kartikasari et al., 2023). Some vehemently assert their right to purchase any products they like, irrespective of their country of origin, but some ethnocentric consumers do not (Shimp and Sharma, 1987). The concept of consumer ethnocentrism suggests that consumers may consider the purchase of foreign items to be "wrong," as it may negatively impact on the local community's economy and lead to the loss of jobs in industries that compete with foreign producers. This induces some so-called patriotic consumers to adamantly reject purchasing imported products and reprimand fellow consumers who engage in such behavior. The phenomenon of consumer ethnocentrism and its measurement has been extensively studied in numerous countries, particularly economically advanced ones. However, there needs to be more understanding of the effects of consumer ethnocentrism in emerging nations (Pentz et al., 2014; Kartikasari et al., 2023). This study fills the gap by offering insights into the impact of consumer ethnocentrism in a developing country on attitudes toward local and foreign products. In research about local versus foreign products, attitudes tend to be more indicative than actual purchasing behavior for two reasons. Firstly, actual purchasing behavior is often influenced by availability and context. Secondly, individuals frequently exaggerate claims about acquiring foreign products to maintain their reputation (Uncles and Sauaraz, 2000; Herz and Diamantopoulos, 2017).

Comparisons between nations and cultures have been a subject of interest in economics for many years. Firms not only conduct business internationally but also domestically. Populations have undergone increasing diversification over time, giving rise to cross-cultural comparisons, i.e., gender, income, geography, and education, within single-country boundaries increasingly relevant (Van Herk and Goldman, 2022). This study aims to consider the influence of a diversified population in multiple theoretical relationships, hoping to provide support (or weaken) the relevance of these theories in the updated setting.

Most existing literature only considers demographic differences within consumer ethnocentrism (Pentz et al., 2014) or uses demographics as controlling variables (Shimp and Sharma, 1987). Nonetheless, the literature on heterogeneity effects on theoretical relationships rooted in consumer ethnocentrism using multigroup analysis (MGA) still needs to be improved. MGA in partial least squares structural equation modeling (PLS-SEM) has grown significantly in several study domains in recent years, chiefly in business subjects (Cheah et al., 2023). It is an effective method to assess moderation in a research model with several interactions (Cheah et al., 2020). This research fills this gap by focusing on this topic.

Understanding the intricate effects of consumer ethnocentrism in today's heterogeneous profiles can help local businesses sell to domestic markets and help international companies market global products. The literature review section discusses what the existing studies understand about this and how this study found the gap it will address. Hypotheses and conceptual framework are then presented before the section on methodology. Lastly, the article presents results, implications, and conclusions.

Literature Review

Demographics in International Marketing

International marketing research typically entails the comparison of distinct cohorts of participants (Henseler et al., 2016). Measurement invariance of composites (MICOM) and multi-group analyses are assumed to confirm whether some demographic groups, such as gender (Garcia-Machado et al., 2020), age, education, and income levels (Banerjee and Pradhan, 2022), act as moderators. By establishing full measurement invariance, a comparison between groups can reveal if there are (not) significant differences between women and men and, subsequently, whether gender is or is not a moderating variable (Garcia-machado et al., 2020).

Our sample is drawn from a multicultural country where diversified cultures and ethnicities exist across different islands, regions, and geographic locations because of urbanization (Mukti et al., 2022), capitalism, agrarian change (Habibi, 2022), or simply socioeconomic conditions (Maruyama et al., 2023). This specific characterization might alter the conceptual relationships under investigation.

Compositional Variance for Consumer Ethnocentrism and Attitudes Toward Local and Foreign Products

Consumer ethnocentrism plays a significant role in consumers' choice to buy locally-made products instead of imported ones. The social identity hypothesis suggests that ethnocentric consumers gain from their national identity by preferring domestic products and holding negative feelings toward foreign goods (Kartikasari, 2024). Since its establishment, marketers have recognized the importance of consumer ethnocentrism in comprehending consumer attitudes toward domestic and imported products because this understanding can aid in developing more impactful marketing tactics. In South Africa, gender and income influence consumer ethnocentrism differently (Pentz et al., 2014). In India, consumers segregated by gender and education are non-invariant, but those segregated by age and gender are invariant (Banerjee and Pradhan, 2022). In Andalusia (Spain), gender meets compositional invariance in business performance (Garcia-Machado et al., 2020).

Compositional invariance is required to accurately evaluate the equality of composite mean values and variances, implying that the indicator weights are equal. Suppose compositional variances for all constructs is established. In that case, the composite is established similarly across the groups, and the instrument is operating equivalently across these groups under study, and multigroup analysis is meaningful. Compositional invariance should be preceded by establishing configural invariance, which indicates equal parameterization and estimation (Henseler et al., 2016). The first hypothesis regarding the first step of measurement invariance is proposed as follows:

H1 Compositional variance for measuring consumer ethnocentrism and attitudes toward local and foreign products across demographic groups is established.

Mean for Consumer Ethnocentrism and Attitudes Toward Local and Foreign Products

Once a multigroup analysis is determined meaningful by accepting H1 above, researchers should establish the equivalence of the composite's average values to determine whether pooled data-level analyses are necessary. A permutation statistical tool is used to achieve this purpose. Partial Least Squares (PLS) derive construct scores by employing the combined data and, subsequently, each group. Suppose there is a substantial disparity in the average and dispersion values of the construct scores between the observations in the first and second groups; full measurement invariance is invalidated. Otherwise, it means that both differences are exactly zero or, at the very least, not statistically significant, and the data of the different groups can be pooled (Henseler et al., 2016). The following hypothesis is proposed for the equality of mean values.

H2 The composite mean values for measuring consumer ethnocentrism and attitudes toward local and foreign products are equal across demographic groups.

Variance in Consumer Ethnocentrism and Attitudes Toward Local and Foreign Products

Like the mean equality test above, variance equality examination is needed to determine whether pooled data-level analyses are necessary. If both mean and variance equalities are established, full measurement invariance is achieved, and the data of the different groups can be pooled. If either mean or variance equality is established, partial measurement invariance is achieved, and the standardized coefficients of the structural model of the different groups can be compared further using multigroup analysis (Henseler et al., 2016). For the variance values, the following hypothesis is proposed:

H3 The composite's variance values for measuring consumer ethnocentrism and attitudes toward local and foreign products are equal across demographic groups.

