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Research Article

Coffee Consumption and its Perceived Effects on the Study Habits of Higher Education Students

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ABSTRACT

This study describes coffee consumption and its perceived effects on the study habits of selected higher education students at Cavite State University Imus Campus. A quantitative research design was employed, surveying 208 students via a structured questionnaire. The study analyzed the data using descriptive and inferential statistics. The demographic profile of respondents shows a majority of females (55.77%) and students aged 21 to 24 years (48.07%), with most enrolled in the BSIT program. Results indicate that coffee consumption is a prevalent part of students' daily routines, with 76.44% drinking coffee daily and a significant preference for both hot and cold types (57.21%). One cup per day is the most common consumption level (57.21%).

Students perceived coffee to significantly enhance cognitive functions, energy levels, productivity, and mood during study sessions, aligning with previous research highlighting caffeine's positive effects on memory, alertness, and motor coordination (Lin et al., 2023). However, there are mixed perceptions regarding dependency and withdrawal symptoms, with some negative impacts noted when coffee is not drunk, echoing concerns about tolerance and withdrawal symptoms discussed in the literature (Van De Walle et al., 2019). Findings showed no significant differences in the perceived effects of coffee consumption when the respondents were grouped by age, sex, year level, or degree program.

This research suggests that coffee consumption plays a vital role in the student's academic lives. While consumption enhances cognitive and academic performance, it also presents potential risks related to coffee dependency. Administrators can use the findings of this study to enhance the school environment with a focus on food and health security by providing healthier alternatives and varied coffee options in campus canteens that can support students' academic success.

Keywords: *Academic performance, Caffeinated drinks, Coffee, Coffee consumption, Coffee effects, Study habits*

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Introduction

Coffee, one of the most consumed beverages globally, is known for its effects on the central nervous system, which can enhance an individual's memory, sense of alertness, and bodily motor coordination (Barcelos et al., 2020). It is a source of caffeine, a stimulant that improves an individual's reaction times and cognitive functions. Thus, it becomes a popular choice for college students who often face demanding academic schedules. However, regular and frequent consumption of coffee can lead to dependency, tolerance, and withdrawal symptoms (Hartney & MSc, 2023).

Consuming coffee varies throughout different demographics and academic pressures. College students, in particular, are widely known to consume coffee to keep them awake, help enhance their cognitive performance, and even manage the stress commonly associated with academics (Bertasi et al., 2021). Despite its benefits, excessive coffee consumption can lead to negative effects such as sleep disturbances, anxiety, and dependency (Caffeine: How much is too much?, 2022).

In higher education, the role of educational administrators is crucial in shaping a conducive learning environment. This includes making decisions about the availability of coffee in campus canteens or concessionaires. Educational administrators must be careful with the food they provide the students in their canteens and/ or concessionaires. There must be a balance between the beverage offerings and the benefits that can aid students in their studies, especially with the potential risks of excessive coffee consumption.

In her review of the knowledge base for the communication skills of educational administrators, Gomez (2022), provides the importance of decision-making in an educational setting. Educational administrators are tasked with creating environments and student services that could support the student's well-being and academic success. This environment includes understanding not only the varying needs and behaviors but also making informed decisions about the resources and amenities available on the campus. One resource that requires careful consideration is the availability of coffee products across all the concessionaires in the canteen. Different coffee products are available for easy access to the students. There are coffee vending machines, there are 3-in-1 coffee mixes in sachets, brewed coffee, iced coffees, and even ready-to-drink coffee in bottles.

Thus, understanding the perceived effects of coffee consumption among higher education students is important for several reasons. First, it provides insights into how the students manage their academic workload and stress. It also helps identify risks associated with excessive coffee intake, such as the impact on sleep quality, physical, and mental health. Lastly, this study can be a source of strategies that promote healthier consumption habits and enhance academic performance.

