

# Big Five Personality Traits and Implementation of Green Practices of the Homegrown Restaurants in Camarines Norte: A Canonical Correlation Analysis

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## ABSTRACT

The environment plays a critical role in supporting life on Earth but the rising waste management, energy, and water conservation issues pose a large threat to our environment. Since food establishments are among the largest producers of waste and users of energy and water, the study investigated whether the personality traits of the restaurant owners in Camarines Norte is a variable that affects the implementation of green practices in the operation of their restaurants using Canonical Correlation Analysis. The data were collected from thirty-four (34) restaurant owners from the province through survey questionnaires and interviews. Data from the questionnaires were tabulated and analyzed using descriptive statistics (Frequency Count, Percentage, Ranking, and Mean) and inferential statistics (Canonical Correlation Analysis).

The study revealed that conscientiousness and agreeableness were the restaurant owners' most prominent personality traits. Restaurant owners, in general, often implement waste management, energy efficiency, and water conservation practices. The Canonical Correlation Analysis produced three canonical roots with the first two as the ones with the significant results. Results of the first canonical root imply that restaurant owners who are highly extroverted, very open-minded, conscientious, emotionally stable, and moderately agreeable highly implement water conservation practices. In the second canonical root, it inferred that restaurant owners who are highly agreeable and conscientious with moderately open minds highly implement waste management practices and only moderately implement energy and water conservation practices.

**Keywords:** Personality Traits, Green Practices, Waste Management, Water Conservation, Energy Efficiency

## INTRODUCTION

Waste is an important national and global issue. The growing volumes of waste being generated rise as the global population and standard of living also rise. According to the report, waste generated globally will grow from 2.3 billion tonnes in 2023 to 3.8 billion tonnes in 2050 (UN Environment Programme, 2024). On the national scene, the Philippines is among the largest producers of solid waste annually among Southeast Asian countries where food was the largest component based on the 2018 data (Romero, 2020). It stated that approximately seventy-nine percent of plastic wastes are classified as food packaging, followed by wastes produced by households and wastes coming from personal care products. Back then, in an attempt to transform the country into a zero-waste country, Republic Act No. 9003, which is known as the Ecological Solid Waste Management Act of 2000, was passed into law.

Similarly, the Bicol region accumulated 443,807 metric tons of solid waste in 2020 as projected by the Philippine Statistics Authority. This has been a partial contributor to numerous problems confronting the Bicol River and other bodies of water in the region. These problems include congestion of waterways, solid and liquid waste polluting the water, fish kills and declining fish catch, and siltation among others. This worsening waste management problem prompted various researchers from different parts of the country to conduct studies that involve sustainable development strategies for restaurants in Cabanatuan City (Garcia et al., 2021), identification of the improper disposal of cooking oil wastes in restaurants as a possible environmental hazard (Balaria et al., 2021), examination of the food service administrator's waste management practices among canteen operators in Isabela (Antalan & Tungpalan, 2020), and determination of the types of waste, waste

disposal procedures, and the problems they experienced regarding the procedures used among hotels, lodging houses, and restaurants in Puerto Princesa City (Acero, 2020),

These mismanaged wastes have a domino effect on the environment as the bodies of water are drowning in various types of toxic wastes and other pollutants. W. H. Auden, a British poet, once noted “Thousands have lived without love, not one without water.” Still, despite knowing that water is essential, people still dispose of eighty percent of untreated wastewater back into the environment, causing pollution to water resources. Wastewater from diners and restaurants is usually higher than the wastewater coming from households. The high oil and grease contents of these were high in biochemical oxygen demand. These also cause problems in sewage disposal systems and similarly, the public sewer systems. One study found that the majority of restaurants and eateries in the Philippines are not aware of how to dispose liquid wastes properly (Balaria et al., 2021).