Consumer Ethnocentrism and Attitudes Toward Local Products

Most studies claim a positive relationship between consumer ethnocentrism and attitudes toward local products. Little found insignificant relationships. Out of this abundant literature, little discusses how demographic profiles come into play in the relationship (Kartikasari et al., 2023, p. 51). This study fills this gap by analyzing invariance and multigroup PLS.

Full measurement invariance is reached if H1, H2, and H3 are all accepted. This condition implies the study uses the pooled data level to boost statistical power. If any hypothesis is rejected, however, full measurement invariance cannot be proven, structural partial invariance is found, and the model should be expanded by adding interaction terms that consider how the structural model is different between the groups. This expansion can be done by doing a moderation analysis. If the observed heterogeneity in the models is not considered, the path estimates from the pooled data will not be valid (Henseler et al., 2016, p. 416). Notably, for groups of partial invariance, the following hypothesis is proposed:

H4 Demographics moderate the relationship between consumer ethnocentrism and

attitudes toward local products. Demographics under study include (a) Gender—Female vs. Male, (b) Income—Low vs. Middle, (c) Island—Java vs. Sumatra, d) Education—high school vs. undergraduate, (e) Occupation—employee vs. student, and (f) Geography—urban vs. rural.

Consumer Ethnocentrism and Attitudes Toward Foreign Products

Consumer ethnocentrism was initially introduced as a critical driving construct to affect attitudes toward foreign products as it slashes consumers' tendency to buy imports. This statement holds even after controlling for demographic, socioeconomic, and geographic factors (Shimp and Sharma, 1987). Consumer ethnocentrism is mainly built on social identity theory, where ethnocentric consumers reflect their national identities by owning local products and discriminating against foreign alternatives (Zuliarni et al., 2023). Most studies claim a negative relationship between consumer ethnocentrism and attitudes toward foreign products. A few found insignificant relationships. Scarcely any of this abundant literature discusses whether demographic profiles moderate the relationship (Kartikasari et al., 2023, p. 51).

Studies indicate that gender is generally not recognized as a significant influencing factor in global-local discourse (Pentz et al., 2014; Strizhakova and Coulter, 2019). However, women typically demonstrate a greater sensitivity to fashion than males (Beaudoin et al., 2000). Individuals with advanced education demonstrate increased tolerance toward immigrants relative to those with lesser educational attainment (Hooghe et al., 2013). Age and location might indicate correlations, positing that younger and urban consumers are more inclined to purchase foreign fashion due to their greater openness to different cultures (Zuliarni et al., 2023). This study fills this gap by analyzing invariance and multigroup PLS and proposing the following hypothesis:

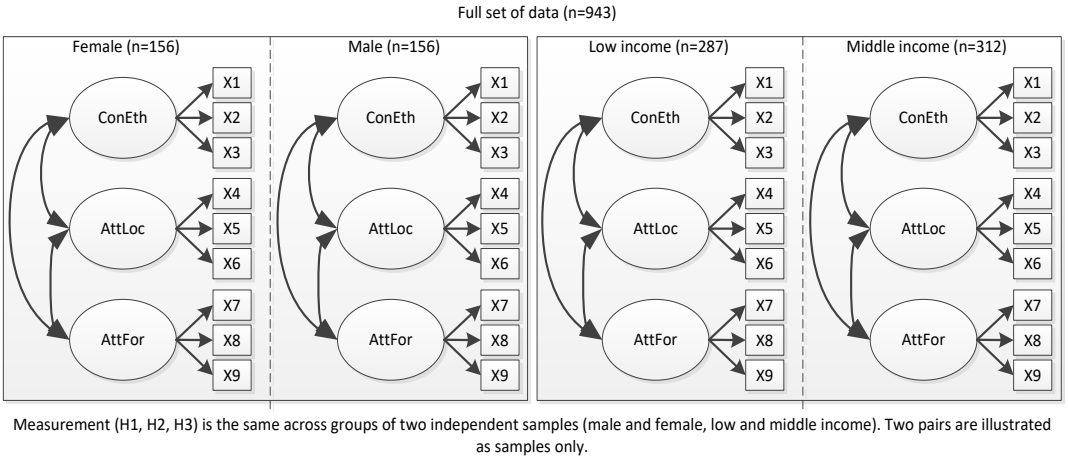
H4 Demographics moderate the relationship between consumer ethnocentrism and attitudes toward foreign products. The demographics under study include (a) Gender—female vs. male, (b) Income—low vs. middle, (c) Island—Java vs. Sumatra, (d) Education—high school vs. undergraduate, (e) Occupation—employee vs. student, and (f) Geography—urban vs. rural.

Conceptual Framework

The research framework for H1, H2, and H3 is developed around MICOM concept and its relationships with three constructs: ConEth, AttLoc and AttFor, as presented in Figure 1.