Given the significant role coffee plays in the lives of college students, this study aims to investigate the profile of coffee consumption among higher education students and its perceived effects on their study habits. The specific objectives of this study are to:

1. determine the profile of the respondents in terms of their sex, age, year level, and degree program;
2. describe the level of coffee consumption of the respondents in terms of frequency, number of cups, and types;
3. determine the perceived effects of coffee consumption on the study habits of higher education students;
4. determine if there is a significant difference in the responses on the perceived effects of coffee consumption on the study habits of higher education students when grouped according to age, sex, year level, and degree program.

Methods

This study employs a quantitative research design to investigate the perceived effects of coffee consumption on cognitive enhancement, academic performance, dependency, withdrawal symptoms, and overall impact among higher education students. The approach is chosen to systematically quantify the responses and analyze the data using statistical methods.

The target population for this study consists of higher education students from Cavite State University, Imus Campus. A total of 208 participants were selected through convenience sampling, where students who were present in the canteen drinking coffee voluntarily participated in the survey. This method was chosen to capture responses from students who are active coffee consumers within the campus environment.

To ensure the validity of the instrument, a pilot test was conducted involving 50 students from the Bachelor of Science in Computer Science (BSCS), Bachelor of Science in Information Technology (BSIT), and Bachelor of Science in Hospitality Management (BSHM) programs. These students were strategically located near the canteen, making them accessible for the validation process.

Data was collected using a structured questionnaire distributed online via Google Forms. Respondents were approached in the canteen. A tablet was provided for them to complete the questionnaire on the spot. This data-gathering method ensured convenience for both the respondents and the researcher which also facilitated immediate data retrieval. The questionnaire was divided into five parts:

1. Profile: This collects demographic information such as age, sex, year level, and degree program.
2. Coffee Consumption: This part assesses the frequency and quantity of coffee consumed by the respondents.
3. Effects on Cognitive Enhancement and Academic Performance: This part evaluates how coffee consumption influences the respondent's cognitive abilities and academic outcomes.
4. Effects on Dependency and Withdrawal: This part investigates the dependency on coffee consumption and withdrawal symptoms as observed and experienced by the respondents.
5. Overall Perceived Effect: This part measures the general impact of coffee consumption on students' academic habits.

The questionnaire was validated through a pilot test with 50 students from the BSCS, BSIT, and BSHM programs. These students were selected due to their proximity to the canteen and most likely being the coffee consumers. Feedback from the pilot test improved the questionnaire to ensure the clarity and reliability of the instrument.

The collected data were analyzed using the following statistical methods:

1. percentage, mean, standard
2. deviation, Kruskal-Wallis Test
3. , and Mann-Whitney U Test.

These statistical treatments enabled the researcher to draw meaningful conclusions about the perceived effects of coffee consumption on the student's academic and cognitive experiences.

Results and Discussion

This part presents the findings of the study on coffee consumption and its perceived effects on the study habits of higher education students at Cavite State University Imus Campus.

The demographic profile of the 208 participants shows that 44.23% are male and 55.77% are female. Age-wise, 46.15% are 17 to 20 years old, 48.07% are 21 to 24 years old, and 5.77% are 25 years and older. The distribution across year levels shows that 28.85% are in the 1st year, 32.69% are in the 2nd year, 26.44% are in the 3rd year, and 12.02% are in the 4th year. When it comes to the degree programs, the majority are enrolled in BSIT (24.52%), followed by BSBA (18.75%), and BSCS (12.50%), with the smallest representation from BA-JOURN (1.44%).

Table 1. Profile of the respondents in terms of their sex, age, year level, and degree program

Profile		Frequency N=208	Percentage
Sex			
	Male	92	44.23%
	Female	**116**	**55.77%**
Age			
	17 to 20 years old	96	46.15%
	21 to 24 years old	**100**	**48.07%**
	25 years old above	12	5.77%
Year Level			
	1st Year	60	28.85%
	2nd Year	**68**	**32.69%**
	3rd Year	55	26.44%
	4th Year	25	12.02%
Degree Program			
	BSBA	39	18.75%
	BSHM	18	8.65%
	BSOA	12	5.77%
	BSIT	**51**	**24.52%**
	BSCS	26	12.50%
	BAJOURN	3	1.44%
	BSEduc	15	7.21%
	BSPSYCH	20	9.62%
	BSENT	24	11.54%
TOTAL		**208**	**100%**

Table 2. Frequency and percentage distribution on the level of coffee consumption of the respondents in terms of frequency, number of cups, and types.

