Students' Beverage Preferences and their Development in Higher Education Institutions in Calabanga, Camarines Sur

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ABSTRACT

The purpose of the study was to investigate college students' beverage preference in Calabanga, Camarines Sur and their perception in terms of intellectual, social and wellness development. Three colleges participated in the study, namely Calabanga Community College, Central Bicol State University of Agriculture-Cablang and MRDA Academic Center, Inc. and a descriptive-correlational design was employed to evaluate the data. Descriptive statistics (weighted mean), Pearson correlation coefficient (r) and Kruskal-Wallis test were used to obtain the necessary information from the participants.

Among the variables studied, price and palatability were highly dominant with scored mean value of 3.27 while beverage reputation yielded mean score of 3.09. The agreement on the study was found in the cognitive (M=3.10), social (M=3.14) and wellness (M=3.12) perspectives. Though there was no significant relationship among beverage preferences and perceived students' development ($r = .101$, $p = .730$), some significant differences were found among educational institutions in price, palatability, beverage reputation and cognitive and social perspectives as compared to wellness.

Through the analysis, some general recommendations were made for beverage companies and campus authorities like reasonable prices, product promotional bundling, flavour innovations, formulation of health-oriented beverage and provision of a beverage and wellness guide for the purpose encouraging students to make better beverage related decisions.

Keywords: Students' Beverage Preferences, Development, Higher Education Institutions

INTRODUCTION

The consumption of beverages is significant to college students beyond hydration. It plays a role in lifestyle and social practices, as well as academic requirements. Due to the increased academic workload, college students are now using coffee drinks to remain awake and counteract fatigue, while they are also drawn to caffeine-free drinks that have a variety of tastes. It can thus be inferred that there are different preferences and influences for consumption because of economic conditions and personal choices. These preferences will be beneficial in determining how students make choices in purchasing beverages.

Globally, the consumption of beverages by young adults has become a matter of concern because of health and lifestyle implications. The increase in the number of coffee shops and specialty drink establishments has given consumers many drinks choices, while the rise in milk tea drink has given them even more choices. Competition among beverages providers has also become stiffer resulting in concern among consumers in regards to taste and price of a drink. Because of limited finances, students must therefore consider personal preference in making purchasing decisions in beverages.

In the Philippine beverage scenario, the beverage industry is highly visible through clinics and outlets that have opened. Students generally know a wide variety of coffee drinks offered, although they may taste the

same yet are very popular among young people in both the Ionian area and Vietnam. Most choices for drinks depend on both one's financial situation and one's taste preferences.

Details about the drinking habits of students in the Philippines with reference to an official source can provide several insights regarding the students' drinking habits. There was an Expanded National Nutrition Survey conducted by the DOST-FNRI in 2021 whose findings indicated that students aged 19 years old and below exhibit high levels of consumption of sugar-added beverages. The findings indicated that the average student consumes 271 ml of sugar-sweetened beverage and other sugar-sweetened beverages, the maximum being 407 ml for the latter category. In addition, the average daily intake for Filipinos aged between 19 to 59 years old is around 288 ml of sugar-containing beverages, thus confirming all trends regarding the consumption of sugar in the Philippines, regardless of age or gender.

Thus far, further investigations regarding the beverage consumption habits among students should be done because of the need to do so through the Food Safety Act of 2013 establishes a regulation system that serves to protect consumers from unsafe, unsanitary, and substandard food. The law stipulates the responsibilities of governmental bodies and local government units in offering food safety programs for consumers; they also govern food facilities operating within local government units. Furthermore, the law recognizes the importance of consumer protection as well as the protection of the beverage industry.

Under Republic Act No. 10963, or the Tax Reform for Acceleration and Inclusion Law (TRAIN), excise taxes were imposed on sweetened beverage products under the mandate of the law because of the economic burden and public health concern related to the consumption of sweetened beverages. The excise taxation provides the basis for the introduction of excise taxes in policy; therefore, studying the pricing and consumer purchasing behavior of students is essential in this regard.

Some of the factors which influence consumer purchasing behavior include the pricing and palatability of products. Pricing refers to the influence of money on the decision-making process regarding the type of beverage to purchase, while palatability refers to the sensory characteristics of the drink including flavor, smell, texture and taste. According to Ramirez et al. (2025) price has a significant role to play in consumer purchasing behavior because when various economic factors affect consumers' purchasing behavior then finances play an important role in determining the decision to purchase or not to purchase a product. Lamb (2024) accounted for the role sensory aspects of food and how it can impact consumer behavior. With this thought, it enabled study corresponding student's choice of drinks based on affordability and taste.

The establishment of different beverage establishments in Calabanga, Camarines Sur made it possible for college students to access both coffee and non-coffee drinks. In essence, the students especially have to select what to choose from among the available choices based on the cost and taste. Nonetheless, it is important to find out how both of these factors play a role in influencing the choices made by college students, since those studying in different institutions will make access to information which caters for many aspects of demographic varies.