Aside from water consumption, restaurants also consume electricity needed for the kitchen tools and equipment necessary for their operations. This can lead to higher energy consumption and high utility expenses. Studies found that the kitchen area is the biggest user of energy. Cooking food and its storage are the leading energy-using activities in a restaurant. The issues related to energy use are also included in the most essential grueling challenges encountered by the world these days. Providing enough energy requires key advances in the supply of energy and efficient use to meet the demands of the growing population. With swelling global population and continuous industrialization in developing nations, people’s need for energy has reached unprecedented levels. In the Philippines, about 106.12 thousand gigawatt hours compose the total energy consumption in 2021 which is consistently increasing over the last ten years. An increase in the carbon footprint is considered the biggest effect of using too much energy. It refers to the quantity of carbon dioxide and its other compounds released in the air. As a result, climate change will probably occur which can further lead to extreme weather leading to floods, forest fires, and drought.

Green practices and other sustainable actions of restaurants are the results of decisions made by owners of an enterprise. There are considerable pieces of evidence that human personality is associated with performance such as how servant leadership (Khan et al., 2021) and risk aversion (Ahmed et al. 2020) affect entrepreneurial intentions. Literature has also shown the impact of the Big Five Personality Traits on the intention of entrepreneurs (Bazkiaei, 2020) and how entrepreneurial personality affects strategic decision-making and the quality of decisions.

Many studies emphasized the waste management practices of restaurants and fast-food chains in the Philippines. Studies concerning water consumption and energy usage particularly in restaurants and other food establishments were scarcely published. Previous studies correlated the Big Five Personality Traits theory to entrepreneurial intentions, which are broadly an inclination to business and becoming an entrepreneur, and pro-environmental concerns which are a broad concept. No study has been conducted yet correlating these practices with personality traits particularly using canonical correlation analysis which is why this paper intends to form a connection between the personality traits of the owners and the green practices that their restaurants implement.

## METHODOLOGY

### Participants

The data gathering was conducted in the province of Camarines Norte, Bicol, Philippines. The following criteria were used in choosing the participants of this study: (1) the restaurant must be a family-owned and homegrown business in Camarines Norte; (2) with at least three years of existence; and (3) must be registered in their respective Local Government Units (LGUs). The majority of the respondents were from the town capital and the first-class municipalities of the province.

### Measures

The construct of personality traits adopted the Big Five theory which is measured using its five dimensions:

extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience. A five-point scale was used to measure the indicators of personality traits. Then, the weighted mean was the tool that analyzed the personality traits of the managing owners. Mean was also the tool for green practices. A five-point scale was used to determine the average responses to the indicators and the equivalent weights are the following: 1-1.80 – never; 1.81-2.60 – rarely; 2.61-3.40 – sometimes; 3.41 – 4.20 often; and 4.21 – 5.0 – always. The ranking was also used to measure the order of priority in terms of implementation of specific green restaurant practices.

The hypothesis was tested using the Canonical Correlation Analysis (CCA). This is a multivariate analysis of correlation and analysis that tests relationships among more than one dependent variable and more than one independent variable. Using MANOVA in SPSS, it identified and measured the associations among the two sets of multivariate variables where the first set is the five personality traits of restaurant owners and the second set is the three categories of green practices implemented by the restaurants. Using this tool, the percentage of the variances in the dependent variable that are explained by the independent variable is provided to measure the degree of relationship between the two variables.

## RESULTS

Of the 34 restaurant owners, 79.41% were highly conscientious and 67.65% were highly agreeable. These two traits were found to be high or prominent among restaurant owners out of the five personality traits. Conscientiousness has a mean score of 4.06 and agreeableness has a mean score of 3.99. The other three traits were found to be moderately possessed by the restaurant owners. Among the 34 restaurant owners, 67.65% were moderately stable in terms of emotions, 64.71% were moderately open, and 58.82% were moderately extrovert. Openness has a mean score of 3.65, extraversion has a mean score of 3.24, and neuroticism has a mean score of 2.99.