Indicators of Coffee Consumption	Frequency	Percentage
# of Cups on a daily basis		
1	119	57.21%
2	58	27.88%
3	25	12.02%
4+	6	2.88%
Frequency of drinking coffee		
Daily	159	76.44%
2- 3 times a week	33	15.87%
Monthly	16	7.69%
Coffee Type Based on Temperature		
Hot Brew (Espresso- Based, Brewed Coffee, Specialty Hot Drinks)	49	23.56%
Cold Brew (Iced Coffees, Cold Brew Beverages, Specialty Iced Drinks, Bottled Ready to Drink Coffee)	40	19.23%
Both	119	57.21%
TOTAL	**208**	**100%**

The coffee consumption patterns among the 208 participants indicate that a majority (57.21%) consume one cup of coffee daily, while 27.88% drink two cups, 12.02% consume three cups, and 2.88% drink four or more cups daily. In terms of frequency, 76.44% of participants drink coffee daily, 15.87% drink coffee 2-3 times a week, and 7.69% drink it monthly. Regarding coffee preferences based on temperature, 23.56% prefer hot brew coffee, 19.23% prefer cold brew, and 57.21% enjoy both types. This comprehensive overview highlights the prevalent daily coffee consumption and a significant preference for both hot and cold coffee types among the participants.

Given that these students are in the campus and coffee is available at every canteen concessionaire, the high frequency of daily coffee consumption (76.44%) suggests that drinking coffee is an integral part of students' study habits, especially while studying or reviewing for exams while in the canteen. The preference for both hot and cold coffee options (57.21% enjoy both) implies that canteens should offer a more diverse selection to accommodate various preferences and boost the effectiveness of students' study sessions. Additionally, the high daily consumption rate highlights the importance of creating a comfortable and conducive environment in canteens for studying, potentially with loyalty programs and specials aimed at supporting students during exam periods. This can enhance students' academic performance by providing them with the necessary resources to stay alert and focused.

Table 3. Weighted mean and verbal interpretation on the perceived effect of coffee consumption in terms of cognitive enhancement and academic performance

Indicators on Cognitive Enhancement and Academic Performance	Weighted Mean	Standard Deviation	Verbal Interpretation
1. I experience increased alertness whenever I consume coffee, particularly during study sessions.	2.73	0.839	Positive Effect
2. I find that consuming coffee boosts my energy levels, especially when I am engaged in studying.	3.47	0.857	Highly Positive Effect
3. I notice that drinking beverages with coffee enhances my memory, aiding in better information retention.	2.71	0.829	Positive Effect
4. I am confident that consuming coffee drinks would enhance my performance in my examinations.	2.52	0.958	Positive Effect
5. I feel uplifted in a positive vibe while I study after consuming coffee.	3.27	0.799	Highly Positive Effect
6. I am motivated to be more productive during study sessions when I consume coffee.	3.39	0.839	Highly Positive Effect
7. I believe that consuming coffee drinks contributes to enhancing my academic performance.	2.55	0.862	Positive Effect
8. I feel more engaged during class discussions after consuming coffee.	2.69	0.969	Positive Effect
9. I am confident in my study endeavors and activities due to my coffee consumption.	3.19	0.849	Positive Effect
10. I am convinced that coffee helps sharpen my thinking abilities across all my academic tasks.	2.58	0.813	Positive Effect
OVERALL MEAN	**2.81**		**OVERALL POSITIVE EFFECT**

INTERPRETATION LEGEND:

3.26- 4.00	*Always*	*Highly Positive Effect*
2.51- 3.25	*Most of the Time*	*Positive Effect*
1.76- 2.50	*Sometimes*	*Negative Effect*
1.00- 1.75	*Rarely*	*Highly Negative Effect*