Despite the various feedback obtained from other past studies, it is still not easy to interpret student's preference by college students within either of these two drinks. That is to say, while past studies have talked about cost and taste, there was no comparative study which was carried out to highlight which aspect, taste or cost, influences students during their purchase of drinks accordingly.

As a result of the various beverage industries that operate in Calabanga, Camarines Sur, one can affirm that there are not many past studies undertaken to clarify student's beverage selection. Granted there are many beverages available for purchase, little information exists in other parts about their beverage preferences as well as the factors which might affect their choices. Again, there lacks empirical knowledge concerning the comparison of the three institutions as regards student beverage selection.

Therefore, the research problem is not identifying the students' food choices but determining the influences of price and palatability influence on student's beverage preference based on each institution.

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As a result of the research gap, the study was confined to evaluating student's behavior based on pricing and palatability according to the demographic profile of the respondents. Thus, this study aims at finding out what beverages students prefer, the influence of pricing and palatability on their selection.

Results of this study may be beneficial to different stakeholders since students will be informed about the factors affecting their beverage buying behavior. Beverage producers will benefit from this study since it may provide information regarding pricing and product selection. Colleges may also find value in gaining information about the preferences of their consumer. Additionally, the researchers in the future can utilize this information to carry out further studies regarding consumer preferences.

Statement of the Problem

The study investigated the preferences of Higher Education Institutions (HEI's) students for coffee-based and non-coffee-based beverages in Calabanga District, Camarines Sur during the academic year 2025–2026.

Specifically, it sought answers to the following questions:

1. What is the students' beverage preferences in terms of price, palatability and beverage reputation?
2. What is the influence of beverage preferences on students' development in terms of cognitive, social and health and wellness?
3. Is there a significant relationship between beverage preferences and students' development?
4. Is there as significant difference in the beverage preference and students' development among aspects when grouped according to institutions?
5. What innovations may be proposed based on the findings in the study?

METHODOLOGY

The study utilized a descriptive-comparative-correlational research design in investigating students' beverage preferences and perceived development in selected higher educational institutions in Calabanga, Camarines Sur, Philippines. The participants in the study represented 523 college students taking classes in the Academic Year 2024–2025 at any of the three selected higher-learning institutions: (1) Calabanga Community College (CCC), (2) Central Bicol State University of Agriculture–Calabanga (CBSUA-Calabanga), and (3) MRDA Academic Center, Inc.

In this research, the authors used a questionnaire design with a structured survey instrument as the main tool used to obtain information about the students' beverage choice preferences and perceived student development. The questionnaire comprised two major sections. The first section titled Beverage Preference aimed at assessing the beverage preferences of students on coffee-based and non-coffee-based beverages based on three indicators—that was price, taste of the beverage chosen, and beverage quality (a product or other school institution's reputation).

The second section titled Students' Development aimed at assessing students' self-perception of development in terms of three dimensions—that was cognitive dimension, social dimension, and health/wellness dimension. More specifically, Part II required students to introspect about how their beverage preferences and experiences of drinking influenced their level of cognitive alertness/concentration and, experience, social interaction with others, and awareness of health measures (nutrition/nutrition). Each section of the questionnaire used a four-point Likert response scale to measure the degree to which each participant agreed to the statements in Part I of the questionnaire based on the following meaning: Rating of 4 meant strongly agree, rating of 3 meant agree, rating of 2 meant disagree, and rating of 1 meant strongly disagree. These were stated in terms of very high, high, low, and very low.

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As specified in the Data Privacy Act of 2012, the researchers applied the ethical principles that governed the conduct of the research as shown in the procedures adopted for data collection. The researchers sought informed consent from all participants prior to their being allowed to participate in the research study. All participants were assured that the information from their questionnaires would be used solely for academic purposes, thus assuring confidentiality. The identity of the researchers was protected through the use of identification number codes rather than the use of their names in presentations and elsewhere. Participation in

the survey was voluntary. Participants were informed that they had the right to withdraw from the study at any time without incurring any penalty. The data collected were kept in a secure location and were retained only for the period of time needed to conduct the study.

The following statistical techniques were used in answering the research questions posed by the authors: Weighted Mean, Pearson r, and Kruskal-Wallis test.

RESULTS AND DISCUSSION

Beverage Preferences in terms of Price

The beverage preference prices across the three colleges, Central Bicol State University of Agriculture – Calabanga (CBSUA), Calabanga Community College (CCC), and MRDA Institute, are as shown in Table 1.