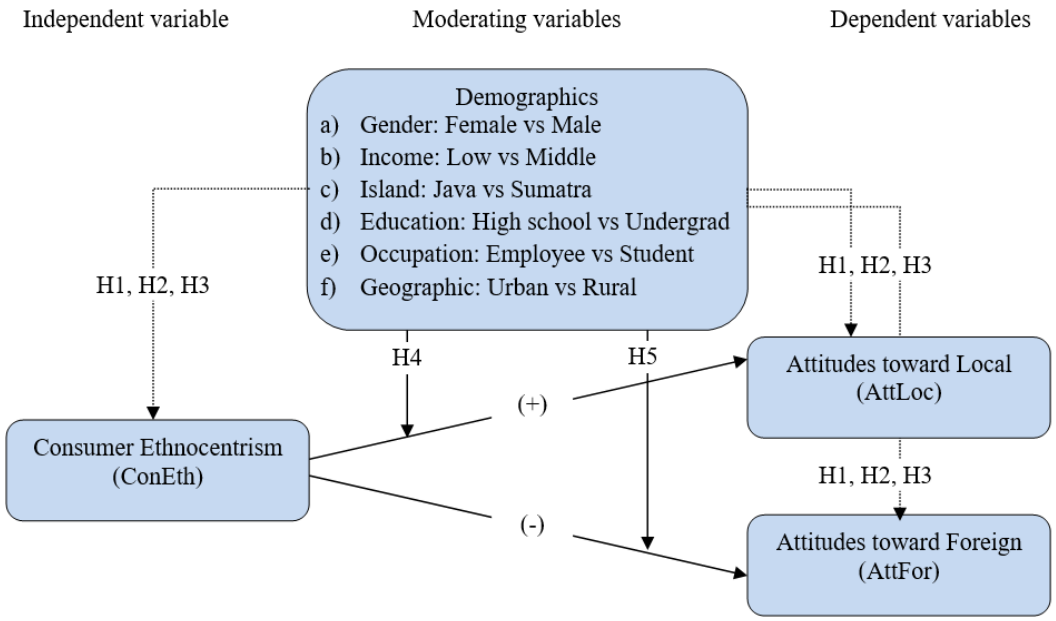
The conceptual framework for H4 and H5 is developed around two robust theoretical relationships: a positive relationship between ConEth and AttLoc and a negative linkage between ConEth and AttFor. Once this study establishes measurement invariance, the addition of moderating variables from demographic profiles to the structural model further enhances its comprehensiveness, as presented in Figure 2.

Figure 1: Measurement invariance model across consumer ethnocentrism, attitudes toward local and foreign products



Source: Authors' own research

Figure 2: Conceptual framework of interaction between demographics and consumer ethnocentrism and attitudes toward local and foreign products



Note: Hypotheses with solid lines are primarily tested using PLS MGA, while those with dash lines use MICOM analysis

Source: Authors' own research

Methodology

Data Gathering

Nonprobability online sampling was used to collect 943 individuals who were invited via social media from July to December 2023 across regions in Indonesia. The dataset

is segregated into six subsamples of the top two groups according to the number of responses while ensuring the minimum sample size is met for each group. These groups, such as Java and Sumatra, high school and undergraduates, and low—and middle-income people, reflect the current population (BPS, 2023). When the amount of data in each group is far different, data from the bigger group are truncated by randomization to achieve a similar sample size. The data are cleaned from straight-lined answers when the respondent writes the same answer for almost all poll questions to ensure data quality. When answers are straight-lined, they reduce variation and can under (or over) estimate moderator effects in MGA (Cheah et al., 2020, p. 5).

Measurement

The survey instrument is in Indonesian, the native language, and has been confirmed by professionals in English-Indonesian translation. The variables consist of three-item 7-point Likert scales. The measurements of constructs are derived from prior studies (Kartikasari, 2024). Three indicators for ConEth include the beliefs that buying foreign-produced products is not Indonesian, Indonesian customers who purchase things made in other countries harm their fellow Indonesians' employment, and a true Indonesian citizen should always support domestic products (Shimp and Sharma, 1987). Indicators for attitudes include "Regularly purchasing foreign fashion on CBEC brings me pleasure, fun, and evokes positive emotions" (Maksan et al., 2019).

Data Analysis

A quantitative data approach is applied via measurement invariance of composites (MICOM) and multigroup analyses. MICOM is implemented to test H1, H2, and H3. Micom examines configural, compositional, and scalar – partial and full–measurement variance for measuring consumer ethnocentrism and attitudes toward local and foreign products across different demographic groups of respondents (Henseler et al., 2016). The permutation test is applied instead of the parametric one because the former allows for a non-normal population (Chin and Dibbern, 2010) and non-linear distribution in this study's dataset.

Once invariance is determined, partial least square (PLS) variance-based structural equation path modeling multigroup analysis (MGA) is implemented to appraise moderation effects throughout manifold relationships using SmartPLS 4. The bootstrap test is applied instead of Welch-Satterthwaite because of the non-parametric nature of this study's dataset (Cheah et al., 2020). MICOM on PLS is applied instead of confirmatory factor analysis (Gómez-Suárez et al., 2020) because this method allows integrated results within one single statistical program, provides a reasonable threshold for parameters, and can readily be expanded into more than two groups (Cheah et al., 2023).

Results

The study follows step-by-step PLS-MGA (Cheah et al., 2023).

Stage 1: Data preparation

Minimum Subsample Size

PLS-MGA requires that the subpopulations have satisfactory statistical power to notice the effect of heterogeneity. Rules of thumb are introduced to determine sample size. The sample size is appropriate if it is from 30 to 500. A sample size that is too small leads to no significant findings (Type I errors). In contrast, too large a sample size is prone to all significant results (Type II errors) when they may not be in reality. Thus, sample size planning is critical to avoid errors (Sekaran and Bougie, 2016).

Another rule of thumb is that the minimum recommended sample size should be tenfold or greater than the number of variables (Sekaran and Bougie, 2016). This rule applies to this study that uses multivariate data analysis. Because the study implements three latent and nine observed variables, the minimum sample size set is 120 samples, with a minimum of 30 for each subsample. While all those rules and methods are popular and straightforward among PLS-SEM users, past studies recommend considering the recommended apriori effect size and 80% statistical power, resulting in 146 sample sizes (Kock and Hadaya, 2016). G*Power software calculates the required sample size by setting the power value at 0.8 (Cheah et al., 2020), the significance level of alpha is 0.05, and the number of groups is 2 for ANOVA one-way; the smallest possible number of samples required is 128. The minimum subgroup size in this study is 126 for rural respondents, which exceeds the required minimum sample size of 30 and 120 but is close enough to 128. Getting rural respondents is challenging because of low internet coverage in rural areas. Nevertheless, a minimum subsample size is attained.