The table shows that students perceive coffee consumption to have significant positive effects on certain aspects of their cognitive enhancement and academic performance. Notably, consuming coffee is seen to highly boost energy levels during study sessions (mean = 3.47, SD = 0.857), motivate productivity (mean = 3.39, SD = 0.839), and uplift mood

while studying (mean = 3.27, SD = 0.799), all categorized as having a highly positive effect. Additionally, coffee is perceived to increase alertness (mean = 2.73, SD = 0.839), enhance memory retention (mean = 2.71, SD = 0.829), improve examination performance (mean = 2.52, SD = 0.958), and sharpen thinking abilities (mean = 2.58, SD = 0.813), with these indicators receiving a positive effect interpretation.

These findings suggest that coffee is an integral part of students' study habits, contributing significantly to their cognitive functions and academic performance, especially in terms of energy, productivity, and mood enhancement. This highlights the importance of providing varied and accessible coffee options in school canteens to support student's academic endeavors. Thus, the overall mean of the perceived effects is 2.81, indicating that students generally perceive coffee consumption to have a positive effect on their cognitive enhancement and academic performance most of the time.

Table 4. Weighted mean and verbal interpretation on the perceived effect of coffee consumption in terms of dependency and withdrawal symptoms

Indicators on Dependency and Withdrawal Symptoms	Weighted Mean	Standard Deviation	Verbal Interpretation
1. I frequently feel the need to consume coffee drinks during study sessions. *	2.96	0.998	Positive Effect
2. Study sessions become more challenging whenever I abstain from coffee consumption.*	2.49	1.099	Negative Effect
3. My ability to study effectively is compromised in the absence of coffee.*	1.84	0.799	Negative Effect
4. My pace of studying slows down if I do not consume coffee*	1.81	1.061	Negative Effect
5. Drinking coffee leaves me feeling drained during study sessions and completing school tasks.*	3.12	0.92	Positive Effect
6. I experience headaches following the consumption of coffee drinks.*	1.97	0.753	Negative effect
7. Consuming coffee drinks induces my feelings of anxiety.*	3.06	0.843	Positive effect
8. My heart palpitates after consuming coffee drinks.*	2.35	0.930	Negative Effect
9. Coffee often leads me to feeling stressed, impacting my motivation to study and complete school tasks.*	2.74	0.959	Positive effect
10. I believe that reducing coffee intake would negatively affect my study performance.*	1.71	0.898	Highly Negative Effect
OVERALL MEAN	**2.40**		**NEGATIVE EFFECT**

INTERPRETATION LEGEND:

3.26- 4.00	*Always*	*Highly Positive Effect*
2.51- 3.25	*Most of the Time*	*Positive Effect*
1.76- 2.50	*Sometimes*	*Negative Effect*
1.00- 1.75	*Rarely*	*Highly Negative Effect*

* Reverse Scoring

The table shows that students perceive the dependency and withdrawal symptoms of coffee consumption to have mixed effects on their study habits. Indicators such as the need to consume coffee drinks during study sessions (mean = 2.96), feeling drained during study sessions and completing school tasks (mean = 3.12), feelings of anxiety induced by coffee (mean = 3.06), and feeling stressed which impacts motivation (mean = 2.74) suggest a positive effect most of the time. However, the overall mean of 2.40, which falls into the "Sometimes - Negative Effect" category, indicates that the negative effects, such as challenges in study sessions without coffee (mean = 2.49), compromised study effectiveness in the absence of coffee (mean = 1.84), and slowed study pace without coffee (mean = 1.81), are significant.

This mixed perception highlights the need for students to manage their coffee intake carefully to balance the positive cognitive enhancements and the potential negative withdrawal symptoms associated with coffee consumption.