Table 1. Students' beverage preferences in terms of Price

Indicators	Mean			OM	I	R
	A	**B**	**C**			
The price of my preferred beverage is affordable	2.98	3.15	3.83	3.32	A	2
I consider the price before buying a beverage.	3.08	3.21	3.74	3.34	A	1
The beverage is worth its price.	2.99	3.11	3.7	3.27	A	3
I am willing to pay more for my favorite beverage.	2.88	2.96	3.65	3.16	A	4
Overall Mean (OM)	**2.98**	**3.11**	**3.73**	**3.27**	**AGREE**	
Interpretation (I)	A	A	SA			
Rank (R)	3	2	1			

Note: CBSUA (A); CCC (B); MRDA (C); Overall Mean (OM); Interpretation (I); Rank (R)

Legend:

Value Scale	Mean Range	Interpretation
4	3.50-4.00	Strongly Agree (SA)
3	2.50-3.49	Agree (A)
2	1.50–2.49	Disagree (D)
1	1.00-1.49	Strongly Disagree (SD)

It was established that the price average was rated at 3.27, measured verbally as Agree, which indicates that students prefer to choose beverages based on price. The highest price average of 3.73, which means Strongly Agree was found in MRDA while CCC and CBSUA scored lower with values of 3.11 (Agree) and

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2.98 (Agree) respectively. Out of the four factors identified that students take into account when selecting priced beverages, considering price during a beverage purchase scored first with an average value of 3.34, followed by the affordability of beverages with an average of 3.32. As for whether students think a certain beverage is worth its price, the average recorded was 3.27 while willingness to pay more money for a beverage placed last with an average of 3.16.

The summary of results shows that students are very conscious and aware of how their choices economically impact their decisions since they tend to consider prices before making choices. For instance, the high rates on the first factor indicate that price consideration is a very significant factor among students; this is also complemented by the fact that the average recorded for the issue of affordability was relatively high. However, the third highest rate shows that it is possible to like certain beverages yet still be economical about their purchase.

Institution-wise statistics show that students in MRDA are highly determined and aware of price preferences when picking beverages as MRDA had an average score interpreted as Strongly Agree. The results support the fact that even if the average scores of students at the other institutions belonged to the Agree/Strongly Agree condition, it is impossible to claim that the differences among institution averages are valid statistically. However, the difference may be explained by the different purchasing priorities and what students perceive as affordable beverages.

The findings made here are in agreement with Franco (2025) when he researched what coffee is common among students and other members of the University of the Philippines and analyzed the factors that influence the selection of coffee. Similar to the findings of Franco, the current research emphasizes affordability and value of beverages since students should understand the necessity of purchasing affordable beverages. However, the current study has a local application.

Beverage Preferences in terms of Palatability

Table 2 presents the students' beverage preferences in terms of palatability across the three participating higher education institutions.

Table 2. Students' beverage preferences in terms of Palatability

Indicators	Mean			OM	I	R
	A	**B**	**C**			
My preferred beverage has a satisfying taste.	3.13	3.23	3.48	3.28	A	3
The aroma influences my choice.	3.03	3.2	3.35	3.19	A	5
I enjoy its flavor.	3.22	3.36	3.57	3.38	A	1
The texture enhances my drinking experience.	3.03	3.26	3.3	3.2	A	4
I usually repurchase it because of its taste.	3.06	3.25	3.57	3.29	A	2
Overall Mean (OM)	3.09	3.26	3.45	**3.27**	**AGREE**	
Interpretation (I)	A	A	A			
Rank (R)	3	2	1			

The study indicates that the overall mean values for palatability rated at 3.27 indicates that respondents, in general, considered sensory characteristics when selecting their preferred drink. The highest overall mean of 3.45 was attained by MRDA, followed by CCC at 3.26 and CBSUA-Calabanga with 3.09 although all the three schools were rated with Agree status in their responses. Enjoying the taste of the beverage got the highest overall mean of 3.38 followed by the desire to repurchase due to the flavor (3.29), feeling satisfied

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by the taste of the beverage (3.28), and texture (3.20). Aroma affecting the decision to purchase beverages got the lowest score with a mean of 3.19, but still rated us agreed.

The results suggest that taste aspects are the main aspects of palatability to the respondents signaling that the taste experience is an important factor of choice. The feeling of desire to repurchase a beverage shows that the existence of satisfying sensory evidence can maintain further usage and hence purchases. The results demonstrate that although aroma and texture scored lower, in terms of ranking, they are still relevant in students' overall experience of beverages. This indicates that taste is the most outstanding among the aspects combined in this particular research.

The implications of the findings show that evaluation of the coffee-based and non-coffee beverages should take into account the sensory experience of student. The desire to buy flavors in the product means that students value their enjoyment from drinking more than characteristics of the beverage itself. Nevertheless, the closeness of the mean scores of the five indicators indicates that all the taste, aroma, texture, and intention to repurchase influence the choice at the same time. Thus, it is very important to have a balanced approach when developing products in beverage business ensuring that all the drinks get perfect flavors and pleasant aromas and textures to appeal to students from different backgrounds.

The findings correlate with findings from the research by Barahona et al. (2020) who studied the sensory attributes and consumers' preferences in regard to 18 coffee products in Colombia and discovered that sensory characteristics influenced consumers' evaluations of the product before making a purchase decision.

Beverage Preferences in terms of Beverage Reputation

Table 3 presents the students' beverage preferences in terms of beverage reputation.