Subsample Size Equality

Although the total sample size of this study is large (n=943), it does not always guarantee the best results because substantial differences in subsample numbers decrease the statistical strength and lead to an underestimation of the impact of moderating factors. The subsample size should be maintained equivalent for each group to solve this problem (Cheah et al., 2020, p. 5). Random cuts are made to the data of gender, education, income, occupation, and geographical areas (See Table 1) to make them identical in size and avoid underestimation. As such, the exact number of removed data follows the minimum sample size of a pair. For example, the subsample size by gender is not substantially comparable to that of 156 males vs 787 females. Hence, each female data is assigned a random number generated by the Excel system, and the first 156 random numbers were selected. The removed data were marked * in Table 1.

Stage 2: Measurement of Model Quality

Loadings, Cronbach's alpha, rho_A, composite reliability (CR), AVE, and HTMT are criteria to assess measurement models for reflective indicators. A robustness check via confirmatory tetrad analysis is unnecessary because all constructs have less than four indicators (Cheah et al., 2023, p. 5). Although not displayed in this paper because of limited space, outer loadings are within acceptable range. Table 1 and Table 2 present the values for Cronbach's alpha, rho_A, composite reliability (CR), AVE, and HTMT and establish the reliability and validity of our measurement model.

Table 1: Assessment of construct reliability and validity

Group	Dataset	Construct	Alpha	Rho_A	CR	Ave
Baseline	Complete	AttLoc	0.874	0.885	0.922	0.797
	(n = 943)	AttFor	0.934	0.969	0.957	0.882
		ConEth	0.864	0.908	0.915	0.781
Gender	Female	AttLoc	0.879	1.580	0.909	0.770
	(n = 156)*	AttFor	0.951	1.661	0.960	0.890
		ConEth	0.837	0.943	0.896	0.742
	Male	AttLoc	0.798	0.826	0.881	0.713
	(n = 156)	AttFor	0.910	0.930	0.943	0.847
		ConEth	0.869	0.871	0.920	0.793
Income	Low-income	AttLoc	0.882	0.921	0.925	0.805
	(n = 287)	AttFor	0.943	0.986	0.963	0.897
		ConEth	0.859	0.929	0.907	0.765
	Middle-income	AttLoc	0.859	0.863	0.914	0.780
	(n = 312)*	AttFor	0.922	0.990	0.949	0.862
		ConEth	0.852	0.871	0.909	0.769
Main Island	Java	AttLoc	0.878	0.892	0.924	0.803
	(n = 357)	AttFor	0.941	1.054	0.960	0.890
		ConEth	0.863	0.897	0.915	0.781
	Sumatra	AttLoc	0.873	0.926	0.920	0.793
	(n = 387)	AttFor	0.925	0.947	0.952	0.869
		ConEth	0.836	0.900	0.897	0.744
Education	High school	AttLoc	0.844	0.881	0.904	0.759
	(n = 302)	AttFor	0.937	0.952	0.959	0.887
		ConEth	0.870	0.874	0.920	0.793
	Undergrad	AttLoc	0.874	0.931	0.920	0.794
	(n = 308)*	AttFor	0.921	0.958	0.942	0.844
		ConEth	0.858	0.882	0.912	0.775
Occupation	Employee	AttLoc	0.843	0.885	0.903	0.756
	(n = 132)	AttFor	0.933	1.008	0.955	0.876
		ConEth	0.866	0.877	0.917	0.787
	Student	AttLoc	0.870	0.883	0.920	0.792
	(n = 135)*	AttFor	0.940	0.951	0.961	0.892
		ConEth	0.844	0.920	0.898	0.747
Geographic location	Urban	AttLoc	0.869	3.333	0.859	0.678
	(n = 127)*	AttFor	0.938	0.985	0.960	0.888
		ConEth	0.821	0.831	0.893	0.735
	Rural	AttLoc	0.852	1.508	0.896	0.743
	(n = 126)	AttFor	0.939	0.964	0.961	0.892
		ConEth	0.831	0.905	0.892	0.734

Note: Alpha = Cronbach's alpha, Rho_a = Djikstra rho_a, CR = Composite Reliability, Ave = Average Variance Extracted, AttLoc = Attitudes toward Local goods, AttFor = Attitudes toward Foreign goods, ConEth = Consumer Ethnocentrism, * = dataset is truncated randomly to achieve comparable size and avoid underestimation

Table 2: Assessment of discriminant validity using HTMT and Fornell-Larckner

Group	Dataset	Construct	AttLoc	AttFor	ConEth
Baseline	Complete	AttLoc	**0.893**	0.541	0.199
	(n = 943)	AttFor	0.487	**0.939**	0.070
		ConEth	0.184	-0.062	**0.884**
Gender	Female	AttLoc	**0.878**	0.447	0.152
	(n = 156)*	AttFor	0.354	**0.943**	0.102
		ConEth	0.178	-0.116	**0.861**
	Male	AttLoc	**0.844**	0.508	0.296
	(n = 156)	AttFor	0.422	**0.920**	0.233
		ConEth	0.251	-0.210	**0.890**
Income	Low-income	AttLoc	**0.897**	0.574	0.160

Group	Dataset	Construct	AttLoc	AttFor	ConEth
	(n = 287)	AttFor	0.518	**0.947**	0.032
		ConEth	0.167	0.020	**0.874**
	Middle-income	AttLoc	**0.883**	0.575	0.181
	(n = 312)*	AttFor	0.513	**0.928**	0.086
		ConEth	0.162	-0.076	**0.877**
Main Island	Java	AttLoc	**0.896**	0.554	0.246
	(n = 357)	AttFor	0.508	**0.943**	0.046
		ConEth	0.225	-0.040	**0.884**
	Sumatra	AttLoc	**0.890**	0.495	0.148
	(n = 387)	AttFor	0.437	**0.932**	0.090
		ConEth	0.146	-0.077	**0.863**
Education	High school	AttLoc	**0.891**	0.457	0.179
	(n = 302)	AttFor	0.405	**0.919**	0.031
		ConEth	0.173	0.034	**0.881**
	Undergrad	AttLoc	**0.871**	0.529	0.153
	(n = 308)*	AttFor	0.457	**0.942**	0.238
		ConEth	0.137	-0.217	**0.891**
Occupation	Employee	AttLoc	**0.870**	0.659	0.233
	(n = 132)	AttFor	0.571	**0.936**	0.048
		ConEth	0.215	-0.033	**0.887**
	Student	AttLoc	**0.890**	0.549	0.154
	(n = 135)*	AttFor	0.502	**0.944**	0.118
		ConEth	0.155	-0.114	**0.864**
Geographic location	Urban	AttLoc	**0.824**	0.621	0.135
	(n = 127)*	AttFor	0.479	**0.943**	0.214
		ConEth	0.118	-0.196	**0.858**
	Rural	AttLoc	**0.862**	0.465	0.116
	(n = 126)	AttFor	0.410	**0.944**	0.231
		ConEth	-0.080	-0.223	**0.857**

