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STRUCTURAL MODELLING OF FACTORS ASSOCIATED WITH SUSTAINABLE CONSUMER BEHAVIOR IN THE REPUBLIC OF ARMENIA

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Abstract: The research is examined, how attitudes, availability of sustainable products, social norms and trust relate to self-reported sustainable consumer behavior in Armenia, using PLS-SEM on survey data from 397 respondents. In the full model the trust construct has the largest estimated positive association with behavior ($\beta = 0.357$), followed by availability (0.186) and attitude (0.160); social norms are not significant (0.044). R^2 is 0.331. Measurement is weak, however: the trust items mix trust with awareness and affordability, three constructs have low reliability, discriminant validity is not established, and SRMR is 0.100. When trust is reduced to its one direct item, its association is no longer significant and availability is the largest. The findings are exploratory.

Keywords: sustainable consumption, consumer behavior, trust, product availability, social norms, PLS-SEM, Armenia

JEL codes: M31, D12, Q01

Research aims: to examine how attitudes, product availability, social norms and trust are associated with self-reported sustainable

consumer behavior in Armenia, and to assess how well these constructs are measured.

Research novelty: Empirical evidence on sustainable consumer behavior in Armenia remains limited. The study tests four proposed determinants in one PLS-SEM model and reports openly where the measurement falls short.

Introduction

Sustainable consumption has become a major global policy issue, but the factors underlying it in transition economies, including Armenia, are still poorly understood. Purchasing sustainable products is rarely a purely personal decision. It can depend on perceived social expectations, the ability to find appropriate products, and trust in environmental claims. The four constructs of our questionnaire draw on the literature. The theory of planned behavior treats attitude as an important correlate of interactive intention (Ajzen, 1991; Schultz, 2001) distinguishes egoistic, social-altruistic and biospheric dimensions of environmental concern. That theory and value–belief–norm theory give weight to social expectations and personal norms (Stern, 2000). Practical barriers such as limited availability and cost can stop favorable attitudes from turning into action, which feeds the attitude–behavior gap (Kollmuss & Agyeman, 2002). Consumers can rarely verify environmental claims themselves, so trust in labels and producers may matter; here this is an empirical question, not an assumption. Demographic effects are inconsistent across studies (Blocker & Eckberg, 1997; Diamantopoulos et al., 2003; Zelezny et al., 2000), so the analysis concentrates on these four constructs.

Empirical research on Armenia remains scarce. We examine how the four constructs are associated with self-reported sustainable consumer behavior. Because the data are cross-sectional, we report associations, not causal effects.

Methododlogy

The data come from an online questionnaire (Google Forms). Participants were told that the survey served research purposes and that their answers would remain anonymous. The form received 403 submissions between 27 April and 27 October 2026, 400 of them by 31 May. Six submissions contained no answers and were excluded, leaving 397 cases for analysis. The questionnaire was distributed online through social media and personal networks. Some early respondents also passed the link on to others. Participation was voluntary. The study therefore relies on a non-probability sample that combines convenience and snowball sampling. The sample is unbalanced: 77.8% of respondents are women and 57.9% are aged 18–24, so the findings should not be treated as representative of the Armenian population.

Five constructs were measured on five-point scales: attitude (three items), availability (two), social norms (three), trust (three) and behavior (five). The performance items ask how often respondents do things such as carrying a reusable bag or choosing products with less packaging. One of them, BEH3, measures willingness to pay more, which reflects intention rather than completed behavior, so results without it are reported too. Eighteen respondents left at least one of the 16 items blank (57 of 6,352 answers, 0.9%); blanks were replaced with the item mean. Twenty-

two respondents gave the same answer to every item. They were kept in the main analysis and excluded in a sensitivity check.

Measurements were assessed using accepted criteria (Hair et al., 2019). Loadings were considered acceptable when they were approximately 0.708 or greater. Alpha, ρA, and composite reliability should be at least 0.70. AVE should be at least 0.50 (Fornell & Larcker, 1981). HTMT should be less than 0.90 (Henseler et al., 2015). SRMR should be less than 0.08 (Hu & Bentler, 1999).

Research results

Thirteen of the 16 loadings reach 0.708. The weakest are SOC3 (0.433), TRST2 (0.414) and BEH4 (0.622). Composite reliability is above 0.70 everywhere (0.723–0.891; Table 1), but it is the most generous of the three reliability indices. Cronbach's alpha is low for availability (0.612), trust (0.500) and social norms (0.480), and ρA, usually the more accurate estimate, is also below 0.70 for the same three (0.662, 0.592 and 0.550). AVE is just under 0.50 for social norms (0.487) and trust (0.484).

Attitude and behavior are measured acceptably; the other three constructs are not, and everything said below about trust, availability and social norms has to be read with that in mind.

