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Sustainable Practices and Challenges of Farm Destinations

Hermilina Ambunan Mendoza

Abstract

Tourism is one of the most significant industries worldwide. In the Philippines, farm destinations impact tourist growth that they become valuable tourism assets. As the notion of sustainable rural tourism gains ground as a viable strategy for tackling rural restructuring and agricultural degradation, the role of stakeholders is necessary. This study assessed the degree of agreement of 128 stakeholders on sustainable practices and challenges of sustainable tourism in Mendez, Cavite, Philippines. Data gathered were analyzed using mean and standard deviation. The findings revealed that stakeholders “Strongly Agree” that farm destinations in Mendez, Cavite adopt sustainable practices on economic and environmental dimensions and “Agree” that farm destinations adopt social sustainability practices. Using recycled resources to save, promoting safety conditions, and using the waste segregation technique generated the highest degree of agreement from the stakeholders. The need to use technology and innovative farm practices to increase productivity and the establishment of a small museum necessary for cultural heritage enrichment got the lowest generated mean. Sustainability challenges to be addressed farm destinations' lack of partnership with the residents and the need for training to enhance the skills of farmworkers.

Keywords: *farm tourism, stakeholders, sustainable practices, challenges*

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1. Introduction

The establishment of farm tourism has changed the environment of agriculture industry. As per Garcia (2016), farms have developed from simple plantations to unique travel destinations. Farm destinations' impact on tourism development is significant that it becomes valuable tourism assets. Diversifying and transforming farms into a destination for tourists provided an economic and market-based perspective of the agriculture and tourism industries. Simata (2019) suggests on strengthening the agriculture and tourism link to maximize revenue and employment opportunities and realize the multiplier effects from both sectors.

About two decades ago, agri-tourism in the Philippines emanated in La Trinidad, Benguet (Tugade, 2020). Through the years, farm tourism has grown and become accepted. Today, farm tourism is one of the most productive agricultural businesses in the Philippines. The country is now among the top agri-tourism destinations in the world. According to Rose H. Libongco of the Hotel Sales and Marketing Association International (HSMA), the foreign visitor arrivals to the country grew 10.24 % (Daval, 2019). As per Santiano (2018), inbound visitors rose by 11% to 6.62 million, with domestic tourism accounting for 96,720,627 trips in 2017.

In the province of Cavite, the economy in upland area is primarily dependent on agriculture. Despite urbanization and industrialization, many residents in Cavite continue to work in agriculture. For decades, agriculture has become the dominant and driving power of rural economies, providing farmers with their primary source of income. Captured with the potential of farm tourism, the establishment of farm tourism destinations in Mendez, a small town in Cavite has emerged. Mendez has a land composition blessed with natural wonders making it a perfect place for a memorable farm tourism experience. Although tourism has evolved as one of the most lucrative industries, it was criticized for its unsustainable practices, particularly regarding the environment and population exploitation. Farm destinations need to focus the strategies on the triple bottom line; economic, social, and environmental sustainability. When farm operations are managed sustainably, they can help protect watersheds, conserve key ecosystems, and enhance soil health and water quality. Unsustainable techniques, on the other hand, have serious consequences for both people and the environment.

The impact of tourism to the environment and community, specifically on agri-tourism structures has caused a significant research interest (Coica et al., 2018). Yet, there is a dearth of local literature on the sustainability of farms in the province of Cavite (Notorio et al., 2016). This

paper fulfills this gap and adds to the body of knowledge. The study aims to determine the sustainable practices and identifies the challenges of sustainable farm destinations in Mendez, Cavite based on stakeholders' perspectives.

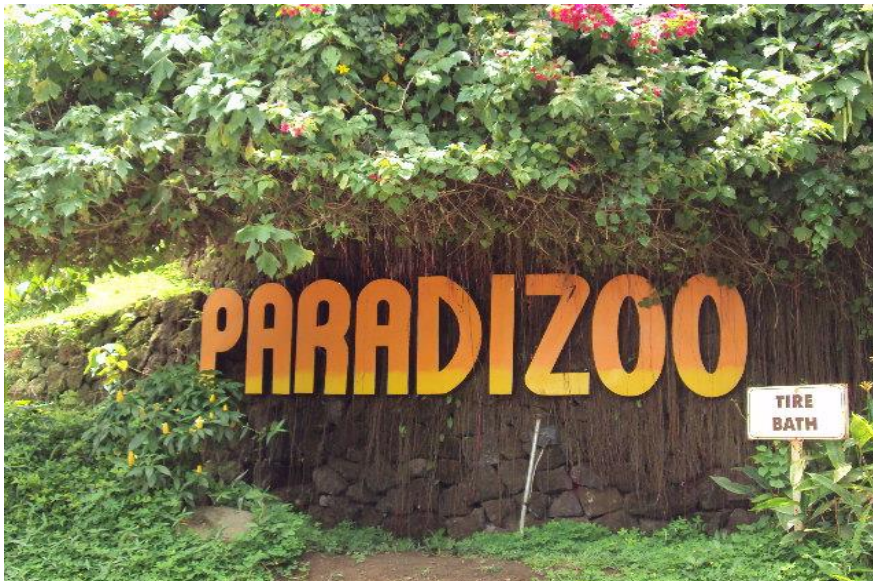
2. Literature Review

2.1 Farm Destinations in Mendez, Cavite

Mendez, Cavite is a fourth-class municipality in upland Cavite with a gross agricultural land area of 1,170.40 hectares in 2019, accounting for 70% of the total land area (Cavite Ecological Profile 2019). It is mainly an agriculture municipality with crops such as pineapple, rice, vegetables, fruits, root crops, coffee, and coconut. Currently, Mendez, Cavite has five farm destinations; Paradizoo, Yoki's farm, Mendez Organic Farm, Enchante Farm, and Women and Ecology Wellness farm. Being rich in natural resources, crops and the natural resources are the main attractions of the farm destinations, all set up to offer leisure activities.

Figure 1

Paradizoo Farm in Mendez



Paradizoo is a ten-hectare theme farm in Panungyan, Mendez, Cavite (Figure 1). It is a combination of a zoo and theme park that offers a variety of educational, outdoor, and group outing

programs for nature, flowers, and animal lovers (zoomanity, n.d.). Paradizoo has different attractions like a vegetable garden, flower garden, meditation garden, eclectic garden, farm frenzy, orchid pavilion, pet cemetery, honey bee farm, butterfly farm, goat house, wedding pavilion, and bromeliad pavilion. Natural resources are the main attractor of the farm destination on which tourists can experience and enjoy the scenery and feel its ambiance. Similarly, leisure attractions are the additional features that farm offers for tourist fun and enjoyment. The farm also offers real farm educational opportunities and experiences and activities for team building. The farm offers foods and transportation services to the guests.

Figure 2

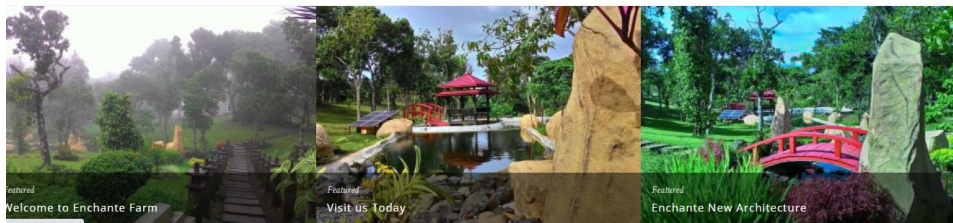
Yoki's Farm in Mendez, Cavite



Yoki's Farm (Figure 2), situated in Palocpoc, Mendez, Cavite opened in 1996. The farm offers crop and natural attractors like an orchidarium, hydroponics farm. There is a small museum with display models of traditional agricultural implements and collections like relics. The farm also has an animal sanctuary. Tourists have a closer and more meaningful encounter with the animals. It has animals and pets of different kinds. Children take care of pets like goats, sheep, chickens, ducks, geese, rabbits, and many more on which they can feed. Eco-tourism efforts raise awareness among tourists about safeguarding animals and their habitats (Yokis Farm, n.d).

Figure 3*Training conducted at Mendez Organic Farm*

Mendez Organic farm is a training center for small integrated organic farming technology. It is located in barangay Banayad, Mendez, Cavite. The farm owner is Mr. Levi Perez, a retired agriculture researcher. One of the farm activities is to educate the tourists and conduct training on farming techniques (Figure 3). It allows tourists to harvest the plants. Most crop art on the farm consists of various designs of horticultural and grain crops. Tourists can enjoy nature and experience farm relaxation. It offers many amenities like resort, educational attractors, and an animal habitat. The farm has accommodation and support resources like mobile communication, restroom, water and electricity, informational signage, and facilities for disabled guests.

Figure 4*The Enchante Farm Attractors*

Enchante Farm in Palocpoc, Mendez, Cavite is known for its beautiful garden. The farm has accommodation for tourists, resort and a fishing site. The farm conference and banquet

facilities are available for hire. Guests can use karaoke, which offers a large selection of popular songs on its playlist. Guests arriving by automobile appreciate the parking area (planetofhotels.com).

Figure 5

Farm Building at Women and Ecology Wholeness farm

Women and Ecology Wholeness Farm Mendez Cavite



The Women and Ecology Wholeness Farm, or Ecofarm is a 1.2-hectare fruit and coffee orchard in Mendez, Cavite, established in 1997 (St. Scholastica's College, n.d.). It is an environmentally responsible farm, junk-free, and with a sustainable lifestyle. It has a building (Figure 5) that utilizes organic, bio-diverse farm technique, and biogas-based waste management. Farming is organic, with compost made from the farm's waste and garbage from local houses that have joined the cause of sustainable, environmentally friendly waste management. The farm has a mushroom house and a butterfly sanctuary.

