

Consumer Priorities and ASEAN NCAP Awareness in Vehicle Purchasing

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ABSTRACT – *This study examines consumer behavior in vehicle purchasing decisions and their awareness of the ASEAN New Car Assessment Program (ASEAN NCAP) among Malaysian car buyers. A total of 279 respondents participated in an online survey that explored purchasing priorities, willingness to pay for safety features, and knowledge of safety ratings. Descriptive and inferential analyses were conducted using SPSS Version 26 to identify patterns and relationships between demographics, purchasing behavior, and safety awareness. The results show that safety features, price, and safety ratings, such as ASEAN NCAP and Euro NCAP, were the most influential factors when choosing a vehicle, while design and color were the least important. Fuel efficiency and fuel type were also highly rated, reflecting both cost considerations and shifting consumer preferences. More than half of the respondents (51.6%) stated that they were willing to pay more for cars with higher safety features, while 36.6% were uncertain and only 11.8% were unwilling, indicating a growing appreciation of safety even among cost-conscious buyers. Awareness of ASEAN NCAP was relatively high, with 66.3% of respondents recognizing the program. Most respondents understood that ASEAN NCAP provides star ratings for vehicle safety, and 76% reported that these ratings influenced their purchase decisions. However, awareness of the ratings was significantly higher among urban and higher-income groups compared to rural and lower-income respondents, indicating uneven access to safety information. Overall, the study reveals that safety and affordability remain key factors in purchasing decisions. However, ASEAN NCAP could strengthen its impact through broader outreach and consumer education.*

KEYWORDS: Consumer behavior, vehicle purchasing decision, safety feature, ASEAN NCAP, safety rating, automotive industry

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1. INTRODUCTION

The automotive sector is a major driver of Malaysia's economy and ranks among the largest in Southeast Asia. In 2023, vehicle production reached 774,600 units, while new registrations totaled 799,731, indicating steady domestic demand and a resilient manufacturing base (MarkLines, 2024; MAA, 2024). Motor vehicle manufacturing also makes a substantial contribution to the economy, with an estimated output value of approximately 104 billion MYR in 2022 (Statista, 2025). These figures position Malaysia as one of the largest automotive producers in ASEAN, underscoring its importance in the regional vehicle safety landscape.

At the same time, the rapid pace of motorization has raised concerns about traffic safety. According to the World Health Organization (2023), road traffic crashes claim about 1.19 million lives annually worldwide, with Southeast Asia recording some of the highest rates of fatalities. This highlights the urgent need for safer vehicles and informed consumer choices. In response, the ASEAN New Car Assessment Program (ASEAN NCAP) was introduced in 2011 as a joint initiative by the Malaysian Institute of Road Safety Research (MIROS) and Global NCAP. The program provides consumers with crash test results and star ratings that reflect a vehicle's safety performance, encouraging both consumer awareness and improvements in vehicle design (Isa et al., 2014; Jawi et al., 2016; Roslin et al., 2020).

Vehicle purchasing behavior, however, is influenced by a variety of factors. Previous studies indicate that safety is often weighed against affordability, environmental performance, comfort, and usability. Fujita et al. (2022) found that U.S. consumers consider safety alongside environmental and economic aspects when buying vehicles. Cox and Cicchino (2022) observed that older drivers placed a high value on safety but also emphasized comfort and ease of use. In contrast, Shetty (2021) found that, following the COVID-19 pandemic, Indian consumers prioritized affordability, fuel efficiency, and safety. In Malaysia, Roslin et al. (2020) found that while safety features are important, affordability often dominates the final decision. These findings suggest that awareness alone is insufficient; consumers must also clearly understand and trust the safety ratings.

These gaps highlight the need to investigate Malaysian consumers' actual priorities in purchasing vehicles, as well as their level of awareness and understanding of ASEAN NCAP. This study addresses this gap by examining consumer purchasing behavior in Malaysia, identifying key decision-making factors, and assessing how ASEAN NCAP safety ratings influence their choices.

Based on this context, two main problems are evident:

- Vehicles sold in Malaysia vary in terms of active and passive safety, but many customers may not prioritize safety when selecting a car.
- Despite the introduction of ASEAN NCAP, its role in guiding consumer choice is still limited due to a lack of awareness and understanding among vehicle buyers.