Table 1. Reliability and convergent validity (n = 397)

Source: *Author's own work*

Construct	Items	α	ρA	CR	AVE
Attitude	3	0.820	0.854	0.891	0.732
Availability	2	0.612	0.662	0.833	0.715
Social norms	3	0.480	0.550	0.728	0.487
Trust	3	0.500	0.592	0.723	0.484
Behavior	5	0.781	0.792	0.850	0.533

CR = composite reliability; AVE = average variance extracted.

Discriminant validity is not established among availability, trust and social norms (Table 2). HTMT is 1.085 for trust and social norms, 1.011 for availability and trust, and 0.930 for availability and social norms, and all three confidence intervals include 1. Their latent correlations are only 0.50–0.56, so the high ratios come mainly from weakly related items inside each construct rather than from complete overlap. Even so, the model cannot cleanly separate the three, and their associations with behavior should not be ranked against each other with confidence. Attitude and behavior are well separated from the rest (HTMT up to 0.71).

Structural model

Inner VIFs are between 1.22 and 1.70, so collinearity among the constructs is not a problem. The model explains 33.1% of the variance in behavior (R^2 = 0.331, 95% CI 0.264–0.427), which is modest. As Table 3 shows, the construct labelled trust has the largest estimated association with behavior (β = 0.357, f^2 = 0.119),

followed by availability (0.186) and attitude (0.160); the latter two have small effects (f^2 about 0.03).

Table 2. Heterotrait–monotrait ratio (HTMT) (n = 397)
Source: *Author's own work*

Pair	HTMT	95% CI
Attitude – Availability	0.399	[0.280, 0.521]
Attitude – Social norms	0.555	[0.461, 0.717]
Attitude – Trust	0.344	[0.226, 0.483]
Attitude – Behavior	0.367	[0.264, 0.481]
Availability – Social norms	0.930	[0.790, 1.105]
Availability – Trust	1.011	[0.868, 1.187]
Availability – Behavior	0.640	[0.520, 0.756]
Social norms – Trust	1.085	[0.915, 1.303]
Social norms – Behavior	0.601	[0.476, 0.751]
Trust – Behavior	0.706	[0.581, 0.855]

HTMT values above 0.90: availability–social norms, availability–trust, social norms–trust.

Social norms show no significant association ($\beta = 0.044$, $p = 0.425$). SRMR is 0.100: above the stricter 0.08 guideline and at the lenient 0.10 limit, so model fit is borderline.

Table 3. Structural model results (n = 397; 5,000 bootstrap samples)

Source: *Author's own work*

Path	β	SE	t	p	95% CI	f^2
Attitude → Behavior	0.160	0.046	3.51	<0.001	[0.071, 0.249]	0.031
Availability → Behavior	0.186	0.062	3.00	0.003	[0.061, 0.303]	0.030
Social norms → Behavior	0.044	0.055	0.80	0.425	[−0.055, 0.158]	0.002
Trust → Behavior	0.357	0.059	6.08	<0.001	[0.245, 0.472]	0.119

R^2 = 0.331 for behavior

Sensitivity checks

At first, dropping respondents or items changes little. Listwise deletion (n = 379) gives trust 0.371, availability 0.207, attitude 0.156 and social norms 0.020. Without the 22 straight-liners (n = 375) the values are 0.327, 0.173, 0.170 and 0.040 (R^2 = 0.280), and reliability falls (alpha 0.415 for social norms, 0.424 for trust), so identical answers had been inflating internal consistency. Without the willingness-to-pay item BEH3, the behavior construct is purely about actions: R^2 = 0.313, trust 0.362, availability 0.178, attitude 0.107 (p = 0.027) and social norms 0.059 (p = 0.293). Attitude loses some strength, so part of its link to behavior runs through that item.

The trust result is more fragile. Only TRST1 asks directly about trust, in local eco-labels. TRST2 concerns the difficulty of finding affordable sustainable products and TRST3 awareness of brands that comply with environmental rules. Reverse-coding the

negatively worded TRST2 does not help: its loading becomes −0.414 and the alpha of trust turns negative (−0.103), and moving it to availability drops that construct's alpha to 0.057, so the item fits neither. In a model that also leaves out BEH3, dropping TRST2 leaves the trust association at 0.372, so it is carried mainly by TRST3. If the construct is reduced to TRST1 alone, trust falls to $\beta = 0.090$ ($p = 0.100$), availability rises to 0.300 ($p < 0.001$), social norms become significant at 0.143 ($p = 0.018$) and R^2 drops to 0.238. One item is a noisy measure, so this probably understates any effect of trust, but it shows that the full-model result cannot be read as evidence about trust as such.