**Table 1.** Personality Traits of Restaurant Owners

Personality Traits	Percentage of Respondents			Mean	Interpretation	Rank
	Low	Moderate	High			
Conscientiousness	0%	20.59%	79.41%	4.06	High	1
Agreeableness	0%	32.35%	67.65%	3.99	High	2
Openness	0%	64.71%	35.29%	3.65	Moderate	3
Extraversion	14.71%	58.82%	26.47%	3.24	Moderate	4
Neuroticism	17.65%	67.65%	14.71%	2.99	Moderate	5

Legend: 1.0-2.30 – low; 2.31-3.70 – moderate; 3.71-5.0 – high

**Table 2.** Green Practices of Homegrown Restaurants

Green Practices of Restaurants	Mean	Interpretation	Rank
Energy Efficiency Practices	4.38	A	1
Waste Management Practices	4.37	A	2
Water Conservation Practices	3.77	O	3
<b>Mean</b>	<b>4.17</b>	<b>O</b>	

Legend: 1.0-1.80 – Never; 1.81-2.60 – Rarely; 2.61-3.40 – Sometimes; 3.41-4.20 – Often; 4.21-5.0 – Always

The results show that both energy efficiency and waste management practices were always implemented by the homegrown restaurants in Camarines Norte. On the other hand, water conservation practices were often practiced by the restaurant owners.

**Table 3.** The Standardized Canonical Correlation Coefficients, Canonical Loadings, Cross Loadings, Percent Variance, and Redundancy Among Personality Traits and Green Practices

	Negative Correlation between the Big Five Personality Traits and Water Conservation Practices (Root 1)			Relationship between the Big Five Personality Traits and Green Practices (Root 2)			Relationship between the Big Five Personality Traits and Green Practices (Root 3)		
	SCC	CL	CrL	SCC	CL	CrL	SCC	CL	CrL
<b>Personality set</b>									
Extraversion	-.493	-.787	-.494	-.112	.006	.003	-.040	.211	.035
Agreeableness	.276	-.304	-.191	.781	.797	.436	.908	.354	.059
Conscientiousness	-.051	-.446	-.280	.558	.666	.365	-1.250	-.532	-.089
Neuroticism	-.292	-.493	-.309	-.556	-.101	-.056	.054	-.100	-.017
Openness	-.641	-.825	-.518	-.151	.332	.182	.347	.079	.013
Percent Variance	.367			.24			.094		
Redundancy	.144			.072			.003		
<b>Green Practices set</b>									
Waste Management	-.653	-.119	-.074	.869	.987	.540	.606	.107	.018
Energy Efficiency	.135	.118	.074	.143	.626	.343	-1.161	-.771	-.129
Water Conservation	1.080	.840	.527	.103	.519	.284	.24	.161	.027
Percent Variance	.244			.545			.211		
Redundancy	.096			.163			.006		
Canonical Correlation	.627			.547			.167		

Note: SCCC – Standardized Canonical Correlation Coefficient; CL – Canonical Loadings; CrL – Cross Loadings

Since this research contains three green practices and five personality traits, SPSS extracted three canonical roots or variates. The first test of significance tests all three canonical roots of significance ( $F = 1.812$   $p < .05$ ). The second test excludes the first root and the last test only tests the root three by itself. It shows that of the three possible roots, only the first root is significant with  $p < .05$ . Each canonical root was interpreted and discussed further in the following figures.

The first canonical correlation between the Big Five Personality Traits and the green practices was found to be .627 (47% shared variability); the second canonical correlation was .547 (31% shared variability), and the third canonical correlation was .167 (0.2% shared variability). The first canonical variable accounted for 36.7% of the variability in the personality traits set and 24.4% of the variability in the green practices set. The second canonical variable accounted for 24% of the variability in the personality traits set and 54.5% of the variability in the green practices set. In short, the total amount of variability and redundancies in all three canonical variables showed that canonical variables are related. That is, the personality traits of restaurant owners and the implementation of green practices are significantly related.