Therefore, this study aims:

- To identify customer priorities when making decisions to purchase a vehicle in terms of safety.
- To determine the level of customer awareness regarding the ASEAN NCAP safety ratings.

2. METHODOLOGY

2.1 Development of Questionnaire

The questionnaire used in this study was adapted from a previous Malaysian study on vehicle purchasing behavior and safety awareness. It was structured into four main sections. The first section focused on vehicle ownership and purchasing priorities, where respondents were asked about their car ownership status and the factors influencing their vehicle choice. They rated the importance of various factors, such as price, comfort, safety, and brand, using a 7-point Likert scale, ranging from 1 (Extremely not important) to 7 (Extremely important).

The second section examined willingness to pay for safety features, asking respondents whether they were prepared to pay more for vehicles equipped with enhanced safety technologies. This was followed by the third section, which assessed respondents' awareness of safety ratings, including their knowledge and understanding of vehicle safety rating systems such as ASEAN NCAP. Questions in this section covered awareness of the star rating system, perceptions about the availability of safety data to the public, sources of information about ASEAN NCAP, and whether such ratings influenced their purchasing decisions. Respondents were also asked to indicate the minimum star rating they would consider acceptable when purchasing a vehicle and how often they seek information about safety ratings before making a purchase.

Finally, the questionnaire included a section on demographic information, which gathered details about the respondents' backgrounds, including their gender, age, monthly income, and residential area.

2.2 Sampling and Data Collection

This study employed a quantitative research design using an online survey. The questionnaire was distributed through social media platforms, email, and messaging applications to reach a diverse pool of respondents across Malaysia. A random sampling approach was applied to ensure that participants represented a broad demographic spectrum of car users and potential buyers.

The target population consisted of Malaysian residents aged 18 years and above, as this group is legally eligible to own or purchase vehicles. Participation in the survey was voluntary, and respondents were assured of confidentiality and anonymity. Incomplete questionnaires were excluded from the analysis. A total of 279 valid responses were collected, which was considered adequate for this study and provided sufficient data to explore consumer behavior and awareness of vehicle safety ratings in Malaysia.

2.3 Data Analysis

All responses were analyzed using the Statistical Package for Social Sciences (SPSS) Version 26. Descriptive statistics were employed to summarize the profiles of respondents and their purchasing behaviors. Additionally, inferential analyses were conducted to explore the relationships between consumer priorities, safety awareness, and purchasing decisions.

3. RESULTS AND DISCUSSION

3.1 Demographic Profile of Respondents

A total of 279 valid responses were collected. Table 1 presents the distribution of respondents based on their demographic characteristics. Car ownership was high, with 84.2% of respondents reporting that they currently own a vehicle, compared to 15.8% who did not. This suggests that most participants were already active car owners; however, the inclusion of non-owners still provided valuable perspectives from potential buyers. In terms of gender, 58.8% were male, and 41.2% were female, reflecting the tendency for men to dominate vehicle purchase decisions in Malaysia, while also acknowledging the growing role of women in influencing such decisions.

TABLE 1: Demographic characteristics of respondents (N = 279)

Variable	Category	Frequency (n)	Percentage (%)
Car Ownership	Yes	235	84.2
	No	44	15.8
Gender	Male	164	58.8
	Female	115	41.2
Age	Range	18 – 79	–
	Mean	34.6	–
Education	Primary school	3	1.1
	Secondary school	28	10
	Certificate	22	7.9
	Diploma	76	27.2
	Bachelor's degree	120	43
	Master's degree	29	10.4
	Doctor of Philosophy	1	0.4
Monthly Income	Below RM2,500	84	30.1
	RM2,500 – RM4,999	101	36.2
	RM5,000 – RM7,999	51	18.3
	RM8,000 – RM11,999	32	11.5
	RM12,000 – RM19,999	9	3.2
	RM20,000 and above	2	0.7
Residential Area	Urban	211	75.6
	Rural	68	24.4

The respondents' ages ranged from 18 to 79 years, with an average age of 34.6 years, indicating that the sample was concentrated in the young and middle adulthood age groups, which are most likely to purchase vehicles. Educational attainment was relatively high: 43% held a bachelor's degree, 27.2% had a diploma, and 10.4% had a master's degree. Smaller groups had completed secondary school (10%), certificate programs (7.9%), or primary school (1.1%), while only 0.4% had a PhD. This indicates a well-educated sample, which may affect awareness and interpretation of safety ratings.