2.2 Sustainable Tourism

Sustainability as per the United Nations Brundtland Commission in 1987 is “*meeting the needs of the present without compromising the ability of future generations to meet their own needs.*” Sustainability creates opportunities for the social, economic, natural, and cultural environments of the place (Ahmed, 2016). The UN (2015) formulated the Sustainable Development Goals (SDGs), which set development objectives from 2015 to 2030, emphasizing the Brundtland Report's importance to global development strategy. Sustainable development in its three aspects (economic, social, and environmental) is committed towards a balanced and integrated manner to achieve sustainable goals (Le, 2016).

Sustainable tourism provides benefits to the environment, community, and the economy. Tourism is a massive part of our global culture, permitting us to discover different parts of the world, meet human beings from distinctive walks of life, and experience new traditions and activities. The goal of sustainable tourism is to extend the benefits and diminish the negative impacts of tourism to a destination. Sustainable Tourism is “*a way of travel that, while it offers a unique and amazing experience to the traveler and connects people, it also protects our best assets, nature, culture, communities, history, and planet*” (Guevarra, 2019). For the United Nations World Tourism Organization (UNWTO), sustainable tourism leads to the management of all areas, including the economic, social, and environmental needs integrated with the culture, ecological processes, biodiversity, and support the development of societies.

2.3 Farm Destinations Sustainable Practices

Sustainability is a popular term that has become a buzzword for green business practices embedded in many corporate strategies (Lotich, 2019). Farm destination has to apply an innovation and diversify strategy to sustain. Zickefoose (2016) stated that farm destinations have to increase resource pool in finding new and innovative ways to tackle sustainability issues.

2.3.1. Economic dimension of sustainable practices

Increasing competitive pressure has led to explore the feasibility of complementary economic strategies for getting business initiatives. Farm destinations need to find new ways to stay on top of trends and create differentiation. Adopting appropriate approaches and practices is necessary to sustain. The practices identified by traditional agricultural and tourism initiatives had

paved the way for economic development through job creation, increase business opportunities and community development (Simata, 2019). Farm destinations play a relevant role in sustainable development of rural areas because of growth and the substantial contribution to the economies of many nations and local destinations. The National Agriculture Law Center report that farm tourism presents unique opportunity to combine tourism and agribusiness to provide financial, educational, and social benefits to sightseers, producers, and communities. The establishment of farm destinations can help increase the local taxes, educational opportunities, land preservation, and development of business endeavors.

As per Lou et al. (2016), farm tourism contributes to economic development like foreign currency earnings, attracting international investment, rising tax revenues, and generating new job. In the Philippines, establishment of farm destinations assist local farmers in diversifying and supplementing their agricultural income (Simeon, 2016). In addition, at Phu Ruea at Northern Thailand, Choenkwan et al. (2016) found that farm tourism created many employment opportunities for local people. Yet, according to Ammirato et al. (2020), the consequences of continuous economic growth (i.e., high social costs, indiscriminate use of natural resources, widespread pollution, and so on) have led to a consensus that current development paths are no longer sustainable and that radical changes are required.

2.3.2. Social dimension of sustainable practices

When people or nations come together to improve the welfare of everyone, they form a social pillar. Tatcher (2015) affirmed that the social sustainability encapsulates social equity, social cohesion, cultural knowledge, regional diversity, social institutions and communities, wellbeing and living conditions, recreational opportunities, educational achievement, a child-friendly environment, and social solidarity.

Community and destinations can be conversely affected by farm activities. According to Roberts and Tribe (2008) and Mason (2003), cited in Raderbauer (2011), socio-cultural sustainability is concerned with social interactions, behavioural patterns, and values of the people. Related studies revealed tourists' visitations bring economic, social, and cultural impacts. In Arab countries, Zgolli and Zaiem (2017) found that the responsible behavior of residents creates a positive impact on the tourist's choice of destination. As stated by Cerralado et al. (2018), tourist visits to destinations improve the quality of life of the locals, create social welfare and provide social, economic, and environmental sustainability in Spain. Further, Zacal, et al. (2019) revealed

that in Bohol, Philippines agri-tourism leads to a rise in household income, a higher standard of living, and a healthier working climate for the workforce.

2.3.3. Environmental Dimension of sustainable practices

Environmental sustainability is the ability of the environment to support a defined level of environmental quality and natural resource extraction rates indefinitely (Singh, 2019). The notion of sustainability recognizes that the habitat is a finite resource, so safeguarding the environment is a critical reason for all living creatures. Salimzadeh (2016) attested that environmental sustainability is a strategic construct within the business philosophy directed towards awareness, engagement, and commitment to practices related to natural environment protection.

Practicing sustainability guarantees ethical decisions that ensure everyone has a secure and livable future. Farm destination has to be less dependent on natural and energy sources to be sustainable and be more resilient to droughts, floods, and other climate change impacts.

Raising awareness of environmental issues among tourists represents another issue of sustainable practices (Readerbauer, 2011). Teaching people how to value the environment would help increase awareness and a greater understanding of nature. It will enable people to minimize their environmental impact by making more productive use of resources and water sources, particularly in resource-scarce areas.

Many studies found that tourism can put enormous pressure on destinations like soil erosion, pollution, loss of natural habitat, endangered species pressure, and heightened vulnerability to forest fires. Yet, Barbieri et al. (2016) affirmed that farm destinations have an advantage over the environment by protecting natural resources and habitat conservation.

2.4 Challenges of Sustainable Farm

Though farm tourism opens up new revenue streams for farmers and landowners, it also raises new legal concerns. Its effect has the potential to alter the destination's overall character. Even if tourism may benefit the economy by providing employment and increasing cash flow, when the number of tourists exceeds the host destination's capacity, it can also cause social and environmental concerns. The creation of farm tourism may result in overexploitation or loss of natural resources, diminishing the pool of resources accessible to local people and future generations (Holden, 2005; Marcinek & Hunt, 2019; Ostrom & Field, 1999), as cited in Trinh (2021). Moreso, respectful engagement between hosts and visitors, local participation, and acknowledgment of the importance of traditions and culture to the tourist experience are crucial

problems for sustainable enterprises, according to Roberts and Tribe (2008) as cited in Radebauer (2011).

Llopis and Blasco (2018) stated that the tourism industry is taking creative measures to maintain growth when coping with the size and existence of global environmental problems. The proliferation and overconsumption by today's global society will ultimately lead to the complete depletion of natural resources, forcing the community and businesses to find other energy sources.

Other pressing issues of farm tourism include food waste, overall waste management, and a poor business climate. Tourists' flow can also cause congestion of the area (Adillon, 2018). Tourism interests often clash with the community, resources, and land-use policies. Coordination of various stakeholders, such as the government, tourism boards, companies, and local communities, is required for good tourism management and operations, allowing for a more balanced and integrated approach to decision-making (SolimarInt, 2018). Yadav et al. (2018) found that lack of coordination among various stakeholders and lack of government incentives are the most significant barriers to sustainable tourism in National Chambal Sanctuary (NCS), India.

Moreover, when farms are poorly managed and conditioned, cultural and natural assets of destinations can deteriorate, crime can grow, ladies and youngsters can be abused, and monetary benefits can also leak out of the economy (Weldearegay, 2017). High energy consumption, food waste, total waste management, a poor business climate (particularly in developing countries), a scarcity of trained labor, restricted access to financing, and low levels of investment are some of the other urgent issues (Pan e al., 2018).

3. Methodology

3.1. Research Design

This study determines the sustainable practices and identifies the challenges faced by the farm destinations through quantitative research method that gathers quantifiable data used in the statistical analysis of the population sample.

3.2. Participants of the Study

Given the focus of this study on the local community, the study conducted a survey of 128 stakeholders, excluding farm tourists. Residents, local businesses, the media, employees, the

government, rivals, visitors, business associations, activists, and tourism developers are all stakeholders in a tourism destination. Participation from stakeholders is necessary in determining the sustainability of farm destinations. All stakeholders must be permitted and allowed to participate in the tourism decision-making process required to bring sustainable tourism ideas into practice (Ahmed, 2016).

Table 1

Distribution of the Participants of the Study

Profiling Variable	Frequency	Percentage
Local Government Unit/Tourism and Agriculture Municipal Offices	20	16%
Residents	20	15%
Non-Government Organization (NGO)	20	16%
Business Partners (Farm Suppliers)	4	2%
Tourism Industry (Farm destinations managers and workers)	64	50%
Total	128	100%

For this study, a convenience sampling approach was chosen based on the presence or absence of the respondent at the time of data collection and their willingness to participate in the study (Saunders et al., 2007; Black, 2009) as cited in Raderbauer (2011).

This study covered the three farm destinations in Mendez, Cavite that were considered based on the years of operation to measure the sustainability. The participating stakeholders were the supply side stakeholders of the three participating farm destinations. Two farm destinations operate for five to six years, and one farm operates from seven to ten years. Two farm destinations are family corporations and one is owned by a single proprietor. One farm destination has one to two hectares area while two farms have three to five hectares land area.

3.6. Instrument

The study used a researcher-made questionnaire using a 5-point Likert scale of agreement. Based on reliability statistics, or Cronbach's alpha=.86 for the sustainability of farm tourism and Cronbach's alpha=.92 for barriers to sustainable tourism, the instrument developed has high internal consistency reliability. Following content validity, the significant correlation between indicators has high validity measures.