In the first canonical root, the personality traits set are positively correlated with the green practices as indicated by the .627 canonical correlation between the two canonical variates. All variables in the personality traits were loaded higher than .30, and only the water conservation in the green practices set was loaded higher than .30. Extroversion and openness are strong predictors of water conservation practices with both having a canonical loading that is more than 0.70. Conscientiousness and Neuroticism, on the other hand, are also substantial predictors of water conservation practices with a canonical loading that falls within 0.50 to 0.69. Lastly, agreeableness was also a predictor of water conservation practices although to a lesser extent only with a canonical loading value between 0.30 to 0.49. Possession of these traits strongly affect the implementation of water conservation as one canonical variable as shown in the canonical loading of .840. Therefore, restaurant owners who are highly extroverted, very open-minded, conscientious, emotionally stable, and moderately agreeable will highly implement water conservation practices.

In the second canonical root, only agreeableness, conscientiousness, and openness were loaded with more than 0.30 in the personality traits set and all variables under the green practices set were loaded with coefficients higher than 0.30. Results show agreeableness and conscientiousness traits are both strong predictors of green practices as shown in the value canonical loading which is .797 and .666, respectively, while openness is only a predictor but to a lesser extent with a canonical loading of .332. It can also be inferred that among the green practices, waste management was highly implemented by restaurant owners who are highly agreeable, highly conscientious, and moderately open-minded as shown by the canonical loading of .987. Results also show that with the same set of personality traits, restaurant owners also implement energy efficiency and water conservation practices but not to the same extent with waste management.

## DISCUSSION

### On Personality Traits of Restaurant Owners

Conscientiousness is a trait that is manifested by being careful or diligent. Further, it implies an individual's desire to perform a task well and to seriously take the obligations he or she has toward other people. Moreover, conscientious people are aware of their environment. The results showing restaurant owners' high score for conscientiousness means that they are more conscious of their actions and the consequence of their behavior. Their conscience is what leads them to do the right thing and to follow the rules involving green practices (Carnevale & Clause, 2021; Cherry, 2022). In addition, restaurant owners feel a sense of responsibility towards their employees, customers, suppliers, and other stakeholders by following socially prescribed norms (Guedez, 2021; Theodore, 2022). This high score also indicates that they are highly responsible (Gordon, 2022), highly disciplined (Carnevale & Clause, 2021), and highly organized (Gordon, 2022; Owens, 2021). These sub traits guided conscientious restaurant owners to behave in socially acceptable ways in the operations of their restaurants and in society as a whole.

Agreeableness, on the other hand, is a personality trait manifested by a person's ability to prioritize other people's needs before their own. Agreeable people are helpful, collaborative, and tactful. The restaurant owners' high score on agreeableness shows how they relate with their stakeholders particularly the customers, community, and the environment by often following protocols, rules, guidelines, and laws imposed by various governing agencies and institutions. This also means they have high aspirations for growth and motivation to care and be concerned about other people by always managing their wastes properly. Moreover, their contentment and ability to adjust to situations make it easier for them to accept changes, particularly involving environmental regulations, thereby being flexible when necessary. Further, it shows that restaurant owners are



highly cooperative (Hamilton & Clause, 2022; Thill, 2020), helpful (Pappas & Biggs, 2021), and sympathetic (Hamilton & Clause, 2022; Lim, 2020) as evidenced by the level of their implementation of green practices.

Openness is a trait also known as intellect or openness to experience. The moderate score on the trait of openness indicates the level of open-mindedness a restaurant owner possesses. They moderately accept new ideas (Pappas & Biggs, 2021) and are careful to experiment with new things (Sutton, 2021; Peterson, 2020). This means that they do routine tasks and stick with some traditional practices while trying some new techniques but maintaining their positions in the safe zone. In terms of green practices, they implement environment-friendly practices that are easy to do such as reusing items and keeping waste bins outside the kitchen. In other words, they are moderately taking risks and consider things before they do something unfamiliar to them. It is important among restaurant owners particularly when they are being thoughtful or reflective about what they encounter in everyday life and how it impacts other people and their environment.