Note: AttLoc = Attitudes toward Local goods, AttFor = Attitudes toward Foreign goods, ConEth = Consumer Ethnocentrism, * = dataset is truncated randomly to achieve comparable size and avoid underestimation

Stage 3: Measurement Invariance Test

Measurement invariance is a way to guarantee that measurement models measure similar things in changed situations. If the path coefficients or beta values between latent variables differ, it could be because people in a group have different ideas about the phenomenon being studied, not because the underlying structural relationships are different. If invariance is not established, it is easy for statistical tests to have low power, inaccurate predictors, and false results. As a result, checking measurement invariance is essential before MGA because it gives researchers trust that differences between groups in model quality are not caused by the different understanding of the latent variable between parties (Cheah et al., 2020).

PLS-SEM requires three stages to judge the measurement invariance of composite models (MICOM) (Henseler et al., 2016). The first stage is to check for configural invariance. The second phase is to check for compositional invariance. The third step is to check that a combination's mean and variance values are the same among groups. If both compositional and configural invariance, as presented in Table 3, are proven, then partial measurement invariance is established, as shown by permutation's p-values above 0.05 (Cheah et al., 2020), and investigators may contrast the path estimates with the MGA. Table 3 shows that H1 is accepted across groups, meaning that compositional

variance for all constructs is established, the composite is established similarly across the groups, and the instrument is operating equivalently across these two groups of (a) female vs. male, (b) high school vs. undergraduate, (c) low vs. middle-income, (d) employee vs. student, (e) urban vs. rural, and (f) Java vs. Sumatra.

Table 3: Partial Measurement Invariance of Composites (MICOM)

Demographic groups	Dataset	Construct	Configural Invariance	Compositional Invariance		Partial Measurement Invariance
				Correlation	P p-value	
Gender	Female vs. Male	AttLoc	Yes	0.977	0.293	Established
		AttFor	Yes	0.976	0.087	Established
		ConEth	Yes	0.993	0.304	Established
Income	Low vs. Middle income	AttLoc	Yes	0.997	0.649	Established
		AttFor	Yes	0.999	0.886	Established
		ConEth	Yes	0.988	0.213	Established
Island	Java vs. Sumatra	AttLoc	Yes	0.992	0.102	Established
		AttFor	Yes	0.995	0.686	Established
		ConEth	Yes	0.999	0.864	Established
Education	High school vs. Undergrad	AttLoc	Yes	0.995	0.622	Established
		AttFor	Yes	0.986	0.181	Established
		ConEth	Yes	0.999	0.691	Established
Occupation	Employee vs. Student	AttLoc	Yes	0.998	0.900	Established
		AttFor	Yes	0.995	0.772	Established
		ConEth	Yes	0.993	0.484	Established
Geographic location	Urban vs. Rural	AttLoc	Yes	0.979	0.645	Established
		AttFor	Yes	0.998	0.518	Established
		ConEth	Yes	0.994	0.847	Established

Note: AttLoc = Attitudes toward Local goods, AttFor = Attitudes toward Foreign goods, ConEth = Consumer Ethnocentrism

On the other hand, full measurement invariance is reached when composites have similar means and variances throughout all groups, in addition to meeting the conditions for partial measurement invariance. Full measurement invariance requires both permutation p-values for equal mean and equal variance to be either above 0.05 or below 0.05. For example, p-values for ConEth by gender are 0.302 and 0.091. Because both values are above 0.05, the full measurement for ConEth is established. On the contrary, p-values for AttLoc by gender are 0.000 and 0.103. Because the values are different, one is above 0.05, and the other is below 0.05, the full measurement for AttLoc is not established (Cheah et al., 2020). If full measurement invariance is established, as stated in Table 4, the data could be pooled, improving statistical strength and making MGA useless. If the third step conditions (equal variance or mean) are met for partial measurement, the scholars may say that measurements are unaffected by each group and move on to MGA.

Table 4: Full Measurement Invariance of Composite (MICOM)

Demographic groups	Dataset	Construct	Equal Mean		Equal Variance		Full Measurement Invariance
			Diff	P p-value	Diff	P p-value	
Gender	Female – Male	AttLoc	0.627	0.000	-0.190	0.103	No
		AttFor	0.203	0.040	0.030	0.410	No
		ConEth	-0.051	0.302	-0.177	0.091	Established
Income	Low – Middle income	AttLoc	-0.132	0.057	0.090	0.214	Established
		AttFor	-0.144	0.043	0.099	0.199	No
		ConEth	0.001	0.497	0.055	0.276	Established

Demographic groups	Dataset	Construct	Equal Mean		Equal Variance		Full Measurement Invariance
			Diff	P p-value	Diff	P p-value	
Island	Java	AttLoc	-0.144	0.020	0.081	0.201	No
	–	AttFor	-0.087	0.118	0.045	0.333	Established
	Sumatra	ConEth	0.177	0.006	0.116	0.092	No
Education	High	AttLoc	0.000	0.520	0.066	0.287	Established
	school	AttFor	0.072	0.176	-0.003	0.489	Established
	–	ConEth					Established
	Undergrad		0.033	0.342	-0.036	0.377	
Occupation	Employee	AttLoc	0.029	0.118	-0.126	0.168	Established
	–	AttFor	0.037	0.125	0.067	0.169	Established
	Student	ConEth	0.000	0.116	0.180	0.148	Established
Geographic location	Urban	AttLoc	-0.004	0.487	0.176	0.342	Established
	–	AttFor	0.185	0.075	-0.030	0.421	Established
	Rural	ConEth	0.152	0.110	0.116	0.225	Established

Note: AttLoc = Attitudes toward Local goods, AttFor = Attitudes toward Foreign goods, ConEth = Consumer Ethnocentrism, P p-value = permutation p-value, diff = difference

Table 4 shows that H2 is partially accepted while H3 is all accepted. H2 is rejected for demographic groups of gender, income, and island-area. Thus, full measurement invariance is reached for education, occupation, and urban location demographic groups. As structural invariance is found, the model is expanded by adding interaction terms that consider how the structural model is different between the groups of gender, income, and island area using a moderation analysis. The observed heterogeneity of the groups of gender, income, and island area in the structural model is estimated to support the validity of this study's path coefficients.