The instrument developed and validated is divided into three sections: profiling of the participants, evaluation of the sustainable practices, and identification of barriers to farm destinations operation. The data gathering through survey questionnaire was personally administered by the researcher.

3.8. Data Analysis

The data was analyzed using MS Excel Data Analysis Tool Pack. The mean and standard deviation were employed to analyze the degree of agreement of stakeholders.

3.5 Ethical Consideration

Participants were kept fully aware of the study endeavor and their rights through a concise description of the research goal, procedures, and expected outcomes in the permission forms. The study did not ask for personal details to secure their identity and information. Participant information page and a consent form were provided.

4. Findings and Discussion

Presented in the table 2 are the stakeholders' degree of agreement on economic, social, and environmentally sustainable practices of farm tourism in Mendez, Cavite. Results revealed that the stakeholders "Strongly Agree" on economic sustainable practices (M=4.27), "Agree" (M=3.67) on social sustainable practices, and "Strongly Agree" (M=4.36) on environmentally sustainable practices. The result implies that farm destinations in Mendez, Cavite adopt sustainable practices.

For economic sustainable practices, the table shows that the statement farm destination uses recycled resources to save got the highest generated mean of 4.73, which is interpreted as "Strongly Agree". It indicates that farm destinations in Mendez, Cavite value their resources. Saving resources provide economic benefits to farm destinations. This asserts the statement of Tseng et al. (2016) that farm destinations use recycled resources to save, reduce environmental impacts, reuse energy, and recycle all usable goods and supplies.

Table 2***Stakeholders' Degree of Agreement On Sustainable Practices of Farm Destinations***

Indicators	Mean	SD	Interpretation
Economic			
A1. The farm destinations make use of renewable energy to save (e.g. solar)	4.04	0.782	Agree
A2. The farm destination uses recycled resources to save (e.g. crop wastes as fertilizer)	4.73	0.542	Strongly Agree
A3. The farm destination produces farm products based on the needs and wants of tourists to increase sales	4.18	0.767	Agree
A4. The farm destination invests on big farm projects	4.37	0.687	Strongly Agree
A5. The farm destination uses technological resources and innovation to increase productivity	3.82	0.827	Agree
A6. The farm destinations encourage more spending from tourists	4.09	0.725	Agree
A7. The farm destination paid the right amount of taxes that helps increase the internal revenue allotment of the community	4.31	0.571	Strongly Agree
A8. The farm destination hires local resident as farm worker	4.61	0.641	Strongly Agree
Overall Mean	4.27		STRONGLY AGREE
Social			
B1. The farm destination promotes safe condition for employees and tourists	4.52	0.560	Strongly Agree
B2. The farm destination supports local residents through partnership (e.g. suppliers of farm resources)	3.69	0.876	Agree
B3. The farm destination provides the right amount of compensation and benefits	3.39	1.117	Neither Agree or Disagree
B4. The farm destination shares rural heritage through a small museum with historical and cultural relics	2.76	1.202	Neither Agree or Disagree
B5. The farm destination preserves the community traditions thru presentation of culture and traditions during events and shows	3.24	0.994	Neither Agree or Disagree
B6. The farm destinations sponsor/or support community projects	3.82	0.827	Agree
B7. The farm destination provides access of facilities to the community	3.5	0.913	Agree
B8. The activities of farm destination do not endanger the basic needs of local community like water, energy or public health	4.46	0.559	Strongly Agree
Overall Mean	3.67		AGREE
Environmental			
C1. The farm destination educates guests on environmentally friendly	4.52	0.639	Strongly Agree
C2. The farm destination uses waste segregation technique	4.59	0.658	Strongly Agree
C3. The farm destination has process to minimize air and water pollution	4.31	0.748	Strongly Agree
C4. The farm destination preserves the natural environment	4.43	0.769	Strongly Agree
C5. The farm destination helps to increase awareness of protecting and saving the environment	4.45	0.718	Strongly Agree
C6. The farm destination takes care of endangered plants and animals	4.09	0.710	Agree
C7. The farm destination uses eco-friendly resources.	4.08	0.748	Agree
C8. The farm destination adopts the green marketing practices	4.38	0.784	Strongly Agree
Overall Mean	4.36		STRONGLY AGREE

Legend: 1.00-1.80=Strongly Disagree; 1.81-2.60=Disagree; 2.61-3.40= Neither Agree or Disagree; 3.41-4.20=Agree; 4.21-5.00=Strongly Agree

The farm destination hires residents as a farmworkers', got the second highest mean of 4.61, interpreted as "Strongly Agree". It implies that the farm destinations have high regard for the livelihood of the residents. The result is similar to the findings of Simeon (2016) that farm tourism in the Philippines helps local farmers diversify and supplement their income. The result also affirms the findings of Welteji and Zerehun (2018) that agriculture is the main source of income in the Bale Mountains National Park, Southeastern Ethiopia. Moreso, In Phu Ruea, Northeast Thailand, Choenkwan et al. (2016) found that farm tourism created many employment opportunities for local people. Moreover, Adillon (2018) stated that tourism has become one of the major players in international commerce, and is the main source of income for many developing countries.

The statement, *'farm destination uses technological resources and innovation to increase productivity'* is an area to consider, it generates the lowest mean of 3.82 in the economic dimension of sustainable practices, interpreted as "Agree". It indicates that farm destinations in Mendez, Cavite need to adapt to technological advancement. Technical development is one way toward sustainable agriculture. Kolshus et al. (2015) cited in El Bilali and Alahyari (2018), affirmed that the agricultural community allows for the sharing of ideas, knowledge, and tools on how to use ICT to improve rural livelihoods, motivate rural communities, and create enabling conditions for developing sustainable agriculture and achieving food security. Moreso, as per Maumbe (2012) as cited by Mpiti & dela Harpe (2014), Information and Communications Technology (ICT) plays an important role in promoting and improving the livelihoods of farmers in the agri-tourism sector. Further, Agriculture Secretary William D. Dar emphasized the importance of adopting an inclusive agribusiness approach based on the value chain system, and suggested adopting technologies from other countries, shortening the transfer of technologies to stakeholders, and applying technologies or innovations developed by the country's universities, colleges, and research institutions (DA Communication Group, 2019).

In terms of the social dimension of sustainable practices of farm destinations, the highest mean generated is on the statement the farm destination promotes safe conditions for employees and tourists with a Mean of 4.52 and interpreted as "Strongly Agree". It implies that farm destinations have high regard for managing the security of the tourists. A crisis has a great effect on the image of the destination, tourists will not travel to a destination if it is not stable. They consider safety and security as one the factors in visiting destinations. Lago (2017) revealed that in Quezon, Philippines, safety, and security are considered by tourists in visiting the destinations.

Further, Islam et al. (2017) found that in Bangladesh, the most important for tourists is their personal safety and the security of the place. Further, Magnini (2017) found that Virginia's farm tourism venues not only produce economic-related results but also help foster safety and security.

Nevertheless, the statement "*farm destination shares rural heritage through a small museum with historical and cultural relics*" got the lowest mean of 2.76 with an interpretation of "Agree" from stakeholders' perspective. Farm destinations in Mendez, Cavite need to preserve their history and culture to entice more tourists' visitation. In contrast, Notorio et al. (2016) reveal that in the province of Cavite, Philippines tourism is highly qualified for cultural heritage enrichment. In addition, Abocejo (2015) found that tourism in Cebu City, Philippines, is strengthened by its diverse historical and natural resources and rich cultural milieu. It presupposes that farm destinations in Mendez, Cavite do not prioritize preserving cultural resources. There is a necessity for farm destinations to improve social sustainability in terms of sharing rural heritage through a small museum with historical and cultural relics and preserving the community traditions since it can entice tourists' visitation. Mirabent (2019) stated that attractors like architecture and tradition are vital features of the destination's competitiveness.

The result of the environmental practices revealed the farm destination uses the waste segregation technique and got the highest mean of 4.59. It indicates that farm destinations have high regard for conserving the environment. It affirms Barbieri et al. (2016) that farm destinations provide environmental benefits such as the protection of natural resources and habitat conservation. Yet, the statement that farm destination uses eco-friendly resources got the lowest mean of 4.08 with an interpretation of "Agree". It necessitates that farm destinations in Mendez, Cavite need to improve in the aspect of using eco-friendly resources to save the environment. Based on the result it presupposes that farm destinations in Mendez, Cavite have high regard for environment sustainable practices.

Table 3 presents the result of the degree of agreement of stakeholders on the challenges of sustainable tourism. The finding revealed that the barriers to sustainable tourism based on the stakeholders' perspective include lack of business partnership with the residents (M=3.0) and lack of workforce training and development with a mean of 3.68. The stakeholders "Agree" on these farm destinations' challenges to sustainable tourism.