Parallel to this, restaurant owners also scored moderately on extraversion which can be interpreted as being in the middle of an extrovert and introvert personality. Extraversion indicates how social and outgoing a person is. From the findings of the study, restaurant owners fell under ambiverts. They are not extroverts nor introverts and instead, fall in between. They may socialize at times but prefer alone time during other times. Extraversion is not necessarily required among restaurant owners because this position is focused more on working independently and alone. They may not need other people or outside sources for ideas and inspiration. Majority of the restaurant owners are not afraid of social situations but they prefer spending time balancing the outer world of people and their inner world of ideas (Houston, 2019; Laurretta, 2022; Theodore, 2022; Lim, 2022). They are flexible which means they are comfortable being with people but not to the point that they are the center of attention in social gatherings (Denomme & Lombardo, 2022; Lukaszewski, 2020; Laurretta, 2022; Cherry, 2022). There are also times when they prefer to keep their emotions private and are more comfortable working on their own (Foley, 2021; Cherry, 2022).

Finally, restaurant owners scored moderately on neuroticism. This trait is characterized by negative emotions such as sadness and moodiness. Managing a restaurant may be stressful at times and requires full attention and focus from the restaurant owners or managers. The moderate result indicates that restaurant owners are able to control their feelings and are resilient. This also means that restaurant owners also feel worried, upset, or stressed at times but they are able to calm themselves down or stabilize their emotions (Clause, 2022). Further, they can respond positively to environmental stress, are content and stable, and can handle everyday situations (Powell Key, 2021). Since they are emotionally stable, they have the ability to focus on goals, therefore, giving them satisfaction and motivation in life (Shafir, 2022; Tzeses, 2021). A healthy dose of this trait is a good thing for restaurant owners because they can live happier and more adaptive lives (Henriques, 2021).

## **Green Practices of Restaurants**

Energy-efficient practices got the highest mean result from the answers of the respondents. In Camarines Norte, the prevailing power rate is P16.67 as of this writing which is very high compared to the P10.12 rate last December 2020. The increase in power rate has led households and establishments to save power usage as much as they can. Based on the results, restaurant owners always implement turning off appliances and air conditioning units when there are no customers. As a result of climate change, various establishments, and households purchase air conditioners in response to heat (Randazzo, et al., 2020). On average, an air-conditioning unit can use about 3,000 watts of electricity an hour or 72,000 watts of electricity per day. In households, 35%-42% were added to their electricity bills when they adopt air conditioning (Randazzo, et. al., 2020). All three key informants confirmed that the reason why they turn off air conditioning units or appliances when there are no customers is to save energy consumption as much as possible.

On the other hand, electricity and power generated from different sources like solar and wind power systems are rarely used. The key informants also mentioned that they cannot afford to buy these alternative sources of energy due to a lack of capital. This is similar to the findings of the research conducted by Garcia, et al (2021) where making use of other forms of alternative energy like solar panels was never implemented as a sustainable development strategy in restaurants in Cabanatuan City. One of the most challenging sustainable practices is investing in alternative energy resources like solar and wind power (Fantozzi, 2021) because

implementing these initiatives is capital intensive. In the Philippines, the cost of a solar panel system ranges from P160,000 to P900,000. A handful of restaurants were able to afford the cost like Max's Restaurant in Santiago City and Sucat, which is now solar powered, Riverside Boardwalk in Iloilo City, McDonald's Green and Good Store in Shaw Boulevard Wack Wack, and Megawatt, a Texas-Mexican dining within a carwash in Quezon City. It is evident that the restaurants that can afford an investment in alternative sources of energy are those that are under franchise or with financial capability. Although the price of solar power systems decreases every year, it is still unaffordable for homegrown restaurant owners. This just strengthens the idea that restaurants' technological readiness is the most challenging factor that influences the implementation of green practices (Yusoff, et. al, 2022).