The monthly income was concentrated in the lower and middle-income brackets, with 30.1% earning below RM2,500 and 36.2% earning between RM2,500 and RM4,999. Another 18.3% earned between RM5,000 and RM7,999, while only 3.2% and 0.7% reported higher incomes of RM12,000–RM19,999 and RM20,000+, respectively. This distribution highlights affordability as a central issue. Most respondents (75.6%) lived in urban areas, compared to 24.4% in rural areas, reflecting Malaysia's demographic structure and suggesting greater exposure to information campaigns among urban residents.

Overall, the demographic findings suggest that the sample is both diverse and relevant for examining consumer behavior and safety awareness. The combination of high car ownership, relatively balanced gender representation, a young-to-middle-aged age profile, generally well-educated respondents, and urban dominance provides a strong basis for analyzing how these factors may influence attitudes toward vehicle safety and ASEAN NCAP ratings.

3.2 Vehicle Purchase Factors

The survey gathered 279 responses on the factors that influence Malaysians when buying a vehicle. On a seven-point scale (1 = extremely not important; 7 = extremely important), the most important factor was safety features ($M = 6.35$), followed by price ($M = 6.18$) and safety ratings such as ASEAN NCAP or Euro NCAP ($M = 6.10$). Fuel efficiency ($M = 6.09$) and fuel type (petrol or electric) ($M = 5.93$) were also rated highly, indicating that consumers are concerned not only with the purchase cost but also with long-term running costs and future fuel options. Discounts and promotions ($M = 5.84$) and vehicle size ($M = 5.72$) were moderately important, while design ($M = 5.63$) and color ($M = 5.14$) were the least important. These findings suggest that Malaysian consumers prioritize practicality, placing a higher value on safety, price, and efficiency, while treating aesthetic features such as design and color as secondary considerations.

Figure 1 represents the mean importance of consumer priorities in vehicle purchasing decisions. Looking more closely at demographic differences, price was a significant factor for all groups but was particularly emphasized by respondents from lower- and middle-income backgrounds. For example, almost 66% of those earning below RM2,500 and 54% of those earning RM2,500–RM4,999 rated price as extremely important, compared to about 50% of higher-income respondents (above RM8,000). Safety features were rated as important across all groups. However, younger respondents (aged 18–30) and those with higher education placed even greater emphasis, with more than 70% of bachelor's degree holders rating them as extremely important.

Fuel efficiency was rated as highly important by all respondents, although some demographic differences were observed. Male respondents gave slightly higher priority, with 43% rating fuel efficiency as extremely important compared to 41% of females. Income also played a role. Among lower-income groups, 38% of those earning below RM2,500 and 42% of those earning RM2,500–RM4,999 considered fuel efficiency extremely important. In contrast, this figure rose to 59% among respondents earning above RM8,000, showing that higher-income consumers may see fuel efficiency as an investment in long-term cost savings and sustainability, while lower-income consumers remain more focused on affordability at the time of purchase.

Promotions and rebates were another factor that showed clear demographic patterns. Males were more likely to rate them as extremely important (43%) compared to females (31%). Income groups also showed variation, with 40% of respondents earning below RM2,500 and 38% of those in the RM2,500–RM4,999 group rating promotions as extremely important. By comparison, only 28% of those earning above RM8,000 rated them as such. This suggests that promotions and rebates hold stronger appeal among lower- and middle-income groups, who are more sensitive to upfront purchase costs, while discounts have less influence on higher-income groups.