Table 3***Stakeholders' Degree of Agreement On Barriers of Sustainable Farm Tourism***

Indicators	Mean	SD	Interpretation
1.Congestion problem is visible in the community.	2.46	1.210	Disagree
2 Construction of general infrastructure and activities of farms affect the climate change	2.39	1.079	Disagree
3 The community has concerns about the potential noise and trespassers	2.09	0.929	Disagree
4 The farms do not have business partnership with the residents (e.vg. concessionaire)	3.80	0.851	Agree
5 Lack of workforce development and training	3.68	0.952	Agree
6 The prices of products and services are high	2.74	1.181	Neither Agree or Disagree
7 Lack of information dissemination or public awareness	2.68	1.165	Neither Agree or Disagree
8.The high cost of innovation and technology adoption limits the improvement and development of farms	2.56	1.077	Disagree
9.Lack of community support	3.39	1.172	Neither Agree or Disagree
10.Lack of support from the government	3.36	1.216	Neither Agree or Disagree

Legend: 1.00-1.80=Strongly Disagree; 1.81-2.60=Disagree; 2.61-3.40= Neither Agree or Disagree; 3.41-4.20=Agree; 4.21-5.00=Strongly Agree

Strengthening partnership with residents has a multiplier effect, for the residents to augment their livelihood and for the farms to have easy access to community resources as. According to Dlamini et al. (2014), the related and support industry pertains to the availability of the local input providers, producers, distributors, marketers, financiers, and all other firms that provide goods and services to the agribusiness. Business partners provide inputs necessary for farm destinations to operate efficiently.

On the other hand, to have sustainable agriculture, knowledge, skills, practices, technologies, and resources must be used for sustainable intensification (Loconto et al., 2016). The training requirements for farm tourism are essential in its operation since tourism is engaged with operational skills and product knowledge. The high quality of place and the presence of various services cannot be sufficient if the quality of service is poor (Mahaliyanaarachchi, 2015).

5. Conclusion and Recommendations

The role of stakeholders in tourism destinations is necessary to realize tourism goals and objectives. Having the stakeholders as research participants provides benefits and advantages

because of their knowledge about the entire portfolio. Thus, stakeholders' perspective is an important consideration to ensure sustainable tourism of farm destinations. Sustainable tourism is highly regarded by farm destinations, by taking account of current and future impacts on economic and environmental aspects. Social sustainability is evident through the sustainable practices adopted by farm destinations that lead to creating a balance on pillars of sustainability.

On the degree of agreement of stakeholders on sustainable practices, farm destinations in Mendez, Cavite have high regard for sustainable practices. It is presupposed that farm destinations can support a defined level of the sustainability that can lead to a more productive use of resources and provide more economic and social opportunities for the resident. Barriers to sustainable tourism show the weak points of the farm destinations that need to consider since they can affect farm tourism sustainability.

It is recommended that farm destinations focus on continuous capability-building for farmworkers through training programs. Skills and knowledge need to be updated based on need assessment. Moreover, strengthening the cultural attraction through preservation and presentation of the community traditions and heritage is needed for cultural heritage enrichment lastly, encouragement of local small businesses to build a partnership with farm destinations is suggested to reinforce the support system with a multiplier effect.

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Awareness and Challenges of ISO 9001:2015 Implementation in Higher Education

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Abstract

This study assessed the awareness on the implementation of International Organization Standardization (ISO) 9001: 2015 in a university and the challenges encountered by the key stakeholders. It also tested the correlation of respondents' demographic profile to the level of awareness and challenges. The study used a descriptive research design and convenience sampling technique with a total of 100 survey participants from senior officials, professors, faculty, and non-faculty personnel. To collect responses, the study used structured survey questionnaire distributed through Google Forms. Descriptive statistics such as frequency count, percentage, and weighted mean as well as Spearman were used for data analysis. The results of the study showed that employees are 'Fully Aware' and 'Aware' on the implementation of ISO 9001:2015, particularly in terms of the quality mission, vision, and objectives. However, employees "Disagree" with the various challenges in the implementation of ISO 9001: 2015. In addition, there was no significant relationship among the respondents' profile, awareness and challenges in the implementation of ISO 9001: 2015 at the university. The study found that while university employees are usually aware of the quality management system's fundamental objectives, they normally disagree on the challenges of putting it into practice. For this, information dissemination should be done on a regular basis while the employees are obliged to also internalize the university's quality management system's vision, mission, and objectives.

Keywords: *ISO 9001:2015, Challenges, Awareness, University, Quality Management*

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1. Introduction

The ISO 9001:2015 is recognized as the world's leading quality management standard (QMS) implemented in over one million organizations and institutions all over the world. The implementation of which is undeniably a huge advantage to any organization or institution in providing quality services in meeting their goals with an organized workspace while providing excellent services. This standard can be applied across any organization or specific department to improve performance. Its effectiveness lies on its keys principles of quality management, of which customer's satisfaction is on top of the list. It encompasses the context of institution, restructures a number of information, emphasizes on risk-based thinking, improves applicability for services, and improves leadership requirements (Medic et al., 2015).

Institutions and organizations follow ISO 9001 that ensures processes meet the recognized standard for improving the institutions performance, the satisfaction of customers and maintaining regulatory compliance. As organizations turn to program quality management in enhancing performances, organizations also enhance products and quality services through quality activities (Mukwakungu & Mbohwa, 2018). Accordingly, Neyestani (2016) asserts that it helps institutional performance through the generic guidance and documentation, and persistent development through "Plan-Do-Check-Act" (PDCA) method.

Throughout its progress until 2015, ISO 9001:2015 has been recognized a minimum standard that may be appropriate to meet the demands and expectations of higher educational institutions (HEI). While huge number of HEIs won the trust of stakeholders by adopting ISO 9001 into their systems, Hussein et al. (2017) found Lebanese educational institutions continue to make a little and insignificant contribution. Accordingly, the difficulties have been highlighted to emphasize the need to adhere to quality management system standards. Meanwhile, the effect of quality management on Angola's Higher Education Institutions (HEIs) has attracted interest in recent years. The study of Nicolay et al. (2019) highlighted that institutions must implement and certify a QMS as a differentiating factor among institutions. As ISO 9001:2015 embeds quality principles throughout organizational processes, ISO standards are gradually promoting the usage of QMS in the functional framework. For instance, the maritime upper learning institutions should contain QMS in position as per the International Convention on Seafarer Training, Certification, and Watch keeping. According to Phelivan and Cicek (2021), ISO 9001:2015 encourages complete representation of the quality system to give relevant data for establishing an efficient QMS and

identifying potential gaps and areas for improvement. With this, Oksana (2022) asserts that adoption of ISO standards in higher education would help increase service quality, higher learning institutions' competitiveness, and the global development of innovative societies.

In the recent years, ISO standards are progressively being adopted in educational programs all over the world (EISCAA, 2012) which serves as a competitive advantage as symbol of quality academic programs. It has benefited education institutions in shifting focus from quality of the employees to the institutional performance through new management systems in higher education (Stojanovic, 2015). When organizations have certification based on the internal motivation (productivity improvements, improvements in quality awareness, and internal organization improvements), the resulting benefits have a more global dimension (Heras- Saizarbitoria, 2011; Rosa et al., 2017; Douglas et al., 2003; Van der Wiele et al., 2005; Caridade et al., 2017; Fonseca & Domingues, 2018). However, ISO 9001 in education institutions often lead to poor outcomes (Binmore, 1981). Furthermore, implementing ISO quality standard in higher education would get better the quality of services provided, increase the institution's competitiveness, and, in the long run, foster the creation of an innovative society (Fonseca, 2015).

In the study of Kasperaviciute (2012), the challenges in implementing ISO 9001 relates to internal institutional issues. In addition, higher education institutions have different stakeholders, including customers, which are also part of the key issues (Quinn et al., 2009). For instance, adjunct faculty members and staff are clueless on its implementation (Kagumba & George, 2013) which Bernik et al. (2017) and Kaziliunas (2010) suggest that the entire team must be aware and committed to the entire process. The absence of awareness and knowledge emanates from the lack of appropriate seminars and trainings (Sambil et al., 2018). Training provides employees the required knowledge and skills required for their job (Almeida et al., 2018). Additionally, with increased competition in the educational services market, constant upgrade of people and systems is a crucial requirement for the development of senior education institutions (Shevchenko, 2016).

Another major area in the implementation of quality management is leadership which emanates from the top management. As the leader maps out plans and approaches, employees eventually give importance to the process. The presence and characteristic of being a committed staff in top management should be taken in consideration for a QMS to be successful (Almeida, 2018). Every area of an organization should have managers responsible and capable to fulfill different roles (Keen, 2021). HEIs have more aversion to change than other organizations because it comprises highly educated individuals who may find it difficult to accept criticism of their work

approach, they see themselves as a source of information for others. This might be attributed to weak management, which failed to establish the fresh organizational culture and arrangement necessary to support quality management adaptation and execution (Hussein et al., 2014). According to Bernik et al. (2017), quality management system in higher education needs to be implemented in both academic and non-academic units with monitoring and evaluation. Meanwhile, the HEIs need to constantly improve with the objective of boosting national and international competitiveness (Bernik et al., 2017) while addressing obstacles of sustainability (Schmuck, 2021).

Given the premise and arguments, this study aims to determine the level of awareness of university employees on the implementation process of ISO 9001:2015 and the challenges associated with its implementation. It also proves the following hypothesis:

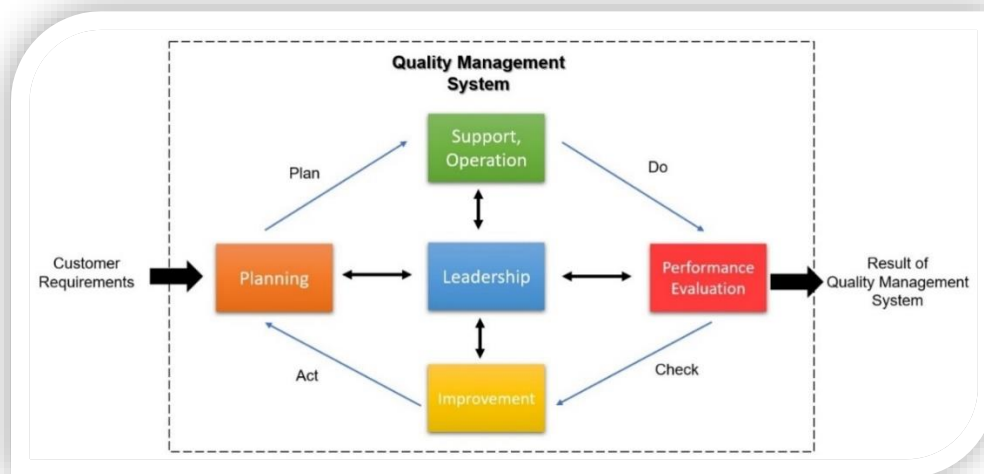
Ho: The level of employee awareness on ISO 9001:2015 is not associated with demographic profile.