In the matter of waste management practices, restaurants always implement the majority of them. To be specific, restaurant owners always implement keeping waste containers outside the kitchen because it is the easiest practice and a practice that does not need mandates or rules. Even without strict guidelines coming from the government, common sense will dictate the restaurant owners to do so in order to maintain the cleanliness of the restaurant and ensure the safety of the customers. The provision of separate bins for various types of waste on the restaurant premises is also implemented at all times because this is strictly required by the local government units in accordance with the Solid Waste Management Act of 2000 (RA 9003). Key informants confirmed that they always provide separate bins in their restaurants as part of their compliance with Republic Act No. 9003. In some towns like Daet and Labo, waste will not be collected by the garbage collectors if these are not segregated.

Although the majority of the waste management practices were always implemented by the restaurants, there are still some that require attention. The practice that is rarely implemented is the provision of a compost pit for fruit and vegetable scraps. One reason for this is that restaurants are located at the heart of the town where there is no available areas for compost pits. In addition, managing composts requires proper knowledge and training. To support this, Someck (2021) stated that composting is disregarded by restaurants because they find it a struggle. It requires more staff time and more expense on the part of the owners and the employees. It is labor-intensive because the compost pit requires proper maintenance and monitoring. If not properly monitored, problems such as too much wetness, too much acidity, too much dryness, and smelly compost bins will affect the operations of these restaurants (Novara, 2020). Finally, there must be a space that can be used for this purpose wherein restaurants, maximize their space for the dining area and parking lot.

The overall also results show that water conservation practices were often implemented by restaurants. In Camarines Norte, water supply is not yet felt as a major problem since the province has an ample supply, especially during the rainy season. The water is supplied by Boro- Boro Spring in Tulay na Lupa, Labo, Camarines Norte which is a nature preserve, and by the springs of San Lorenzo Ruiz town. With that, restaurant owners are taking advantage of the fact that water is readily available and therefore maximizes its usage. Key informants told the researcher that since their business is restaurants, they need to consume a lot of water but they still conserve as much as they can. One of their reasons is that they have to ensure the cleanliness of the kitchen materials, supplies, tools, and equipment, and the restaurant premises.

The results of the research paper conducted by Lee, et al., (2020) also indicated that restaurants must improve green aspects of water conservation. The water conservation practice that most restaurant owners always implement includes cleaning floor areas using a mop and water bucket. One of the informants also said during the interview that they cleaned the floor using the same tools, particularly the 360-rotating mop. This practice conserves water because compared to hoses which can pour 6 to 24 gallons of water per minute, mopping can just consume the amount of water needed by filling a bucket which also minimizes wastewater (Saunders, 2017; News18, 2019; Churchill, 2020). The same conservation practice was performed by Leslie's Terrace, Garden, and Restaurant where they mop or sweep the floor when cleaning. Another practice that is always implemented is the regular inspection of leaks because water leaks are a commonly dreaded problem not only among households but also among business establishments. Unchecked water leaks lead to increased water bills. The pipeline leakage problem is a serious and very challenging issue and solving this saves establishments a lot of money and resources.

On the other hand, serving water in glasses got a low result. In many restaurants in the Philippines, service

water is a basic provision and is at times the first thing served before customers even make an order. This was also attested by the key informants. All of them serve water using a pitcher and not in separate glasses. Since the Philippines is a member state of the United Nations which recognizes access to water and sanitation as a basic human right, restaurants feel the need to serve water in a pitcher. Despite water conservation tips given by Metropolitan Waterworks and Sewerage System (2022), which include giving only the right amount of water to customers who request water, the majority of the homegrown restaurants in Camarines Norte still serve water in pitchers. This is so because it is already a common practice in restaurants within the province. In addition, the key informants pointed out the hassle on the part of the service crews to keep coming back to a specific table when serving water in glasses instead of pitchers. The lowest score was attributed to using paper or native plates. One of the main reasons why restaurants use white ceramic plates is because they are the cheapest, provide good contrast between food colors, provide a more attractive appearance, and are easier to clean. This results in a need for dishwashing equipment to decrease the amount of water usage. In the Philippines, purchasing a dishwasher is considered a luxury (ANCX, 2021).