Table 3. Students' beverage preferences in terms of Beverage Reputation

Indicators	Mean			OM	I	R
	A	**B**	**C**			
I prefer beverages from well-known beverages.	2.81	3.05	3.22	3.03	A	4.5
Beverage reputation influences my buying decision.	2.83	3.07	3.35	3.08	A	3
I trust established beverage beverages.	2.99	3.12	3.3	3.14	A	2
I believe famous beverages provide better quality.	2.84	3.07	3.17	3.03	A	4.5
I recommend my preferred beverage to others.	2.98	3.18	3.35	3.17	A	1
Overall Mean (OM)	2.89	3.1	3.28	**3.09**	**AGREE**	
Interpretation (I)	A	A	A			
Rank (R)	3	2	1			

Based on Table 3, it can be stated that the average score for beverage reputation is 3.09 and is described as Agree. Among the five factors, the highest average score was accounted for recommending their favorite beverage to others which has the highest score of 3.17. Then comes the one regarding trusting the known beverages which obtained the mean score of 3.14, and the mean score of `3.08` for considering the beverage reputation in purchasing process was accounted for in the third place. Moreover, the average score of 3.03 for the use of beverage reputation from the known brands and the score of `3.03` for assuming the good quality associated with the known beverage reputation are ranked as fourth and fifth, respectively. The highest average score is exhibited by MRDA Academic Center, Inc. being `3.28`.

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The table also assures us that beverage reputation is taken into account by the students while selecting beverages, although the findings show the fact that its influence is more effective in trusting as well as recommending the favorite beverage. The highest average value turned out to be the indicator of recommending to prefer someone else (M = 3.17). This indicates that students rely heavily on their experience with specific products. An average score of 3.14 regarding trusting the established beverages indicates the significance of familiarity and reliability for students in terms of their choices. Therefore, the role of students' experience and their trustworthiness in beverages chosen by them is much more significant than their popularity.

The different values given by the institutions should be paid attention of regarding the estimation of beverage reputation. MRDA Academic Center, Inc. recorded the highest mean score which is 3.28. The educational institutions, on the contrary, proved their satisfaction with beverage reputation indicators having the lowest score of 2.89. There is a range of differences in the way students value beverage reputation. Thus, there exist differences in their consumption experience, different tastes while selecting beverages, etc.

Ong et al. (2021), through their research on the consumer's preferences of milk tea based on conjoint analysis, indicated that beverage was one of the least important variables compared with other criteria such as pearl size, sugar level, and ice volume. Therefore, it appears that even though beverage reputation is important for the consumer decision-making process, it is not more potent than real experience with the product.

Summary of Beverage Preferences along Aspects

Table 4 presents the assessment of students' beverage preferences in terms of price across the three participating higher education institutions.

Table 4. Summary of Students' beverage preferences along Aspects

Indicators	Mean			AM	I	R
	A	**B**	**C**			
Price	2.98	3.11	3.73	3.27	A	1.5
Palatability	3.09	3.26	3.45	3.27	A	1.5
Beverage Reputation	2.89	3.1	3.28	3.09	A	3
Overall Mean (OM)	2.99	3.16	3.49	**3.21**	**AGREE**	
Interpretation (I)	A	A	A			
Rank (R)	3	2	1			

As shown in Table 4, the price as one of the indicators received an overall mean score of 3.27, which can be verbally described as Agree. Among the three educational institutions, MRDA Academic Center, Inc. (C) received the highest mean score of 3.73 interpreted as Strongly Agree and followed by Calabanga Community College (B) which have a mean of 3.11 and CBSUA-Calabanga (A) with a mean of 2.98 which can be interpreted as Agree.

The results indicate that students of the three educational institutions have a common stance regarding the importance of price in choosing beverages. The higher mean score for MRDA suggests that the respondents gave a higher value to price compared to students of other educational institutions who are involved in the study.

The implication of these results is that price comes as an important factor when it comes to the preferences of students with respect to beverages, although the degree of importance assigned to it varies from one educational institution to another. The general mean score of 3.27 indicates that students tend to agree on

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the notion that price is a purchasing factor when selecting beverages. A higher mean from MRDA shows that MRDA students agreed more concerning the significance of price whereas mean score of 2.98 from CBSUA reveals that the students there duly consider the factor of price less than students of MRDA. Nonetheless, it can be seen from the results that regardless of the differences in the educational affiliation, price is still an important purchasing factor for students.

Moreover, the differences in the mean scores across the three educational institutions suggest that the beverage business should take into account the purchasing power and preferences of the student market while coming up with pricing decisions. Offering a selection of serving sizes and having affordable beverages, student discounts, and providing product combinations that suit student budgets can help cater to the varying financial status of students. However, this should not compromise the safety and quality of the beverages.

For instance, Franco (2025) highlighted that affordability is a relevant factor in coffee preferences of students, faculty, and staff in the University of the Philippines Los Baños. The study revealed that price, taste, cleanliness, and product quality are significant factors in coffee purchasing where customers prefer affordable options.

Influence of beverage preferences on students' development along Cognitive

Table 5 presents the influence of students' beverage preferences on their cognitive development across the three participating higher education institutions.