2. Theoretical Framework

This study is anchored on the Plan-Do-Check-Act (PDCA) cycle.

Figure 1

Quality Management System Framework



The PDCA cycle has long been a cornerstone of the comprehensive quality management movement. It is a useful tool often used in the automotive sector to manage improvement projects, especially those that happen inside the factory. The process approach, customer focus, staff

involvement, improvement, leadership, evidence-based decision making, and relationship management are the seven quality management concepts defined in ISO 9001:2015, which the PDCA cycle is used in the standards framework. People at all levels of the company are engaged and engaging in enhancing the business capabilities to produce and deliver value to customers in a thriving QMS (Nguyen et al., 2018).

The goal of this framework is to create a sense of purpose among employees so that they can work together to achieve quality. This will allow them to line up their strategy, policies, procedures, and resources in order to achieve the quality goals (Algheriani et al., 2019). While the organization assess the QMS performance and efficacy, it should keep suitable written information as evidence of the results and adopt an appropriate monitoring system to attain good performance evolution levels in organizations (Fonseca et al., 2015). One of the goals of PDCA is to ensure that the organization is committed to improving its services, products, and processes in order to improve customer contentment. This entails a greater focus on root cause analysis and the suggestion of prevention and repair activities as needed, in order to satisfy the customer/firm with the results of the quality management system (Elgobbi, 2014).

3. Methodology

This study used descriptive research design in determining the respondents' level of awareness on the various aspects of ISO 9001: 2015. The descriptive research describes what was observed and often concerns with counting or documenting observations about a new unusual problem (Maxfield & Babbie, 2015).

The respondents of the study were 60 teaching and 40 non-teaching personnel of a state university in Laguna. The 100 personnel range from top management to rank and file employees with designations such as senior officials, professors, administrative officer, associate professor, assistant professor, instructor, administrative staff, administrative aide, part-time faculty and job order employees. In order to obtain maximum representation, the respondents were purposively chosen from various range of demographics such as age, sex, job status, position, and years of service. The majority of the respondents are female (60%) from the age bracket of 26 – 35 years old (41%) followed by 36 – 45 years old (23%) and 18 – 25 years old (20%). With regards to the job status, the part-timer, permanent – non-teaching, permanent – teaching, and temporary

comprise 20% each. Majority of them are teaching (54%) with 1-3 years of service (47%) followed by 4-6 years of service (20%).

The study modified an adapted survey questionnaire from Alolayan (2014) and Oluoch (2010). The modified questionnaire was composed of 20 questions to determine the level of awareness on ISO 9001: 2015. In addition, the extent of challenges on the implementation of the ISO 9001: 2015 was adapted from a survey questionnaire of Sharif (2005). The modified survey questionnaire was divided into three parts: demographic profile, level of awareness and challenges faced. The questions were answered using 5-point Likert-type scales. The survey questionnaire was programmed in Google form by the ICT expert in the university.

In order to get maximum participation, the survey questionnaire was posted through the university social media page, sent via private message, and e-mailed to the teaching and non-teaching employees. It was assured that the data gathering was permitted by the university officials before the distribution. The survey was voluntary and employees were oriented on the objectives of the study. It was also assured that data gathered were treated with utmost confidentiality and personnel information were not disclosed at any stage of the study.

The gathered data were analyzed using descriptive statistics such as frequency count, percent, and weighted mean. The Spearman Rho was employed for the inferential analysis of data.

4. Results and Discussion

Table 1 presents that generally the employees have strong level of awareness on the functions and benefits of ISO 9001: 2015. Specifically, the results highlighted that ISO “*is a tool for continual improvement of our institution*” (WM=4.32), “*supports quality policies*” (WM=4.29), “*helps organize business workflow*” (WM=4.25), “*is a tool for handling documentation*” (WM=4.25), “*supports quality mission, vision, and objectives*” (WM=4.25), “*is a tool for standardizing institutional processes*” (WM=4.24), and “*measures customer satisfaction level*” (WM=4.22).

Table 1*Level of Awareness on the Main Functions of the ISO 9001:2015*

Indicators	M	VI	Rank
ISO...			
1. helps organize business workflow	4.25	FA	4
2. is a tool for handling documentation	4.25	FA	4
3. is a tool for standardizing institutional processes	4.24	FA	6
4. measures customer satisfaction level	4.22	FA	7
5. takes into consideration internal customer needs (Staff needs)	4.07	A	18.5
6. has full control and monitoring over our suppliers	3.92	A	20
7. is a tool to improve internal efficiency	4.19	A	8
8. is a tool for managing business processes effectively	4.15	A	13.5
9. is a tool to fulfil the customers' needs and requirements	4.14	A	15
10. is a tool for managing and improving quality of our products	4.18	A	9
11. is a tool for continual improvement of our institution.	4.32	FA	1
12. supports quality mission, vision, and objectives	4.25	FA	4
13. support of quality policies	4.29	FA	2
14. defined duties and responsibilities	4.17	A	10.5
15. communicated of quality policies	4.17	A	10.5
16. leads to organized written collection of fundamental practices	4.16	A	12
17. improves customer's confidence on services	4.11	A	17
18. facilitates performance contracting	4.07	A	18.5
19. enhances quality inspection	4.15	A	13.5
20. improve communication within and out of the institution	4.13	A	16
General Weighted Mean	4.17	A	

Legend: Fully Aware (FA) 4.21 – 5.00; Aware (A) 3.41 – 4.20; Neither Aware or Not Aware (NA) 2.61 – 3.40; Less Aware (LA) 1.81 – 2.60; Not Aware (NA) 1.00 – 1.80

The results generally imply that teaching and non-teaching employees are fully aware of the continual improvement of the institution, handling documentation, and standardizing institutional processes. Relevant to the findings of Alolayan (2014), the top management's involvement is necessary for the effective implementation leading to the findings of Nassor (2015) on higher employee productivity. The results also assert the findings of Pokisinska et al. (2007) on the ISO's role on organized business workflow, quality mission, vision, and objectives, and customer satisfaction. The results confirm the study of Mukwakungu and Mbohwa (2018) that employees are aware and committed to the importance of ISO 9001 implementation.

Table 2*Challenges in the implementation of ISO 9001: 2015*

Indicators	M	VI	Rank
1. There is a lack of understanding the benefits of ISO 900	2.82	U	1
2. No awareness of ISO 900 standard through employees of the institutions	2.5	D	9
3. Lack of top management commitment	2.36	D	14
4. There is no leadership	2.04	D	31
5. No expert people in quality management	2.12	D	30
6. Ineffective communication between departs/offices	2.37	D	13
7. No cross-functional cooperation between department/offices	2.29	D	22.5
8. No employees involvement and empowerment	2.23	D	28
9. No customer feedback	2.24	D	27
10. Additional workload from quality management system	2.74	U	3
11. Customer satisfaction principle not appreciated in the institutions	2.29	D	22.5
12. There is absence of stakeholders' voice in the institutions	2.46	D	10
13. There is lack of achieving training targets.	2.33	D	19
14. There is lack of information	2.34	D	16.5
15. The organization have a difficulty of calibration	2.38	D	12
16. Too difficult to learn the ISO 900 standard and implement them	2.44	D	11
17. No proper organizational structure developed	2.28	D	25
18. There is lack of proper performance measurement system'	2.29	D	22.5
19. Insufficient technology and poor quality management practices in the institutions.	2.34	D	16.5
20. There is lack of local consultants properly qualified in certain sector	2.34	D	16.5
21. There is lack of identification and management of processes in the institutions	2.29	D	22.5
22. Employees did resist change to the existing system in the institution	2.27	D	26
23. There are wrong people in wrong position	2.53	D	8
24. Fear of admitting error	2.67	U	5
25. It is difficult to change the existing system	2.55	D	7
26. Quality is a swear word in the language of many employees	2.72	U	4
27. There are a lack of training programs relating to quality management system	2.6	D	6
28. Employees are not working towards future of the institutions	2.14	D	29
29. Lack of motivation and reward system	2.76	U	2
30. The institutions train its employees without specific purposes	2.34	D	16.5
31. Employees just to look for their own benefits	2.31	D	20

Legend: Strongly Agree (SA) 4.21 – 5.00; Agree (A) 3.41 – 4.20; Undecided (U) 2.61 – 3.40; Disagree (D) 1.81 – 2.60; Strongly Disagree (SD) 1.00 – 1.80

Table 2 presents the challenges in the implementation of ISO 9001: 2015. The identified potential and probable challenges were “*lack of understanding the benefits of ISO*” (WM=2.82), “*lack of motivation and reward system*” (WM=2.76), “*additional workload from quality management system*” (WM=2.74), “*quality is a swear word in the language of many employees*” (WM=2.72), and “*fear of admitting error*” (WM=2.67), which showed personnel on the *undecided* spectrum. The undecided ratings imply that either majority or less than majority of them find the variables an issue. It strongly suggests that the lack of understanding on the benefits of ISO emanates from several factors such as additional workload without proper compensation and the punishments for committing errors. As Hesham and Magd (2007) identified that one of the barriers in the implementation of ISO in the organization is the lack of understanding, this study also associates the understanding to motivation and reward. The employees might be aware of the ISO quality management and its importance but find it additional burden without proper compensation. The issues on motivation, reward and compensation are raised in the studies of Neyestani and Juanzon (2017), Santos et al. (2014) and Willar (2012). The implementation of a quality management system, and its subsequent certification, is a voluntary process, supported by the organization’s own motivations, goals and policies. Hence, teaching and non-teaching employees are undecided whether its implementation is considered an additional workload from quality management system or not. However, the swear word in the language of many employees contradicts the study of Sharif (2005) that managers and supervisors disagree on quality as a swear word in the language of many employees. These findings could also highlight the study of Bournabri et al. (2018) that lack of training primes in poor capability in completing tasks associated to the quality management.