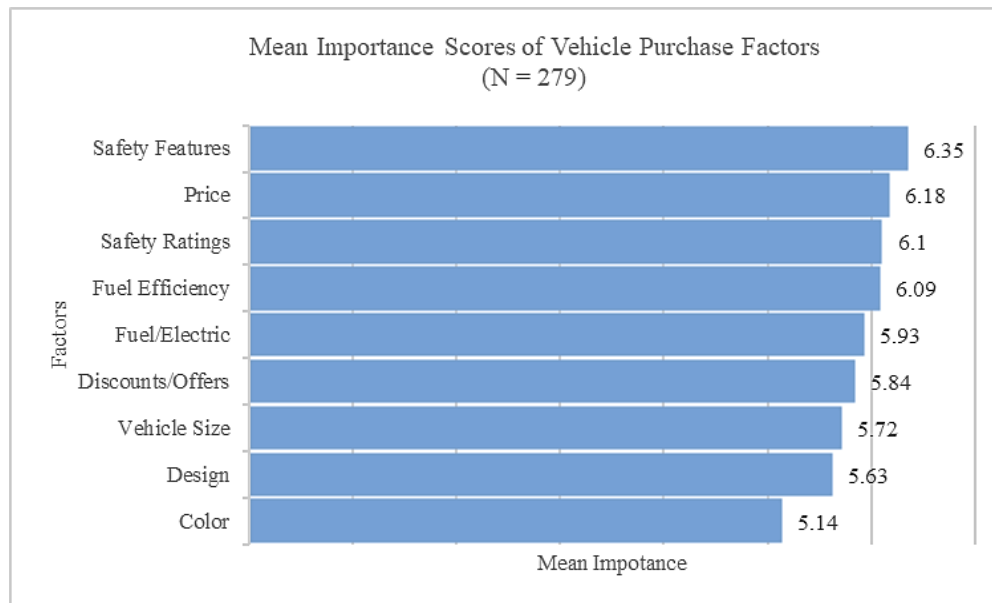


FIGURE 1: Mean importance of consumer priorities in vehicle purchasing decisions

When asked about ASEAN NCAP, 66.3% of respondents reported being aware of the program, while 33.7% indicated they were not. This level of awareness is noticeably higher than what was reported in earlier studies, such as Roslin et al. (2020), which found that only about 36% of Malaysian consumers were familiar with ASEAN NCAP. This is shown in Figure 2. Among those aware, most (79.6%) correctly understood that ASEAN NCAP gives star ratings for vehicle safety, but some mistakenly believed it measures fuel efficiency (11.1%) or technology advancement (6.8%). This indicates that, although awareness exists, misconceptions persist regarding its role. Awareness of ASEAN NCAP was higher among respondents with higher incomes and those living in urban areas, indicating that the accessibility of information is not uniform across all groups. Figure 3 shows the percentage of understanding of ASEAN NCAP ratings.