Stage 4: Test of MGA Comparisons

Following the establishment of compositional invariance by accepting H1, partial when either H2 or H3 are accepted, or full when both H2 and H3 are accepted, MGA is conducted to look at group comparisons. Bootstrap PLS-MGA presents the following Table 5. Parametric and Welch-Satterthwaite tests show similar results as those of Bootstrap PLS-MGA within the thresholds of the same decisions, as found by past studies (Memon et al., 2020).

Table 5: Bootstrap PLS-MGA results

Invariance	Groups	Hypothesis	Path Coeff Diff	p-value	Decision
Partial	Gender (Female – Male)	H4a: ConEth -> AttLoc	-0.073	0.345	Rejected
		H5a: ConEth -> AttFor	0.095	0.273	Rejected
	Income (Low – Middle)	H4b: ConEth -> AttLoc	0.005	0.467	Rejected
		H5b: ConEth -> AttFor	0.096	0.193	Rejected
	Island-area (Java – Sumatra)	H4c: ConEth -> AttLoc	0.079	0.131	Rejected
		H5c: ConEth -> AttFor	0.037	0.344	Rejected
Full	Education (High school – Undergrad)	H4d: ConEth -> AttLoc	0.036	0.316	Rejected
		H5d: ConEth -> AttFor	0.251	0.005	Accepted
	Occupation (Employee – Students)	H4e: ConEth -> AttLoc	0.059	0.336	Rejected
		H5e: ConEth -> AttFor	0.080	0.311	Rejected
	Urban-location (Urban – Rural)	H4f: ConEth -> AttLoc	0.198	0.207	Rejected
		H5f: ConEth -> AttFor	0.027	0.421	Rejected

Note: AttLoc = Attitudes toward Local goods, AttFor = Attitudes toward Foreign goods, ConEth = Consumer Ethnocentrism

H4 and H5 rejected means that demographic groups do not moderate the relationship between consumer ethnocentrism and attitudes toward locals and foreign products. In summary, this study's dataset shows that measurement invariance is established across six groups of demographics (H1 accepted), either partial or full (H2 and H3). For partial invariance groups, demographic categories do not influence the relationship between consumer ethnocentrism and attitudes toward local products and foreign products (H4 and H5 rejected). For full invariance groups, education is the sole demography that empirically has the potential to alter the relationship between consumer ethnocentrism and attitudes toward foreign products. Nonetheless, full invariance has been established for this group. Thus, it is safe to pool the data across different education groups. This sum-up is demonstrated in Table 6.

Table 6: Hypotheses summary

Hypotheses	Remarks
H1: Compositional variance for measuring consumer ethnocentrism and attitudes toward local and foreign products across demographic groups is established.	H1 is accepted across groups, meaning that compositional variance for all constructs is established; as such, PLS-MGA is applicable across demographics.
H2: The composite mean values for measuring consumer ethnocentrism and attitudes toward local and foreign products are equal across demographic groups.	H2 is partially accepted. H2 is rejected for demographic groups of gender, income, and island-area
H3: The composite's variance values for measuring consumer ethnocentrism and attitudes toward local and foreign products are equal across demographic groups.	H3 is all accepted. Partial invariance is found across demographic groups of gender, income, and island area, while full variance is found for education, occupation, and urban location
H4: Demographics moderates the relationship between consumer ethnocentrism and attitudes toward local products.	H4 is all rejected
H5: Demographics moderates the relationship between consumer ethnocentrism and attitudes toward foreign products. Demographics under study include a) Gender: Female vs. Male, b) Income: Low vs. Middle, c) Island: Java vs. Sumatra, d) Education: High school vs. Undergrad, e) Occupation: Employee vs. Student, and f) Geographic: Urban vs. Rural.	H5 is rejected. Education is the only demographic that may moderate the relationship between consumer ethnocentrism and attitudes toward foreign products; however, as H2 and H3 are accepted and full invariance is established for this group, it is safe to pool the data across different education groups.

Source: Authors' own research

As structural invariance is found and partial measurement is established, the model is expanded by adding interaction terms that consider how the structural model is different between the groups of gender, income, and island area using a moderation analysis. For these partial measurement groups, multigroup analysis results verify their negligible moderating roles in the structural model, meaning that there are no significant differences across gender (female and male), income (low and middle), and island area (Java and Sumatra). Instead, full measurement invariance is reached for education, occupation, and urban-location demographic groups. Hence, the data for these groups

can be pooled. However, a significant difference exists between high school vs. undergraduate respondents viewing the linkage between consumer ethnocentrism and attitudes toward foreign products. Table 7 details this difference by showing the structural quality and path coefficients difference across groups.

Table 7 shows that for high school respondents, consumer ethnocentrism does not affect attitudes toward foreign products (beta = 0.034, p-value = 0.342). In contrast, for undergraduate respondents, consumer ethnocentrism significantly affects attitudes toward foreign products (beta = -0.217, p-value < 0.000). The beta difference is 0.034 – (-0.217) = 0.251, as stated in Table 5. This value is the most significant beta difference; hence, H5d is accepted. Figure 3 explains this finding. Nonetheless, researchers can still use pooled sample data and regard this as a homogeneous population because the dataset is fully invariant.