Table 3 shows the relationship between the profile of the respondents to the level of awareness and challenges in the implementation of ISO 9001: 2015. The age, sex, job status, position, and years in the service obtained p-values of .767, .780, .876, .994, and .970, respectively, which is greater than 0.05 level of significance. Thus, age, sex, job status, position, and years in the service has no significant relationship to the level of awareness of the employees in the implementation of ISO 9001: 2015. On the other hand, the age, sex, job status, position, and years in the service have p-values of .785, .986, .275, .114, and .218, respectively, which is greater than 0.05 level of significance. Thus, age, sex, job status, position, and years in the service have no significant relationship to the extent of challenges in the implementation of ISO 9001: 2015. The results proved employees have same level of awareness and experience similar challenges in the

implementation of the ISO regardless of their demographic profile. Although the respondents were purposively chosen from range of demographics, their profile do not statistically reflect their assessments of awareness and challenges.

Table 3

Significant Relationship between Respondents' Demographics and Level of Awareness

Variables	S-Tool	C-Value	P-Value	Decision	Interpretation
Age VS Level of Awareness	S	.030	.767	Accept	Not Significant
Sex VS Level of Awareness	P	-.028	.780	Accept	Not Significant
Job Status VS Level of Awareness	E A	.016	.876	Accept	Not Significant
Position VS Level of Awareness	R	-.001	.994	Accept	Not Significant
Years in the Service VS Level of Awareness	M A	-.004	.970	Accept	Not Significant
Age VS Extent of Challenges	N	-.028	.785	Accept	Not Significant
Sex VS Extent of Challenges		-.002	.986	Accept	Not Significant
Job Status VS Extent of Challenges	R H	-.110	.275	Accept	Not Significant
Position VS Extent of Challenges	O	-.159	.114	Accept	Not Significant
Years in the Service VS Extent of Challenges		-.125	.218	Accept	Not Significant

5. Conclusion

The study assessed the level of awareness and challenges of teaching and non-teaching personnel on the implementation of ISO 9001: 2015 to identify their relationships to the respondents' demographic profile. The results showed employees' full awareness on the main functions of ISO 9001: 2015 in the university. It has highlighted the ISO as a tool for continual improvement, support to the university quality policies, mission, vision, and objectives, and organize the workflow of the institution. However, it has identified potential and probable challenges in its implementation including lack understanding of the benefits of ISO 9001: 2015, motivation and reward system in its implementation, and additional workload from quality management system. The test of relationship showed that the demographic profile such as age,

sex, job status, position, and years in the service have no significant relationship to the level of employees' awareness and extent of challenges in the implementation of ISO 9001: 2015.

Since challenges exist in the implementation of ISO 9001:2015, this study recommends the conduct of regular information dissemination about the benefits of ISO 9001:2015 to the students, faculty, non-teaching personnel, administrators, and clientele of the University. Likewise, a reward system through recognition during the celebration of the foundation of the University be given to the various stakeholders on the implementation and adherence to the quality framework.

Although the study was conducted in a single state university, the results has potential implication on the current and future plans of any HEIs in their quality management. Whether educational institutions adopt ISO or not, the implementation of the quality management must be embedded in their systems. As such, the identified awareness level, challenges experienced and the overall challenge on implementing QMS are fundamentals to the initial step in achieving quality. Further studies are encouraged to strengthen the comparisons with other private and public colleges and universities.

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Is the Future of Green Enterprise Really Green? Assessment of Stakeholders' Awareness on Green Enterprise

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Abstract

Educating individuals on “greening” their activities during the execution of their jobs would contribute in controlling environmental harm. Therefore, this study aimed to determine the awareness and perception of tricycle drivers in San Pablo City, Laguna, Philippines on green enterprise. A survey was done that involved one hundred fifty (150) public utility vehicle (PUV) drivers. The questionnaire intended to measure awareness on general concepts as well as on air emission control and perception on greening their activities as they render transport service. The research also determined if awareness on green enterprise would influence perception on green practices. This study also examined if there is difference in the awareness and perception of the PUV drivers when they are grouped according to profile factors. The study revealed that the tricycle drivers in San Pablo City, Laguna are highly aware of the meaning, benefits, and activities of green enterprise. Moreover, the result showed that the drivers agreed on the green practices applicable to their work as public transport drivers. It was also found out that awareness on green enterprise significantly influence perception on green practices. Furthermore, it was determined that there is no significant difference among the awareness of the respondents on green enterprise when grouped according to profile factors but there is significant difference among the perception of the tricycle drivers on green enterprise when grouped according to civil status.

Keywords: *Awareness, Green Enterprise, Transport Drivers*

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1. Introduction

Air pollution is highly ranked as one of the world's considerable environmental problems. In fact, it is also one of the top risk factors for mortality; specifically, a major risk factor in low-income countries. It recorded to have caused an approximate five million deaths all over the world in 2017 contributing 9%, which is estimated to be 1-in-10 deaths (Ritchie & Roser, 2020). Moreover, air pollution kills an estimated seven million people worldwide every year. Data disclosed by the World Health Organization (WHO) showed nine out of ten individuals breathe air containing harmful levels of pollutants (Schraufnagel et al., 2019). Cases of death due to air pollution are high in the Philippines since it ranked third all over the world. As reported by WHO (2018), there were around 45.3 deaths per 100,000 people caused by air pollution. The leading contributor to air pollution is vehicle emission (Perez, 2019).

Air pollution sources can be classified as stationary, mobile or area, as described in Philippine Republic Act (RA) 8749. The Land Transportation Office (LTO) classified mobile vehicles into seven groups namely; cars, trucks, buses, motorcycles/tricycles, utility vehicles, sports utility vehicles, and trailers. Starting 2005, the proportion of motorcycles and tricycles have gone up until it exceeded utility vehicles number and became the prevalent mobile vehicles in the Philippines (Philippine Environmental Management Bureau, 2015). In addition, Tri-Tugaswatil et al. (1995) as cited in Balaria et al. (2017) mentioned that tricycles are recognized as one of the public transportations generating enormous gas emission that contributes to the release of lead and nitrogen dioxide in the atmosphere.

The effects of climate change, that also include different kinds of pollutions and the depletion of non-renewable natural resources, has resulted to environmental awareness (Douglas, 2006). Rules and regulations that emphasize on the protection of the environment are continually being formulated worldwide. Republic Act No. 8749 or better known as the Philippines Clean Air Act of 1999, defines the government's program controls to reduce air pollution and integrate environmental protection into its development plans. Despite the government programs and policies, it was reported by the Department of Environment and Natural Resources (DENR) that the current level of air quality in the Philippines does not comply with the standards of the Clean Air Act. Although the air pollution rate has decreased by twenty percent, it still has not met ideal levels (Perez, 2019).

The environmental awareness brought forth various concepts that promote environmental protection. One of these is the term green enterprise, which refers to services, products, and jobs from a number of sectors that emphasize sustainability, fewer emissions of greenhouse gases, and thus, slowing climate change. Terms such as green business, green economy and sustainable business are also commonly used. Green enterprise also includes a number of business sectors, including transportation, renewable energy, industry, agriculture, recycling, and waste management (Health24, 2011). It also encompasses the adoption of environmentally-favorable practices by any industry or service provider. Green businesses often weigh in on reusable products which could have multiple uses, or are produced from recycled materials (Natural Standard, 2011).

As motorcycles and tricycles are now the dominant mobile vehicles in the Philippines, greening of tricycle transport service would contribute in lessening air pollution in the country. Hence, this study seeks to find out awareness and perception on green enterprise of public transport drivers in the city of San Pablo, Laguna. Moreover, the outcome of this research could be a basis in educating tricycle drivers on how they could be of help in cleaning the environment.

2. Literature Review

Businesses are basically designed to make money by providing specialized items or services that meet a certain demand. Each business strives to maximize profits by selling as many goods or services as feasible. However, the production of goods and services has a significant environmental impact. One of the connotations of the term "green" to the world is the appropriate selection and use of resources (Nowak & Leymann, 2013). Furthermore, each phase of creation uses a specific number of resources. This could be either direct or indirect resources. Direct resources are raw materials or supplemental items that are processed within or for a business. Indirect resources, such as energy, are resources that have been induced to affect the status of the environment before the organization uses them. The selection of appropriate resources, as well as their effective and efficient use, are critical to minimize the impact of businesses on the environment. However, Friedman (2017) quips that the business world has just one sort of social responsibility: businesses should use their resources and conduct their operations with the goal of increasing profits while adhering to the rules of the game.