Discussion

What can we say about trust? In the full model the construct labelled trust has the largest estimated association with behavior, and it is the most visible result of the study. That does not make trust the most important factor for Armenian consumers. Only one of its three items measures trust in the usual sense, confidence in eco-labels; the others capture affordability and awareness. Once the construct is cut down to the trust item alone, the association is no longer significant. A fair reading is that behavior in these data goes together with some mix of awareness of compliant brands and perceived trustworthiness of labels, and the data cannot pull the two apart.

Availability is positively associated with behavior in every version of the model and is the largest association when trust is narrowed to one item. This fits the idea that practical conditions, not only beliefs, shape what people buy (Kollmuss & Agyeman, 2002).

Attitude is positively but modestly associated, as the attitude–behavior gap literature would lead us to expect, and the association weakens when the willingness-to-pay item is removed. With cross-sectional data we cannot say more than that.

Social norms are not significant in the full model but become significant when trust is narrowed, so this null result is not stable either. Two of the three items ask about exposure to sustainability messages on social media and the influence of public figures, not about the expectations of family and friends; reliability is weak; and the construct overlaps statistically with trust and availability. The data neither support nor rule out a role for social norms.

For practice, the safest conclusions are modest. Making sustainable products easier to find is supported in every version of the model, and communication that helps consumers identify brands meeting environmental requirements looks worth testing. Strategies resting on social norms or influencers get no support here, but no clear evidence against them either.

The study has clear limits. The design is cross-sectional and behavior is self-reported. The sample is mostly young and female, and the recruitment procedure limits generalisation. Three constructs are weakly measured, discriminant validity among them is not established, and model fit is borderline. AVB1 concerns the ability to distinguish eco-products rather than their availability, and BEH3 mixes willingness with action. Future work needs validated, clearly worded scales and a more balanced, fully documented sample, and could test whether trust moderates the link between attitudes and behavior.

Conclusion

In a PLS-SEM model of 397 respondents, the constructs labelled trust, availability and attitude are positively and significantly associated with self-reported sustainable consumer behavior (β = 0.357, 0.186 and 0.160); social norms are not (β = 0.044). The model explains 33.1% of the variance. Trust has the largest estimate, but this depends on items capturing awareness and affordability, and it is no longer significant when trust is measured by its one direct item. Availability is positive in every version.

The findings are exploratory. They point to a consistent association between availability and reported behavior and suggest that awareness of brands meeting environmental requirements may matter, but they do not show that trust itself is the main determinant, and they establish neither causal effects nor results for the Armenian population as a whole.

Further research should use more reliable, clearly defined measures of trust, social norms and availability and a more balanced, transparently recruited sample before firm recommendations for green marketing are made.

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ԿԱՅՈՒՆ ՍՊԱՌՈՂԱԿԱՆ ՎԱՐՔԱԳԾԻ ԳՈՐԾՈՆՆԵՐԻ ԿԱՌՈՒՑՎԱԾՔԱՅԻՆ ՄՈԴԵԼԱՎՈՐՈՒՄԸ ՀՀ-ՈՒՄ

Վարդուհի Ծառուկյան
Հայաստանի պետական տնտեսագիտական համալսարան
հայցորդ

Բանալի բառեր - կայուն սպառում, սպառողական վարքագիծ, վստահություն, ապրանքի մատչելիություն, սոցիալական նորմեր, PLS-SEM, Հայաստան

Հետազոտությունը 397 հարցվողի տվյալների և PLS-SEM մեթոդի կիրառմամբ ուսումնասիրում է վերաբերմունքի, ապրանքների հասանելիության, սոցիալական նորմերի և վստահության փոխառնչությունը՝ Հայաստանում կայուն սպառողական վարքագծի հետ: Ամբողջական մոդելում «վստահություն» սահմանված կառուցվածքն ունի վարքագծի հետ ամենամեծ գնահատված դրական կապը (β = 0.357), որին հաջորդում են հասանելիությունը (β = 0.186) և վերաբերմունքը (β = 0.160): Մինչդեռ հետազոտության արդյունքներով, սոցիալական նորմերի կապը վիճակագրորեն նշանակալի չէ (β = 0.044):

Առաջարկվող մոդելը բացահայտում է վարքագծի դիսպերսիայի 33.1% մակարդակը: Սակայն ձևավորված արդյունքները պետք է մեկնաբանել զգուշությամբ, քանի որ վստահության ցուցանիշները ներառում են նաև իրազեկվածության և մատչելիության բաղադրիչներ:

Երեք կառուցվածքների հուսալիությունը ցածր է, իսկ դրանց միջև տարբերակիչ վավերականությունը հաստատված չէ: Երբ

վստահությունը չափվում է միայն այն ուղղակիորեն արտացոլող մեկ ցուցանիշով, դրա կապը վարքագծի հետ վիճակագրորեն նշանակալի չէ, իսկ հասանելիությունն ունենում է ամենամեծ գնահատված կապը:

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