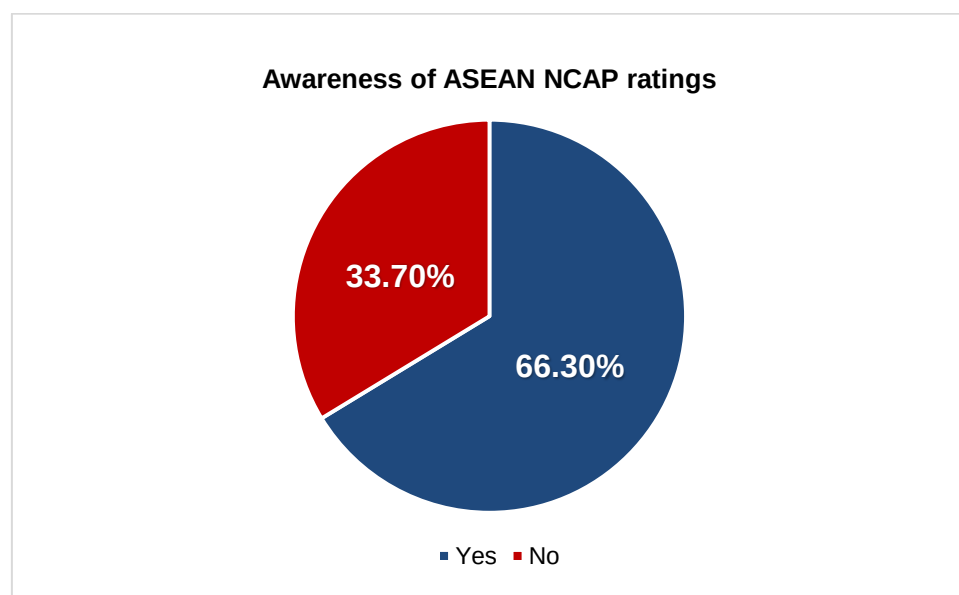


FIGURE 2: Awareness of safety ratings

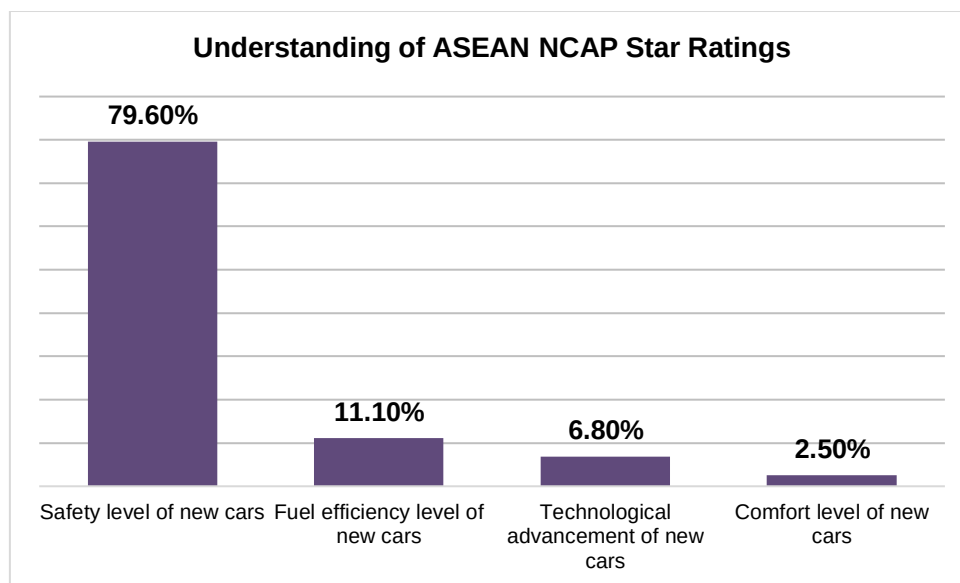


FIGURE 3: Understanding of ASEAN NCAP star rating

When asked if they were willing to pay more for vehicles with higher safety features, more than half of respondents (51.6%) answered "Yes," indicating an apparent readiness to invest in safer cars. A further 36.6% answered "Maybe," suggesting uncertainty that may depend on affordability, while only 11.8% stated that they were unwilling to pay more. This result shows that while price is a primary consideration, a significant proportion of Malaysian consumers are open to higher costs if it ensures better safety, reflecting a growing appreciation for safety technologies in vehicle choice.

ASEAN NCAP ratings were also found to have a significant impact on consumer decisions. Most respondents (76%) reported that the ratings affected their car choice. Of these, the majority expected a minimum of 4 or 5 stars for a car to be considered acceptable, while very few would accept a rating of 2 stars. This means that once consumers are aware of ASEAN NCAP, they use the ratings as a benchmark of safety. However, about one-fourth of respondents did not consider safety ratings when purchasing, suggesting that ASEAN NCAP's influence is still limited among certain groups. Figure 4 shows the percentage of the minimum star rating accepted by respondents.