Table 5. Influence of beverage preferences on students' development along Cognitive

Indicators	Mean			OM	I	R
	A	**B**	**C**			
My preferred beverage helps me stay alert during classes.	2.84	3.03	3.3	3.06	A	4
It improves my concentration while studying.	2.85	3.07	3.48	3.13	A	1
It helps me finish academic tasks.	2.83	3.01	3.39	3.08	A	3
It motivates me to study longer	2.86	3.09	3.39	3.11	A	2
Overall Mean (OM)	2.85	3.05	3.39	**3.1**	**AGREE**	
Interpretation (I)	A	A	A			
Rank (R)	3	2	1			

The table shows a general mean of 3.10 for cognitive development. This polynomial is verbally interpreted as Agree, meaning that respondents from the three schools interpreted their choices of food and drinks as useful for cognitive development. MRDA Academic Center, Inc. has the highest overall mean of 3.39 and CCC at 3.05. For the respondents with the individual impacts, the concentration while studying had the highest mean of 3.13, while the motivation to study longer (3.11), and completion of academic tasks (3.08). Moreover, 3.06 is the overall mean of the respective respondents on the aspect of alertness during the class.

From the aggregate mean on the concentration (3.13) indicates that respondents came to believe that their choice of food and drinks help them with their concentration while studying. From the motivations to study longer (3.11) and completion of academic tasks (3.08), they believe that the choice of food and drinks would help them with their academic activities. However, the area of alertness during classes was rated the lowest, although it achieved an overall mean of 3.06.

The higher mean of MRDA Academic Center, Inc. (3.39) indicates that the respondents perceived positively about their preferred beverages contributed to their cognitive development relative to the other two colleges where their overall means were lower than 3.05. However, it does not mean that CBSUA-

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Calabanga has no perceived cognitive contributions to their students because there were lower means than the other college respondents.

The findings provide a generalized point of view of the students regarding the relationships between their food and beverage preferences with their academic activities. It is possible that the food and beverage preferences of the students were supported by other studies. However, it is important to note that the results presented in the current study reveals only the perceptions of the respondents and not objective proof of any cause-effect relationship between the consumption of coffee vs. non-coffee products and their cognitive ability or performance. The individual preferences and characteristics of every student that may have had influence on the level of alertness and cognitive ability of the students as stated earlier.

The results are in line with the findings of Choi et al. (2024) in their study on caffeine consumption among medical students in Korea in which they reported that majority of the students (60.9%) consumed caffeine for academic performance purpose.

Influence of the Students' Beverage Preferences on their Social Development

Table 6 presents the influence of beverage preferences on students' development along the social dimension, as perceived by respondents from the three participating higher education institutions.

Table 6. Influence of beverage preferences on students' development along Social Development

Indicators	Mean			OM	I	R
	A	**B**	**C**			
I enjoy drinking beverages with friends.	3.12	3.28	3.43	3.28	A	1
Beverage shops are places where I socialize.	2.77	3.31	3.3	3.13	A	2.5
My friends influence my beverage choice	2.68	3.28	3.43	3.13	A	2.5
Drinking beverages improves my social interaction.	2.69	3.2	3.43	3.11	A	4
Beverage trends influence my purchasing decisions.	2.7	3.2	3.35	3.08	A	5
Overall Mean (OM)	2.79	3.25	3.39	**3.14**	**AGREE**	
Interpretation (I)	A	A	A			
Rank (R)	3	2	1			

The data indicate that beverage consumption is overall regarded as a social activity, mean = 3.14, interpreted as Agree. Analyzing the descriptive statistics for the five indicators, enjoying drinking with friends had the highest overall mean of 3.28, ranking first, then attending beverage shops to socialize and being influenced by friends to drink a beverage both had a mean of 3.13, second and third respectively. Then there was the statement that drinking beverages would improve social interaction which received a mean of 3.11, ranking fourth. Finally, beverage trends that affect purchasing decisions received the lowest mean of 3.08, ranking fifth. For the three institutions, MRDA Academic Center, Inc. had the highest overall mean with 3.39, followed by CCC at 3.25, then CBSUA-Calabanga with the lowest mean at 2.79, but all received the verbal interpretation of Agree.

In general, these findings indicate that students understand beverage consumption as part of their social experience, especially when sharing beverages with friends. Not surprisingly, the indicator with the highest mean suggests that students are social when they enjoy beverage consumption with others (peers) which suggests an inherent social and interpersonal component to the experience of beverage consumption. That said, students rated beverage trends and beverage consumption to improve social interaction lower,

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suggesting that students do not perceive beverage trends and beverage consumption to improve their social relationships.

These findings suggest that beverage consumption is more than an isolated individual purchasing activity, but also an opportunity for students to make or maintain social connections. For many students, sharing beverages with friends may provide informal opportunities for conversation, companionship, and interaction outside of traditional classroom interactions. Consequently, beverage shops (and establishments) may also serve as informal social places where students gather, share experiences and strengthen relationships with peers. It is important for students to recognize these findings as their understanding of a beverage consumption experience as a social activity, not as evidence that drinking a beverage contributed to their social development.