Awareness pertains to information gained through experience or education (Al-Dosary, 2020). In general, it means being knowledgeable and being conscious. Awareness is the state or ability to perceive, to feel, or to be conscious of events, objects, or sensory patterns (Gafoor, 2012).

Awareness of green enterprise then means being knowledgeable of this concept as well as its corresponding practices in consideration of a given job. On the other hand, perception is by means how something is understood, regarded or interpreted. For the purposes of this study, it was defined as how the tricycle drivers would agree on the green practices involving their jobs. The statement of considering green among the people can be a salient factor for the success to reduce the problem of pollution (Din et al., 2013). In this context, Ereneo (2010) recommended that although there are already significant programs initiated by both the public and private sectors, development of appropriate national action plans on skills training, environmental education, and human resource development to reinforce greening vision are necessary.

Development significantly comprises sustainability, it entails promoting socioeconomic growth in a way that does not jeopardize future generations' futures and takes into account the demands and rights of the natural world. The pursuit of ecological, economic, and social issues is its underlying concept, and it encompasses three essential priorities; environmental - avoiding environmental degradation and mitigating environmental hazards; economic – meeting people's fundamental material requirements using technology that do not degrade the natural environment; ensuring the social minimum (the eradication of hunger and poverty), health care, spiritual growth (culture), safety, and education. The ecologization of the economy appears to be a viable means of putting sustainable development ideals into practice. Ecologization, in its proper sense, takes into account not only ecological concerns (the need to conserve the environment), but also social aspects. Not only the natural environment, but also all facets of man's social life. As a result, the term "ecological economy" is coined to describe a system that optimizes the flow of commodities and services to ensure optimal resource utilization and minimal waste creation (Kouch 2015, p. 14).

Enterprises take one of two approaches to the challenges of ecological responsibility: reactive, which entails only compliance with environmental legislation, or proactive, which means that an enterprise recognizes the importance of the ecological aspect and looks beyond the scope and timeframe of current arrangements by anticipating what will become new. Building connections between businesses and stakeholders is increasingly driving proactive behavior. It should be noted, however, that many businesses take a passive approach to matters concerning the environment and ecology. The following are some of the reasons for this predicament (Bernaciak 2000, pp. 91–92): management's lack of attention to environmental issues, as well as a failure to see the link between business and the environment; there is no link between a company's market

position and its environmental commitment; the actual, negligible environmental impact of a business, as a result of factors such as industry characteristics, technology used by the business, and facility size; in terms of profitability, incurring additional costs associated with environmental preservation may appear foolish.

According to Sperling and Salon (2002), transportation is critical to economic, social, and environmental growth. The goal of transportation and mobility is to efficiently move people and things while minimizing negative effects on the environment and society. It's easy to say, but tough to put into practice. To ensure a suitable combination of private and public transportation, public and private organizations and institutions must collaborate. In addition, Woodcock and Aldred (2011) reported on refocusing the part that transport plays with respect to society, health and environment, and it is a chance work on by emphasizing on the favorable effects of green transport in attaining health, clean environment, increased social coherence, improved quality of life and economic development. On the other hand, Pardo (2012) observes that city planners in developing countries are regrettably continuing to pursue the same car-oriented transportation development patterns as in the past. Many industrialized cities are now attempting to recover from a car-dominated development phase by suspending the construction of new infrastructure for private automobiles and reallocating road space for public transportation and non-motorized transportation. Energy use and carbon emissions in the transportation industry are expanding faster than in any other sector around the world, especially in developing countries.

The current transportation system is a major contributor to air pollution, greenhouse gas emissions, environmental degradation, global warming, and health consequences. Greening the transportation industry is a critical component of resolving the prior issues. Automobiles dominate urban areas around the world, making them less sustainable. Air and noise pollution, traffic congestion, road accidents, the decrease of public transportation, environmental degradation, climate change, and energy depletion are all issues that cities in developing countries face. Many commuters in developing cities rely on informal paratransit services because they provide on-demand mobility, are easy to locate and catch, and cover all locations, particularly those without access to formal transportation. However, these unofficial transportation networks have significant drawbacks: they increase traffic congestion, pollute the air and noise, cause traffic accidents, and promote violence among route cartels. In addressing such difficulties, it is not an option to develop a sustainable and green transportation system to overcome and meet the transportation demands of the ever-growing urban population and freight facing megacities.

According to Amhmed and El Monem (2020), there are numerous definitions for sustainable and green transportation because it was defined by several organizations and professionals. The authors described sustainable and green transportation as any mode of transportation that considers humanity, is economical, safe, and offers a variety of modes of transportation. It also uses renewable or regenerated energy instead of fossil fuels and has a low environmental impact. Furthermore, the features of a sustainable urban transportation system must be strengthened and addressed in an integrated manner. "*These features include mobility, accessibility, affordability, social equity, efficiency, safety, security, convenience, low carbon, comfort, and people- and environment-friendliness,*" (Pardo, 2012).

3. Methodology

This study used descriptive quantitative design, which describes the phenomenon as it occurs. Since the aim of the study is to measure the level of awareness, quantitative method of data gathering and data presentation is the most appropriate.

As to the selection of the respondents, there are 7,500 registered tricycle drivers (including inactive) in the City of San Pablo in the Philippines. A sample size was chosen consisting of 150 drivers using quota and convenient sampling methods.

Table 1
Demographic Characteristics

Characteristics	F	%	Characteristics	F	%
Age Range			Number of Dependents		
20-34	67	44.67%	0-2	112	74.67%
35-49	60	40.00%	3-6	32	21.33%
50 and above	23	15.33%	7 and up	6	4.00%
Civil Status			Educational Attainment		
Single	62	41.33%	Elem	37	24.67%
Married	87	58.00%	High School	76	50.67%
Widow	1	0.67%	Vocational	2	1.33%
Separated	0	0.00%	College	35	23.33%
Monthly Income					
5,000 and less	9	6.00%			
5001-10000	108	72.00%			
10,001 and more	33	22.00%			

Table 1 indicates that more of the respondents are in the early years of working which constitutes 44.67% of the total respondents. Only 23 or 15.33% of the respondents are with age 50

years old and above. This is consistent with the study of Miguel et al. (2018) on compliance of PUV drivers to the Road Safety Precaution that majority of the drivers were 31-35 years old which constitutes 12 or 40% of the total number of respondents. They further implied that the drivers are predominated by 31-45 years old because their age is their most driven condition; this is also the marrying age that's why drivers support their families.

It could be observed that married PUV drivers comprise the largest bulk of respondents which was recorded at 58% of the total respondents. On the other hand, the least number of respondents which only consists of one respondent is a widow. The outcome for this profiling coincides with the study of Miguel et al. (2018) that the drivers are predominated with those that are in the marrying ages and this is their means of providing for their families.

It could be seen that most respondents earn between P5,000 to P10,000 who are 72% of the total respondents. This result concurs with a study by Irene (2017) that the average daily income of tricycle drivers is P250. Thus, an estimated monthly income could be generated, on the average, at seven thousand five hundred pesos (P7,500.00). This average daily income of an average family of four children was perceived to be not enough for their daily needs but still majority viewed *pedicab* (human powered tricycle designed to carry passengers and goods) driving as the easiest way to earn.

This table shows that 74.67% of the respondents has dependents ranging from zero to two. Only six (6) tricycle drivers or 4% of the total respondents have seven (7) or more dependents. This is in congruence with the result of a survey made by the Philippine Statistics Authority (2017) that the average ideal family size is 2.7 children. Supporting families with sufficient resources may be the reason why many couples are hesitant about having more kids.

The large bulk of respondents were high school graduates that comprise 50.67% of the total. Biona (2017) investigated on the alternative technologies for the Philippine utility jeepney and found out that roughly 50% of the drivers has high school as their educational attainment. It could be implied that since working as a public utility driver does not require college degree, most of those who have not attained this level, could easily enter into this profession.

A survey was conducted through a self-administered questionnaire which consisted of three parts. The first part aimed to determine the demographic profile of the respondents. On the other hand, the second part of the questionnaire is composed of fifteen (15) questions that sought to find out the level of awareness of the respondents on green enterprise specifically five (5) questions that measured their know-how on the general concept and ten (10) questions on the knowledge on

air emission. Moreover, the third part determined the perception of the respondents on the practices of green enterprise relating to their job. The questionnaire was also validated by a statistician. The reliability of the instrument was tested using Cronbach Alpha with resulting values shown in table 2.

Table 2

Reliability Test

Variable	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Number of Items
Awareness on General Knowledge	0.896	0.895	5
Awareness on Air Emission	0.889	0.889	10
Perception on Green Practices	0.709	0.744	5

Tabular representation with corresponding percentages was used to describe the profile of the respondents. On the other hand, a Likert scale was utilized to assess the level of awareness and perception on green enterprise. The weighted mean was computed to summarize this assessment. Furthermore, linear regression was conducted in determining if awareness on green enterprise would influence perception on green practices while Analysis of Variance was done in determining difference of assessments among the groups of respondents.

4. Results and Discussion

The succeeding paragraphs would discuss the awareness and perception of the respondents on green enterprise.

As could be deduced from table 3, on the average, tricycle drivers are highly aware of general enterprise in accordance with its general concepts. It gained highest mean awareness on the definition and description of green enterprise. On the other hand, it got the lowest score on the view that the Philippine government are conducting training that tackles on how to implement “greening” in one’s business. Related to this, Bronola et al. (2019) in their study on green marketing recommended that all areas specifically the cooperative sector enhance its green development awareness campaigns and information drives. This could be done through various capacity building activities to be able to promote a positive mindset and attitude towards greening and educate the cooperatives on different greening practices.