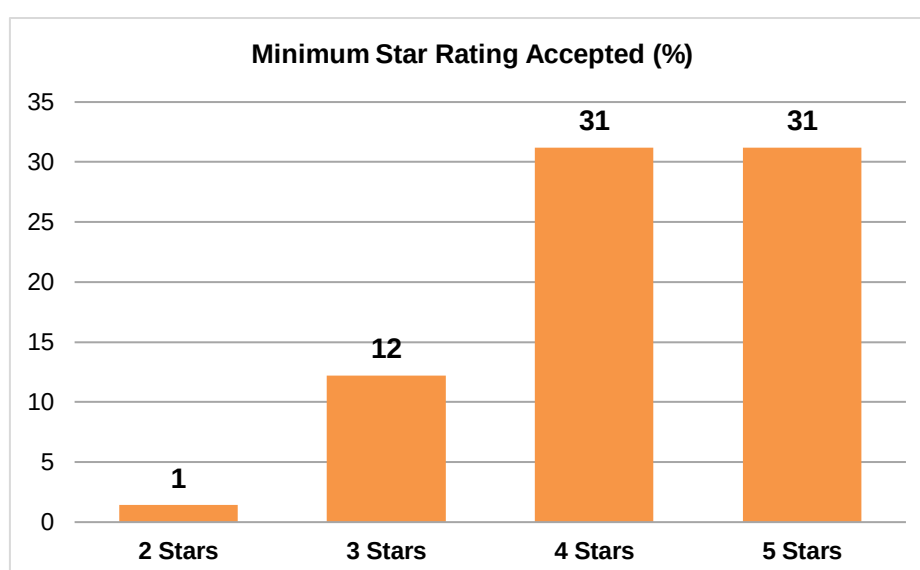


FIGURE 4: Minimum star rating accepted by respondents

The frequency of checking safety ratings before purchases varied. About one-third reported checking ratings once a week, while smaller groups checked them several times a week or daily. On the other hand, almost one-fifth never searched for safety ratings, and another quarter skipped the question because they did not consider ratings at all. This suggests that although ASEAN NCAP has an impact, not all consumers actively seek its information.

Chi-square tests were used to examine the associations between demographics and awareness or influence of the ASEAN NCAP. The results showed that awareness was significantly related to income ($p = .001$) and residential area ($p < .001$), indicating that respondents from wealthier and urban areas were more likely to be aware of ASEAN NCAP. Education was not significantly related to awareness. The influence of ASEAN NCAP on purchase decisions, however, did not vary significantly by income or residential area, suggesting that once people are aware of ASEAN NCAP, they tend to use it in a similar manner regardless of their background. Table 2 shows the Chi-Square tests of association between demographics and ASEAN NCAP awareness/influence.

TABLE 2: Chi-Square tests of association between demographics and ASEAN NCAP awareness/influence

Variables Tested	χ^2	df	p-value	Significance
Education $\times$ Awareness of ASEAN NCAP	9.09	6	0.168	Not significant
Income $\times$ Awareness of ASEAN NCAP	20.19	5	0.001	Significant
Income $\times$ Influence of ASEAN NCAP on Purchase	7.54	5	0.184	Not significant
Residential Area $\times$ Awareness of ASEAN NCAP	12.72	1	0	Significant
Residential Area $\times$ Influence of ASEAN NCAP	2.32	1	0.127	Not significant

These results suggest that Malaysians prioritize both safety and affordability when purchasing cars. Safety is valued not only in terms of car features but also through official safety ratings, such as ASEAN NCAP. However, awareness of ASEAN NCAP is not evenly spread across the population, being higher among urban and wealthier respondents, while rural and lower-income groups are less informed. This explains why the effectiveness of ASEAN NCAP is still limited, as mentioned in the problem statement. These findings meet the objectives of the study: Objective 1 is achieved by identifying consumer priorities, showing that safety and price are key factors, while Objective 2 is met by showing that awareness of ASEAN NCAP exists but is uneven, highlighting the need for more outreach and education so that all groups of consumers can use the information to make safer car choices

4. CONCLUSION

This study explored the factors influencing Malaysian consumers' vehicle purchasing decisions and their awareness of ASEAN NCAP safety ratings. The findings revealed that safety features, vehicle price, and official safety ratings were the most important priorities for buyers, while design and color were less critical. Fuel efficiency and fuel type (petrol or electric) were also highly rated, indicating that consumers consider both immediate affordability and long-term operating costs. These results highlight that Malaysian consumers adopt an essentially practical approach to purchasing decisions, giving weight to protection, affordability, and efficiency over aesthetics.

Awareness of ASEAN NCAP was relatively strong, with two-thirds of respondents recognizing the program and most correctly identifying its role in assessing vehicle safety. Notably, 76% of respondents reported that ASEAN NCAP ratings influenced their purchase decisions, and many preferred vehicles with at least four- or five-star ratings. However, awareness was not evenly distributed: respondents with higher incomes and living in urban areas were significantly more likely to be aware of ASEAN NCAP than those with lower incomes and living in rural areas. This uneven distribution suggests that the program's influence is limited by disparities in access to information and a lack of understanding of its rating system.

Another key finding was the willingness of consumers to invest in safer vehicles. More than half (51.6%) of respondents indicated that they were willing to pay more for cars with higher safety features, while 36.6% were uncertain, and only 11.8% were unwilling to do so. This reflects a growing recognition of safety as a worthwhile investment, even among cost-conscious consumers. Overall, the study confirms that safety and affordability are central to purchasing decisions, and that the ASEAN NCAP has the potential to significantly influence safer consumer choices. However, its effectiveness will depend on strengthening outreach and ensuring that awareness reaches all segments of the population, especially those in rural and lower-income groups.

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