Table 7 also shows that the complete model delivers excellent results in concurring with theoretical relationships where consumer ethnocentrism positively affects attitudes toward local (beta = 0.152, p-value < 0.00, f-square = 0.035, R-square = 0.034). In contrast, consumer ethnocentrism negatively affects attitudes toward foreign products (beta = -0.100, p-value = 0.010, f-square = 0.004, R-square = 0.004). Dissecting all sample data into separate subsamples and analyzing their structural models might lead to misunderstanding theoretical relationships. An example of this misunderstanding is when researchers interpret insignificant conclusions for the relationships between consumer ethnocentrism and attitudes toward local (beta = 0.178, p-value = 0.103) and foreign products (beta = -0.116, p-value = 0.190) for subsamples of females. We encourage researchers to use complete baseline data instead of dissecting it into different subgroups because heterogeneity effects, analyzed using PLS-MGA, might lead to misleading theoretical relationships between consumer ethnocentrism and attitudes toward local and foreign products.

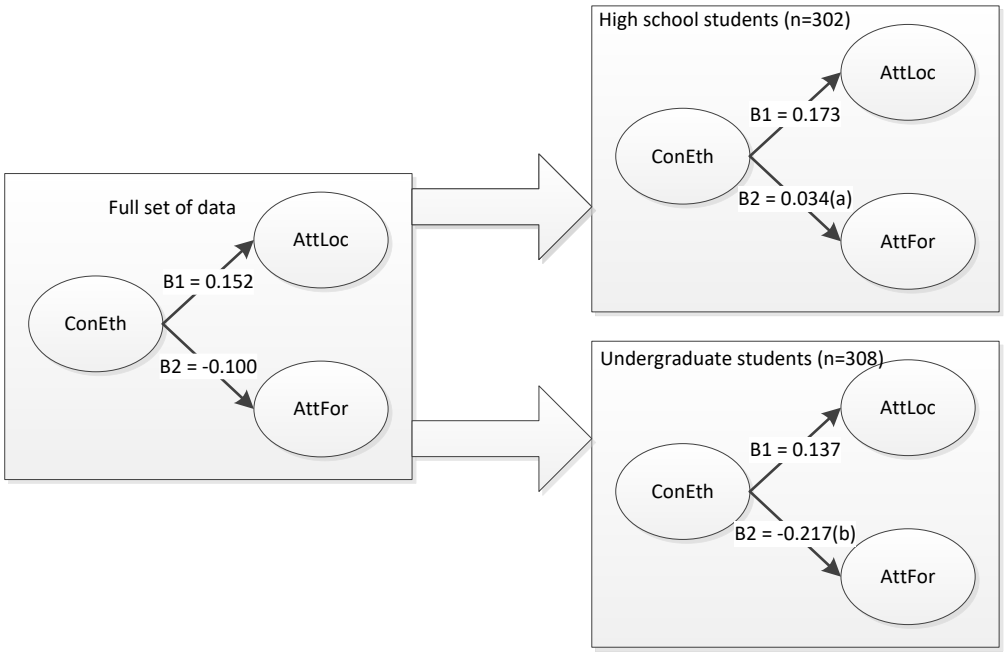
Table 7: Assessment of structural model

Dataset	Relationship	Beta	SE	t-value	p-value	VIF	f2	R2	Q2
Complete (baseline)	ConEth -> AttLoc	0.152	0.040	3.830	0.000	1.000	0.035	0.034	0.018
	ConEth -> AttFor	-0.100	0.043	2.326	0.010	1.000	0.004	0.004	0.005
Female	ConEth -> AttLoc	0.178	0.140	1.264	0.103	1.000	0.033	0.032	0.014
	ConEth -> AttFor	-0.116	0.132	0.878	0.190	1.000	0.014	0.013	-0.003
Male	ConEth -> AttLoc	0.251	0.088	2.846	0.002	1.000	0.067	0.063	0.035
	ConEth -> AttFor	-0.210	0.087	2.408	0.008	1.000	0.046	0.044	0.024
Low-income	ConEth -> AttLoc	0.167	0.057	2.921	0.002	1.000	0.029	0.028	0.017
	ConEth -> AttFor	0.020	0.082	0.245	0.403	1.000	0.000	0.000	-0.012
Middle-income	ConEth -> AttLoc	0.162	0.057	2.852	0.002	1.000	0.027	0.026	0.012
	ConEth -> AttFor	-0.076	0.075	1.007	0.157	1.000	0.006	0.006	-0.006
Java	ConEth -> AttLoc	0.225	0.052	4.361	0.000	1.000	0.053	0.051	0.041
	ConEth -> AttFor	-0.040	0.069	0.588	0.278	1.000	0.002	0.002	-0.006
Sumatra	ConEth -> AttLoc	0.146	0.051	2.896	0.002	1.000	0.022	0.021	0.013
	ConEth -> AttFor	-0.077	0.063	1.215	0.112	1.000	0.006	0.006	-0.001
High school	ConEth -> AttLoc	0.173	0.054	3.216	0.001	1.000	0.031	0.030	0.019
	ConEth -> AttFor	0.034	0.082	0.408	0.342	1.000	0.001	0.001	-0.013
Undergrad	ConEth -> AttLoc	0.137	0.060	2.282	0.011	1.000	0.019	0.019	0.007
	ConEth -> AttFor	-0.217	0.056	3.860	0.000	1.000	0.050	0.047	0.039
Employee	ConEth -> AttLoc	0.215	0.085	2.524	0.006	1.000	0.048	0.046	0.021
	ConEth -> AttFor	-0.033	0.120	0.280	0.390	1.000	0.001	0.001	-0.022
Student	ConEth -> AttLoc	0.155	0.113	1.379	0.084	1.000	0.025	0.024	-0.001
	ConEth -> AttFor	-0.114	0.112	1.016	0.155	1.000	0.013	0.013	-0.004
Urban	ConEth -> AttLoc	0.118	0.178	0.661	0.254	1.000	0.014	0.014	-0.036

Dataset	Relationship	Beta	SE	t-value	p-value	VIF	f2	R2	Q2
	ConEth -> AttFor	-0.196	0.105	1.869	0.031	1.000	0.040	0.038	0.017
Rural	ConEth -> AttLoc	-0.080	0.180	0.446	0.328	1.000	0.006	0.006	-0.037
	ConEth -> AttFor	-0.223	0.103	2.171	0.015	1.000	0.052	0.050	0.019

Note: AttLoc = Attitudes toward Local goods, AttFor = Attitudes toward Foreign goods, ConEth = Consumer Ethnocentrism

Figure 3: Heterogeneity effect of education on the relationships between consumer ethnocentrism and attitudes toward local and foreign products



Note: AttLoc = Attitudes toward Local goods, AttFor = Attitudes toward Foreign goods, ConEth = Consumer Ethnocentrism. (a) insignificant finding for high school samples. (b) significant finding for undergraduate student samples.