These findings are supported by the Dakič (2026) study on ritualized coffee consumption among Generation Z consumers in Slovenia where coffee consumption was identified with comfort, identity, relaxation, and social bonding. The study emphasized that drinking coffee with friends and going to coffee shops was part of the participants' routines and social encounters.

Influence of beverage preferences on students' development along Health and Wellness

Table 7 presents the influence of beverage preferences on students' development along the dimension of health and wellness.

Table 7. Influence of beverage preferences on students' development along Health and Wellness

Indicators	Mean			OM	I	R
	A	**B**	**C**			
I believe my preferred beverage is safe for regular consumption.	2.84	3.12	3.26	3.07	A	5
I consider the nutritional value before buying beverages.	2.89	3.22	3.3	3.14	A	2
I balance beverage consumption with a healthy lifestyle	2.97	3.22	3.3	3.16	A	1
Drinking my preferred beverage makes me feel refreshed.	3.04	3.2	3.09	3.11	A	4
I avoid excessive consumption of sugary or caffeinated beverages.	2.96	3.17	3.22	3.12	A	3
Overall Mean (OM)	2.94	3.19	3.23	**3.12**	**AGREE**	
Interpretation (I)	A	A	A			
Rank (R)	3	2	1			

The average mean of 3.12, verbalized as Agree, indicates that students perceived beverage preferences in general, in association with health and wellness. Among the indicators being rated, balancing beverage consumption with a healthy lifestyle had the highest overall mean of 3.16, followed by considering nutritional value before purchasing beverages (3.14). In addition, avoiding excessive consumption of sugary or caffeinated beverages had an average mean of 3.12, while feeling refreshed after drinking preferred beverages was 3.11. The final indicator, feeling that preferred beverages are safe for regular consumption had the lowest mean of 3.07, however, it was still verbalized as Agree.

The institutional results indicate that MRDA Academic Center, Inc. had the highest overall mean of 3.23, CCC had a mean of 3.19 and CBSUA-Calabanga had the lowest overall mean at 2.94. However, all institutions had mean scores in the Agree categorization, which indicates that students perceived beverage consumption associations with health and wellness. Similarly, the highest indicator in the overall group was balancing beverage consumption with a healthy etenelifestyle, while perceived beverage safety was the lowest indicator of the group. Overall, students are generally likely to recognize the importance of

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maintaining healthy consumption practices, however, the safety of beverage consumption may require further exploration within the student population.

The findings endorse the understanding that students perceived beverage consumption within every day practice of health and wellness, and not as just taste or preference. The highest indicator, balancing beverage consumption with a healthy lifestyle signifies that students understood the importance of consuming beverages to an appropriate moderation and, making appropriate beverage choices as part of their daily health routines. Furthermore, the overall indicator rating to consider nutritional value indicates knowledge of beverages potentially differing in nutritional value and therefore potential health implications. However, the relatively low consideration of safety shows there is an opportunity for students to access reputable information about beverage ingredient, preparation, quality and proper consumption.

The findings may also related to a study by Choi et al. (2024) studied caffeine consumption among medical students in Korea. In this study it was reported that coffee was the most consumed caffeinated beverage among the cohort, however regardless they had some participants reporting caffeinated psychosomatic symptoms, such as anxiety and palpitations. Choi et al. findings highlight the need to understand the caffeine consumption among students, along with understanding the possible health experiences related to beverage consumption.

Summary of Students' Perceived Development Across Different Aspects

Table 8 presents the summary of students' perceived development across the three participating higher education institutions, namely CBSUA-Calabanga (A), CCC (B), and MRDA Academic Center, Inc. (C).

Table 8. Summary of Students' Perceived Development Across Different Aspects

Indicators	Mean			OM	I	R
	A	**B**	**C**			
Cognitive	2.85	3.05	3.39	3.1	A	3
Social	2.79	3.25	3.39	3.14	A	1
Health and wellness	2.94	3.19	3.23	3.12	A	2
Overall Mean (OM)	2.86	3.16	3.34	**3.12**	**AGREE**	
Interpretation (I)	A	A	A			
Rank (R)	3	2	1			

As seen in Table 8, the cognitive aspect had an overall mean of 3.10, which is interpreted as Agree. There were mean scores of 2.85, 3.05, and 3.39 for CBSUA-Calabanga, CCC, and MRDA respectively. The social component had an average of 3.14 which is also interpreted as Agree and had mean scores of 2.79, 3.25, and 3.39. Moreover, the health and wellness aspect had an overall mean of 3.12, which is interpreted as Agree. Among the three aspects, social ranked first, health and wellness second and cognitive was third. The mean score of 3.12 shows that the respondents generally agreed with statements regarding the degree of development perceived by students.

According to the results, students perceived social aspects with the highest overall means of 3.14 because they seem to relate their beverage preferences to their social interactions most. The respondents ranked health and wellness in second place with a score of 3.12 which means that they understand how their beverage preferences affect their health. Therefore, cognitive development was ranked in the third place, with a score of 3.10. However, cognitive development also has a score that indicates agreement in terms of the respondents' perceptions.