Table 3*Mean Awareness of Respondents on Green Enterprise in Terms of General Knowledge*

General Knowledge	Mean	SD	Interpretation
1. The term "green enterprise" refers to services, products, and jobs that focus on sustainability, fewer emissions of greenhouse gases, and slowing climate change.	3.33	0.76	Highly Aware
2. The term "green enterprise" covers the adoption of environmentally sensitive practices by any industry or service provider.	3.23	0.78	Aware
3. Republic Act No. 10771 also known as the "Philippine Green Jobs Act of 2016", promotes the creation of green jobs, granting incentives and appropriating funds.	3.25	0.89	Highly Aware
4. The Philippine government conducts training on green productivity that discusses on how to practice "green" in one's enterprise.	3.15	0.89	Aware
5. In my job as a public utility driver, I can do "greening" as I render my services.	3.29	0.76	Highly Aware
Composite Mean	3.25	0.69	Highly Aware

It can be observed from Table 4 that the respondents are highly aware on the green practices for air emission control. It could be further noted that they are most aware that they can aid in cleaning the air by travelling only at speed required by traffic regulations and road conditions. On the other hand, the least mean computed on the respondents' awareness is that they can help cleaning the air through maintaining vehicle by changing oil regularly (every 5,000 kilometers).

It is important that tricycle drivers are aware of the practices that could contribute to air emission control since despite the existence of laws such as the Philippine Clean Air Act and Biofuels Act of 2006, gaps have been identified by Asian Development Bank and Clean Air Initiative for Asian Cities Center (CAI-Asia Center) (2010) and has also further recommended that review on enforcement and implementation of Clean Air Act to be able to assess its effectiveness as well as apply definite measures to transport sector that have been proven effective by other studies could be undergone.

Table 4*Mean Awareness of Respondents on Green Enterprise in Terms of Air Emission Control*

Air Emission Control	Mean	SD	Interpretation
1. The use of gasoline and diesel enhancer such as F2020 Fuel Saver can saved fuel by enhancing its engines.	3.27	0.65	Highly Aware
2. It reduces smoke emissions that are harmful to the environment. I can help clean the air by...(numbers 3-8)	3.29	0.70	Highly Aware
3. Maintaining vehicle by changing oil regularly (every 5,000 kilometers).	3.17	0.75	Aware
4. Keeping the engine well-tuned following the owner's manual.	3.47	0.60	Highly Aware
5. Keeping tires properly inflated.	3.48	0.63	Highly Aware
6. Observing proper driving habits.	3.47	0.65	Highly Aware
7. Not overloading.	3.46	0.67	Highly Aware
8. Travelling only at speed required by traffic regulations and road conditions.	3.53	0.61	Highly Aware
9. Using the E-Trike promotes energy efficiency in the transport sector.	3.38	0.66	Highly Aware
10. Four-stroke engine is more environment-friendly.	3.36	0.73	Highly Aware
Composite Mean	3.39	0.47	Highly Aware

Table 5 summarizes the perception of the PUV drivers on green enterprise practices. On the average, the respondents agree on the stated green practices. It could be observed that the highest mean was computed in using gasoline and diesel enhancer such as F2020 Fuel Saver. However, the lowest mean perception was determined for the regulations limiting the age of tricycles to 10 years. This category also has the highest standard deviation which means that relatively, there is a bigger variation of responses from the mean perception.

Table 5*Mean Perception of Respondents on Green Enterprise*

Perception on Green Enterprise	Mean	SD	Interpretation
1. Using of gasoline and diesel enhancer such as F2020 Fuel Saver.	3.16	0.69	Agree
2. Using of biofuel.	3.15	0.75	Agree
3. Using of E-trike	2.93	0.72	Agree
4. Regulations limiting the age of tricycles to 10 years.	2.65	1.06	Agree
5. Banning of two-stroke engine tricycles.	2.81	0.97	Agree
Composite Mean	2.94	0.59	Agree

The Philippines Daily Inquirer (2017) reported that the phase-out of old PUVs is expected to spark outrage among operators and drivers who insist that it will lead to loss of livelihood. Conversely, a study by Balaria et al. (2017) revealed that majority of tricycle drivers were agreeable to the shifting from engine propelled tricycle to E-trike. Although in the long run, E-trike was found to be sustainable, its cost impedes adoption and total employment of the City Government. Moreover, Purwandani and Michaud (2021) took note that lack of capital is one of the main barriers in implementing green business practices.

The subsequent paragraphs would discuss on the result of the statistical treatments done.

Table 6

Linear Regression

	Estimate	SE	95% CI		t	p
			LL	UL		
Intercept	1.933	0.296	1.348	2.519	6.524	<0.001
Awareness	0.303	0.088	0.129	0.477	3.440	<0.001

Using regression analysis, awareness on green enterprise was found to significantly influence perception on green enterprise practices. The adjusted R² of this model is 0.068, which indicates that 6.80% of the variation in perception on green enterprise practices was explained by the awareness on green enterprise. The significant F-ratio (F = 11.831, p = <0.001) indicates that the results of the regression model could hardly have occurred by chance. Thus, the goodness-of-fit of the model is satisfactory. Based on the beta coefficient of the independent variable, it is possible to assess the impact of the variable on the dependent variable, which is perception on green enterprise practices. It could be implied that if a driver is more aware about green enterprise, then he would strongly agree on the green enterprise practices involving their work. In addition, it could be concluded that the more understanding one driver has on green enterprise, including its benefits and advantages to the environment, the more he would be in concurrence with the implementation of its practice.

Table 7 presents that there is no significant difference among the awareness of the respondents as grouped according to profile factors. It could be deduced that differences in age, civil status, number of dependents, educational attainment, and monthly income do not translate to differences in awareness to green enterprise. It can be implied that tricycle drivers are knowledgeable of green practices to protect the environment no matter what age, marital status, number of dependents, educational attainment and monthly income they have. This is consistent

with the result of the study of Aydinan (2020) that tricycle drivers are knowledgeable of road traffic rules and regulations. However, despite being knowledgeable, it was found out that they are not always compliant.

Table 7

Test of Difference in the Awareness Among the Respondents on Green Enterprise as Grouped According to Profile Factors

Profile	F-value	p-value	Interpretation
Age	0.763	0.468	Not Significant
Civil Status	0.849	0.430	Not Significant
Number of Dependents	0.139	0.870	Not Significant
Educational Attainment	1.692	0.171	Not Significant
Monthly Income	0.713	0.492	Not Significant

On the other hand, Table 8 shows that there is significant difference among the perception of the respondents on green enterprise as grouped according to civil status. It could mean that the difference of perception among the single, married and widowed drivers is significant.

Table 8

Test of Difference in the Perception Among the Respondents on Green Enterprise as Grouped According to Profile Factors

Profile	F-value	p-value	Interpretation
Age	0.645	0.526	Not Significant
Civil Status	3.475	0.034	Significant
Number of Dependents	1.151	0.319	Not Significant
Educational Attainment	0.071	0.975	Not Significant
Monthly Income	0.041	0.959	Not Significant
Religion	1.566	0.187	Not Significant

DePaulo (2017) stated in her research that cross-sectional studies most of the time find small difference between single and married people. But she concluded that many single individuals fare better psychologically when they do not have a husband or a wife. Studies on interpersonal life show that family, friends, social connections, and personal communities have important roles in the lives of many single people. Oftentimes, singles are more into maintaining

a heterogeneous interpersonal ties than married people. Education, work, caregiving and solitude are also valuable elements of many single people's lives.

5. Conclusion

Motorcycles and tricycles are now the dominant mobile vehicles in the Philippines. Therefore, implementing green practices in the tricycle transport would contribute in lessening air pollution in our country. The tricycle drivers of San Pablo City, Laguna are considered highly aware of what green enterprise is, its general concepts and air emission control practices. The awareness covers the *what's* and *how's* of green enterprise. It could be deduced that tricycle drivers in the city are well aware of its definition, Philippine government's programs, and applicable activities that will aid in controlling air emission. The respondents also agree on green enterprise practices such as using of gasoline and diesel enhancer, biofuel and E-trike as well as limiting the age of tricycles to 10 years and banning of two-stroke engine tricycles.

It was proven that there is a significant relationship between the awareness and perception on green enterprise. Thus, it can be concluded that the more knowledgeable a driver is about the benefits of greening their work, they would be more in concurrence with its practices. In addition, it was determined that the awareness of the tricycle drivers do not differ significantly when they are grouped according to profile factors. However, it was found out that perception on the green enterprise practices differs significantly among single, married and separated drivers.

Since it was proven that there is a significant relationship between awareness and perception on green enterprise, it is considerable to conduct seminars or trainings that will focus on "greening" the work of public utility drivers specifically those in the tricycle transport. As awareness on the benefits on green enterprise is increased, the drivers' agreement to the implementation of its practices is also strengthened. Though the government already has a training program for drivers that includes road safety and good grooming, it should also incorporate environmental awareness and green productivity.

Another issue that points to the objection of the drivers and transport operators in the implementation of green practices is financial concerns as they deem it could result to losses. Specifically, the using of E-trike and limiting the age of tricycles to 10 years would mean additional cost for the drivers or transport operators as well. Thus, it is suggested that the government put up a financial program that could help ease the burden in complying with policies that promote green practices. In addition, since in the Philippines, policies on air emission are

already in place, its enforcement and implementation could be reviewed and consequently improved to obtain the objective of having a cleaner air and healthy environment.

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