Discussion

The Role of Demographics in the Relationships

Multigroup analysis results for these partial measurement groups confirm their minimal moderating functions in the structural model, implying that there are no significant variations based on gender (male and female), income (low and middle), or island geography (Java and Sumatra). Further, full measurement invariance is achieved for education, occupation, and urban-location demographics. Consequently, the data for these groups can be pooled.

The reason for not using demographics such as education, occupation, and urban location as moderators in this study is that full measurement invariance of the composite through the implementation of MICOM is achieved. If this level of invariance cannot be achieved, future studies should assess whether the composite is partially invariant, which would require categorizing the data into groups for multigroup analyses, further, identifying any potential unobserved heterogeneity (Henseler et al., 2016). While analyzing all sample data can enhance the depth and detail of research manuscripts

(Orbaiz and Papadopoulos, 2003), improper methodologies may lead to distorted interpretations of the findings.

Limitations and Future Research

This paper limits itself to group differences where only two groups are compared within each subsample, not more than two groups (Sarstedt et al., 2011). The reason is twofold; first and foremost is subsample size adequacy. For example, subsamples from the island of Papua or high-income or, suburban or middle-school graduates are relatively small compared with the groups under investigation. The second reason is its complicated procedures for using beyond SmartPLS (Cheah et al., 2023). Future works can explore these niche groups and expand beyond two groups to test the generalizability of the current findings in these new groups.

Conclusions

Amidst internationalization, an increasingly diversified population, and limited literature in this area, this manuscript strives to investigate the impact of demographic groups on the links between consumer ethnocentrism and attitudes toward local and foreign products, focusing on understanding heterogeneity effects. The analysis of measurement invariance of composites establishes the construct measurement consistency of evaluating consumer ethnocentrism, attitudes toward local products, and attitudes toward international products across different demographic subsamples: gender (male and female), income (low and middle), island (Java and Sumatra), education (high school and undergraduate), occupation (employee and student), and geographic location (urban and rural). The discovery of full invariance across education, employment, and geographic location provides strong justification for conducting a pooled analysis of all the data samples. Partial invariance has been shown across gender, income, and island. However, multigroup analysis indicates the absence of moderating effects from these subpopulations. Therefore, it is advisable to maintain homogeneity by not segregating the baseline sample to prevent confusion in interpreting the positive theoretical connections between consumer ethnocentrism and attitudes toward local products, along with the negative linkage between consumers and attitudes toward international products. This empirical study has theoretical implications for scholars to report their measurement invariance before discussing multigroup comparisons and interpreting them wisely. This study recommends analyzing pooled data to thoroughly understand the impact of consumer ethnocentrism. Practical implications for international marketing professionals are to focus on mass marketing strategies. This study is limited to single-country and two-group comparisons; future research could explore cross-country and more than two-group comparisons.

Practical Implications for Asian Business

Implications for Marketers in Mass Markets

Research into global marketing and business frequently examines contrasting, diverse subsamples (Henseler et al., 2016). This manuscript argues that group comparisons are unnecessary in examining theoretical relationships between consumer ethnocentrism

and attitudes toward local and foreign products. This study's original findings support complete data rather than segregate it into demographics. This finding in international marketing is similar to that in the tourism sector, where gender does not differentiate business performance even after measurement invariance is established (Garcia-machado et al., 2020). Future scholars may consider demographics not only as control variables but also as moderators. Nonetheless, this study claims that the latter might not be necessary.

Practitioners in international marketing and managers working on the internationalization of their products and services can build on this study's findings to devise their mass-marketing strategies based on the majority of consumers. This study uses the demographic profiles of most consumers in a single country and finds that the consumers behave similarly. The top two consumer groups by number are not different in how they perceive local and foreign products.

Implications for Marketing Researchers in Asia

Marketing researchers might examine and discuss the difference in path estimates and structural model quality for two sampled populations. However, the difference is not meaningful because this so-called difference does not stem from actual differences in the relationship but from respondent differences in interpreting measures (Chin and Dibbern, 2010). As such, this study implies that robust step-by-step measurement invariance is a prerequisite for multigroup comparison of PLS models. For example, Table 7 may lead to a naïve interpretation that path estimates widely differ between male and female respondents. However, academicians can avoid this error by reporting measurement invariance, such as in Table 5, showing that the bootstrap test validates that this difference is not meaningful. Unfortunately, researchers habitually overlook non-invariant constructs, which might reduce the validity of studied comparisons (Van Herk and Goldman, 2022).

Implications for Manufacturers of Local Products

Local manufacturers in an ethnocentric Asian country should not assume that local consumers will always have positive opinions about home-country products based on the findings of this study. We urge local firms to expand their product marketing internationally and create mass-marketing plans using the results of this study. Our study's findings may only apply to some nations with remarkably similar cultures due to limits in generalizability.

This study has been conducted within the scope of a single country, Indonesia, which is the most populous country in Southeast Asia. The empirical evidence from this country is vital to understanding consumers in Asia, and it provides a pathway for comparative analysis across nations and cultures that has piqued people's curiosity in aspects of economics for many years (Van Herk and Goldman, 2022). Future marketing researchers can explore cross-country comparisons, for example, within ASEAN: Indonesia vs. Malaysia vs. Thailand or within Asia: Indonesia vs. China vs. India so that marketing practitioners could build on future findings to segment international markets, target consumers across multiple countries, and develop effective positioning strategies (Gómez-Suárez et al., 2020).

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