Table 5. Weighted mean and verbal interpretation on the overall perceived effect of coffee consumption

Indicators n Overall Perceived Coffee Consumption Effect	Weighted Mean	Standard Deviation	Verbal Interpretation
1. I perceive coffee as essential for maintaining my study stamina and focus.	2.83	0.773	Positive Effect
2. I believe that regular caffeine consumption is necessary for me to maintain my peak cognitive performance during study sessions.	3.16	0.895	Positive Effect
3. I believe that reducing my caffeine intake would negatively affect my study performance.*	1.93	0.746	Negative Effect
4. I think that limiting my caffeine intake would lead to a decrease in my overall academic productivity.*	2.38	0.890	Negative Effect
5. I believe that reducing my caffeine consumption would result in a decline in my ability to meet academic deadlines.*	3.57	0.984	Positive Effect
OVERALL MEAN	**2.77**		**Positive Effect**

INTERPRETATION LEGEND:

3.26- 4.00	*Always*	*Highly Positive Effect*
2.51- 3.25	*Most of the Time*	*Positive Effect*
1.76- 2.50	*Sometimes*	*Negative Effect*
1.00- 1.75	*Rarely*	*Highly Negative Effect*

* Reverse Scoring

Table 5 above shows that students perceive the overall impact of coffee consumption to have mostly positive effects on their study habits and academic performance. Indicators such as perceiving coffee as essential for maintaining study stamina and focus (mean = 2.83) and believing that regular caffeine consumption is necessary to maintain peak cognitive performance during study sessions (mean = 3.16) suggest positive effects most of the time. Additionally, the belief that reducing caffeine consumption would result in a decline in the ability to meet academic deadlines (mean = 3.57) indicates a highly positive effect.

However, some indicators show negative effects, such as the belief that reducing caffeine intake would negatively affect study performance (mean = 1.93) and decrease overall academic productivity (mean = 2.38). The overall mean of 2.77 falls into the "Most of the Time - Positive Effect" category, indicating that students generally perceive coffee consumption as beneficial for their academic performance and study habits, though there are concerns about potential negative effects when caffeine intake is reduced.

Table 6. Test on significant differences of data when grouped according to profile

Profile	Kruskal Wallis H Test	P Value	Interpretation
Age	3.216	0.200	
Year Level	4.335	0.229	Not Significant at 0.05 level
Degree Program	3.673	0.885	
Profile	**Mann Whitney U Test**	**Z and P Value**	**Interpretation**
Sex	3304.5	-1.776 0.076	Not Significant at 0.05 level

Table 6 presents that the p-value of 0.200 indicates that there is no significant difference in the perceived effects of coffee consumption based on age groups. Seemingly, the p-value of 0.229 indicates that there is no significant difference in the perceived effects of coffee consumption based on year level. Whereas, the p-value of 0.885 indicates that there is no significant difference in the perceived effects of coffee consumption based on degree programs.

On the other hand, the Mann-Whitney U test was conducted to compare the perceived effects of coffee consumption between male and female students. The test yielded a U value of 3304.5 and a Z value of -1.776. The p-value associated with this test is 0.076, which is greater than the conventional significance level of 0.05. Therefore, the results are interpreted as not significant at the 0.05 level, indicating that there is no statistically significant difference in the perceived effects of coffee consumption between male and female students.

Thus, these findings suggest that none of the profile variables (age, year level, degree program, and sex) show significant differences in the perceived effects of coffee consumption

Through these findings, the following conclusions were being drawn:

1. Profile of Respondents: Majority of the respondents are female (55.77%) and aged between 21 to 24 years (48.07%). They are predominantly enrolled in the BSIT program.
2. Level of Coffee Consumption: Most students consume coffee daily (76.44%), with a preference for both hot and cold coffee types. One cup per day is the most common consumption level (57.21%).
3. Perceived Effects on Study Habits: Coffee is perceived to significantly enhance cognitive functions, energy, productivity, and mood during study sessions. However, there are mixed perceptions about dependency and withdrawal symptoms, with some negative impacts noted when coffee is not consumed.
4. Statistical Analysis: There are no significant differences in the perceived effects of coffee consumption based on age, sex, year level, or degree program.
5. Implications for Educational Administrators: The findings suggest the need for varied coffee options in campus canteens to support students' academic performance and manage their coffee consumption habits effectively.

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