In terms of the cognitive aspect, it was found that the highest score was reported at MRDA Academic Center, Inc. with a score of 3.39, followed by CCC with a score of 3.05 and CBSUA-Calabanga with a

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mean of 2.85. This means students at MRDA have more agreement with the perception related to the cognitive aspect of the beverage preference than CBSUA and CCC. However, this finding does not necessarily mean their beverage consumption enhances attention, cognitive abilities, or academic performance.

Also, MRDA has the highest mean in the social aspect with a mean of 3.39 followed by CCC with a mean of 3.25 and CBSUA-Calabanga with a mean of 2.79. This means that MRDA students associate their beverage experiences with social interactions.

With respect to health and wellness, based on the results obtained, MRDA had the highest mean of 3.23, followed: by CCC with 3.19 and CBSUA-Calabanga with 2.94. These findings indicate that students are aware of the relevance of their beverage preferences to their health, including the understanding of ingredients, habits, and health effects of their consumption.

Based on the findings obtained, it appears that beverage preferences carry meanings that have been reflected in the cultural context in which they are made. The findings of the research support the conclusion presented by Dakič (2026) regarding the meaning of coffee in the lives of the Generation Z consumers in Slovenia.

Significant Relationship Between Beverage Preferences and Student Development

Table 9 shows the relationship between beverage preferences and the students' development.

Table 9. Significant Relationship Between Beverage Preferences and Student Development

Variable	r	df	p
Beverage preferences and student development	0.101	521	0.021

Note. r = Pearson correlation coefficient; df = degrees of freedom; p = probability value.

Table 9 presents the results of the correlation analysis examining the relationship between students' beverage preferences and their perceived development. Specifically, the analysis determined whether beverage preferences in terms of price, taste, and reputation were significantly associated with students' perceived cognitive, social, and health-and-wellness development. The Pearson product-moment correlation coefficient was employed to determine the strength, direction, and statistical significance of the relationship between the variables.

The results revealed a Pearson correlation coefficient of r = .101, with 521 degrees of freedom and a probability value of p = .021. The positive correlation coefficient indicates a positive association between students' beverage preferences and their perceived development. Furthermore, since the probability value of .021 is lower than the 0.05 level of significance, the relationship is statistically significant. Thus, the null hypothesis of no significant relationship between the two variables is rejected.

Although the correlation is statistically significant, the coefficient of .101 indicates a very weak positive relationship. This suggests that students who demonstrate stronger preferences for certain beverage characteristics tend to report slightly higher levels of perceived cognitive, social, and health-and-wellness development. However, the magnitude of the correlation indicates that the association is minimal. Therefore, while a statistically significant relationship exists, beverage preferences have only a very limited association with students' perceived development.

In summary, the findings establish that students' beverage preferences and their perceived development are significantly related, although the relationship is very weak. This suggests that beverage preferences in terms of taste, affordability, and product reputation may have a slight association with students' developmental experiences. Nevertheless, these preferences should not be considered substantial indicators of overall student development. Cognitive experiences, social interactions, and health-and-wellness

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perceptions may also be shaped by various factors, including academic demands, lifestyle choices, social relationships, and dietary practices. Hence, while beverage preferences demonstrate a statistically significant association with perceived development, other factors likely play more substantial roles in shaping students' overall college experiences.

These findings can be juxtaposed against those of Dakič (2026) that examined the practices of coffee consumption rituals among Generation Z consumers, particularly related to the use of coffee as a means of relaxation and developing personal identity through socialization. While this study explored the social implications put forth by beverage consumption, the findings are qualitative and have not produced significant relationships between beverage preferences and overall development.

Significant Differences in Beverage Preference Factors

Table 10 shows whether the three institutions differ significantly in the six factors studied.

Table 10. Significant Differences in Beverage Preference Factors

Factor	χ^2	df	p	ε^2
Price	30.11	2	< .001	0.067
Palatability	8.6	2	0.014	0.019
Beverage reputation	6.63	2	0.036	0.015
Cognitive factors	15.38	2	< .001	0.034
Social factors	15.15	2	< .001	0.034
Health and wellness	4.62	2	0.099	0.01

Note. χ^2 = Kruskal–Wallis test statistic; df = degrees of freedom; p = significance probability; ε^2 = epsilon-squared effect size. Statistical significance was evaluated at $\alpha = .05$. Effect sizes are rounded to three decimal places.

The Kruskal-Wallis test was used to ascertain if there were statistically significant variations in the college students' preferences regarding beverage characteristics and perceptions of personal development according to each of their higher education institutions. The three (3) beverage preference attributes that were analyzed were price, palatability, and beverage reputation. The analysis also covered the three (3) aspects of the college students' development such as cognitive dimensions, social dimensions, and health and wellness. The Kruskal-Wallis test is applicable for comparing data from both institutions separately.