### **Canonical Correlation Analysis Between Personality Traits and Green Practices**

The results of the first canonical root imply that the traits of extroversion and openness have a strong impact on how restaurant owners conserve water resources. Restaurant owners who are highly extroverted are full of warmth and are expressive. They have this tendency to initiate comfortable relationships with other people. With these positive traits, following orders or social norms are essential for these types of people which can be manifested by conserving water or protecting the environment. A very open mind is among the most essential quality or traits of individuals for them to practice something that is uncommon or difficult to do. Restaurant owners who are open-minded to a higher extent will surely be mindful of the level of their water consumption and therefore implement water conservation practices. Conscientiousness and emotional stability, on the other hand, are the most obvious trait that affects the implementation of water conservation practices. A restaurant owner who is conscientious and emotionally stable will think of possible ways to reduce the restaurant's negative impact on the environment. Lastly, even a moderate level of agreeableness trait, if possessed by a restaurant owner will prompt him or her to conserve water resources.

This is supported by the studies conducted by Chapman and Hottenrott (2022) who found that overall personality counts when starting ventures offering greener products and is also a significant predictor of actual environmental behavior (Alcorn, 2018). Another explanation is that in the province of Camarines Norte, the water supply is most of the time stable. Only the elevated areas experience low-to-no-water supply and during summer only. It only means that necessity breeds innovation or simply put, restaurant owners will not act until they are negatively affected.

The results of the second canonical show that both agreeableness and conscientiousness traits are both strong predictors of green practices while openness is only a predictor but to a lesser extent. This can be because being agreeable means putting others' needs before their own and being conscientious means taking obligations to others seriously (Cherry, 2022). Individuals who possess conscientiousness traits are self-disciplined and aware (Cherry, 2022). Their being conscientious alone will prompt them to practice green practices simultaneously. With regard to openness, being moderately open means they are moderately willing to embrace new things and fresh ideas. Even with moderately open minds, if the restaurant owners highly possess agreeableness and conscientiousness traits, they will put their customers' needs before they think of their profit and will implement waste management, energy usage, and water conservation practices considering their positive impact on the restaurant operation, customers, and the environment.

Recent studies also showed that the agreeableness personality trait is positively associated with sustainable social responsibility (Anwar & Claus, 2021), and environmental concern. Studies also showed that conscientiousness has a positive relationship with sustainable social responsibility (Anwar & Claus, 2021). The same results were found by Anwar & Claus (2021) who found that being open indirectly contributes to sustainable social responsibility.

For future researchers, it is recommended that they conduct further studies to better discriminate the unique aspects of personality traits and green practices. Based on the explanation ratio of the shared variability of



personality traits and green practices which was only about 47 percent, there are local restaurant owners who have not yet developed environmental preferences for programs and actions more appealing to their personality characteristics. Also, a larger scope in terms of the population may be used so that the results will apply to all kinds of restaurants or specific business industries. In addition, it is necessary to confirm the reproducibility of the findings of this study by conducting follow-up tests using canonical correlation analysis thereby necessitating the need for topics and methods similarly conducted in this study.

## CONCLUSION

The management of waste, water conservation, and energy efficiency in restaurants are influenced by the five personality traits of restaurant owners to varying degrees. Enhancing conscientiousness and agreeableness among restaurant owners is crucial for significantly improving the adoption of green practices in their establishments.

## Limitations on the Research Design and Material

The study set criteria for its respondents and it led to a small number of respondents making it one of the limitations of this research. Further research may widen the scope in terms of locale and participants. Further, the data were analyzed using canonical correlation analysis. To validate the results, further research may use Regression Analysis or a similar statistical tool.

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