The findings indicate price has a chi-square statistic of 30.11 with a significance level of less than .001 and effect size of .067. As for palatability, the chi-square statistics came to 8.60 (p = .014) while beverage reputation registered a chi-square of 6.63 (p = .036). In regards to development, cognitive and social dimensions had chi-square values of 15.38 and 15.15 respectively, both of which obtained significance levels below .001. Health and wellness had a chi-square value of 4.62 and significance level of .099 with corresponding epsilon-squared values ranging from .010 to .067 across the three variables.

This illustrates that there are statistically significant differences among the three institutions based on price, palatability, and beverage reputation since their respective p-values are less than .05. Among all the attributes, price recorded the highest chi-square ($\chi^2 = 30.11$) value with the largest effect size ($\varepsilon^2 = .067$) showing that there are significant variations based on perceptions about beverage prices. Similarly, significant findings for palatability and beverage reputation indicate students among the participating institutions have different perspectives regarding the specific attributes of beverages. There were no significant differences noted for health and wellness (p = .099), which means all the schools' students do not have significantly different responses for this particular attribute.

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The differences associated with price reflect the fact that students' perceptions of fair prices and voucher pricing will vary depending on interpersonal factors and student financial situations. Variations in financial resources, available beverage venues, product prices, and distance have not previously been examined in relation to price perceptions, although these factors presumably have an impact on pricing. The fact that the results for palatability and beverage reputation were statistically significant suggests that students' preferences regarding beverage quality, taste, and uniqueness may play a vital role in their preferences for drinks at various institutions. As such, these findings indicate that beverage companies will have to learn about each institution's respective consumer segments rather than assuming that one pricing plan or marketing strategy will work for every college consumer market segment. These findings are consistent with the work of Thuannadee (2024) that looked at how college students valued the various attributes of on-campus coffee shops.

Sip Smart, Choose Smart: Proposed Innovation

The "Sip Smart, Choose Smart: Affordable Drinks, Better Choices" is a student-centered beverage innovation program designed to promote affordable, informed, and responsible beverage choices among college students in higher education institutions in Calabanga, Camarines Sur as shown in Figure 1.

Figure 1. Proposed Innovation



The proposed innovation, "SIP SMART, CHOOSE SMART: Affordable Drinks, Better Choices," will be strengthened by directly aligning each initiative with the findings of the study. Since price emerged as an important consideration in students' beverage preferences, the Barkada Beverage Deals and Best Beverage for Your Budget initiatives will provide affordable beverage options, group discounts, and budget-friendly packages. In response to palatability, Create Your Own Flavor! will allow students to suggest and explore different beverage flavors based on their preferences. Meanwhile, Think Twice Before You Buy! will promote informed purchasing by providing information about beverage ingredients, quality, and nutritional value. The Healthier Sip, Smarter Choice initiative will encourage students to choose lower-sugar beverages and practice responsible consumption. To improve convenience and decision-making, Order Smart, Save Time! will introduce a QR-based digital menu containing beverage prices, ingredients, and nutritional information. Lastly, Your Feedback Matters! will provide students with an opportunity to share their preferences, suggestions, and concerns to improve the program.

The implementation of the innovation will be carried out over six months. The first month will focus on planning, coordination with school administrators and beverage vendors, and gathering baseline information. The second month will involve preparing the beverage menu, promotional materials, QR codes, and feedback mechanisms. The third and fourth months will focus on launching and implementing the different initiatives. During the fifth month, the implementers will monitor student participation, purchasing behavior, and satisfaction. The sixth month will be devoted to evaluating the program's effectiveness and identifying areas for improvement.

To measure the success of the innovation, several indicators will be considered, including students' satisfaction with beverage prices, participation in group discounts, acceptance of new flavors, selection of healthier beverages, utilization of the QR-based ordering system, and submission of student feedback. Pre-implementation and post-implementation surveys, sales records, QR code analytics, and feedback forms will be used to assess the results. The findings will serve as the basis for improving the program and ensuring its sustainability. Through continuous monitoring, student participation, and collaboration with beverage vendors, SIP SMART, CHOOSE SMART aims to provide affordable, appealing, accessible, and healthier beverage choices while promoting informed purchasing decisions among students.

CONCLUSIONS

Students' beverage preferences are strongly driven by affordability, taste, and reputation of the beverage. On this account, taste remained the most important factor influencing students' beverage choices. In addition, students see their drink choices determining their cognitive, social and health-and-wellness development. However, as per statistical analysis, no significant relationship exists between students' beverage choices and perceived development on all three aspects.

RECOMMENDATIONS

Educational establishments of advanced learning and vendors of beverages are urged to provide options that are inexpensive and tasty while supplying suitable nutritional information to encourage wise and healthy choices by the students. With the "Choose Smart, Sip Smart: Affordable Drinks, Better Choices" initiative, students are encouraged to select beverages based on the cost, taste, quality of the product, and better alternatives. The program further enhances students' participation in the program through opportunities to express their likes, ideas, and opinions regarding beverages offered by local vendors on behalf of the students' overall welfare.

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