Knowledge and Acceptability of the Public on Off-The-Grid Living at the City in Central Philippines

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ABSTRACT

This research was about the Knowledge and Acceptability of the Public on Off-The-Grid Living at the City in Central Philippines. Living Off-the-Grid not only means disconnecting to the public electric and water utility system as a result of saving money, but it is a way of life, sustainability, resiliency, preparedness, and a behavior geared for survival. This study aimed to identify the level of knowledge and acceptability of the public about living Off-the-Grid within the city, as well as, the significant relationship between the level of knowledge and acceptability. The study anchored to different theories, self-sufficiency, sustainability, and disaster preparedness. This study was descriptive correlational research. A validated and reliable self-made survey questionnaire utilized to gather the needed data. A total of 400 respondents asked to answer the questionnaires. The result of this study shows that the level of knowledge of the public about Off-the-Grid living in terms of its benefits was knowledgeable, and the level of acceptability of living Off-the-Grid within the city was acceptable. Also, there was a significant relationship between the level of knowledge and the level of acceptability. Therefore, the higher the level of knowledge increases the level of acceptability.

Keywords: Off-the-Grid, Sustainability, Knowledge, Acceptability, Descriptive design

INTRODUCTION

Living in the city may not be for everyone, but there are certainly some universal observations and benefits of doing so [1]. According to Jagannath [2], living in the city has many positive impacts. The city lifestyle has a lot to offer for people, exceptionally vast opportunities. However, there are drawbacks when living in the cities, and one of these is the high cost of living. According to Ryan [3], the usual living expenses such as rent and utility bills, which include electricity, water, and other additional charges tend to be higher in big cities and become a monthly burden to the residents. Reid [4] challenged the present situation and posed questions such as: “Do you want to stop receiving electricity bills? Do you want to have things like electricity and hot water at any time, no matter what’s going on outside your property?” What if you can live in the city without paying any bills? Is it possible to do so? If anyone answers “yes” to these questions, then living Off-the-Grid is something that one needs to consider.

The term “living off the grid” takes part in the mid-1990s [5]. “Off-the-grid living is a system and lifestyle whereby people function without the support of any public utilities” [6]. It typically refers to living disconnected to the overall public electrical utility system [5,7,8,9]. Other definitions describe it as a form of reducing the carbon footprint [5]. Also, Dignan [10] stated that Off-the-Grid living means living off the land and without the need for government assistance. Moreover, Reid [4] and Page [9] explained it as an adventure in self-sufficiency and self-reliance. It is also said to be living in its purest form, which involves finding ways to provide for basic human needs and comforts [8]. Generally, people agree that to be Off-the-Grid means to disconnect from utilities, mostly electrical connections, but there are other agenda of why people prefer this kind of living.

The most cited reasons why people to choose living off-the-grid are the following:

a.) They find it as a way to minimize eco-footprint, b.) They like the idea of having lesser bills every month, c.) As a socio-political act [9], d.) To live off the grid is to live free from debt and learn how to be frugal with an equally satisfying life [4], e.) They are after the lifestyle which involves growing food, raising chickens

for eggs and meat, goats or cows for milk, and pigs for pork, bacon, and ham [4,8]. Besides, people nowadays wanted to pursue sustainable lifestyles, and be more conscious of the environment, and the impact on the surroundings [4,11], and they wanted to practice preparation for natural or human-made disasters [4,6,9,12].

In a statement by Reid [4], when people choose a self-sustaining, eco-friendly lifestyle, they are making the world a better place for future generations by decreasing environmental impact and by demonstrating that one can still have a successful and happy life with the unconventional lifestyle. Most cases of living Off-the-Grid take place in rural areas, which, according to Goode [13], the trend of people contemplating relocation to rural areas is increasing. Contrary to what most authors believed, Balson [12] said that it is possible to live Off-the-Grid in the city and suburban areas. A person or a family can still be prepared for the worst calamities without moving to the boondocks or buying a farm in far-flung places.

One excellent example of Off-the-Grid house is the *"Toronto Healthy House"* designed by architect Martin Liefhebber in 1996, which was one of two concept homes selected by the Canada Mortgage and Housing Corporation (CMHC) as part of their Healthy Housing Design Competition. What was to be built was a three-bedroom semi-detached home on a small lot in downtown Toronto. Beyond its intention to have excellent indoor air quality, it would have no connection to the electrical grid, water supply, and sewer system [14]. Rolf and Diana Paloheimo, along with their two children, have lived in this revolutionary house for almost 20 years. Here are the reflections of the owners 20 years later during an interview with Globe and Mail, Mr. Paloheimo says: *"We didn't expect to like the passive solar energy that comes through the south-facing windows as much as we do. It lights up the house quite a bit in the winter and together with the radiant-floor heating, the house is much cozier than we expected,"* while Ms. Paloheimo says: *"I didn't like the house at first because it was complicated, but I have grown to love it, especially the coziness and warmth on cold days. I also like it structurally and architecturally, with its little balconies and other features."* Toronto Healthy House saves 2/3rd of its operational cost compared to a conventional house of the same size [14].

Although living off-the-grid means hard work, a do-it-yourself lifestyle but, the benefits one will receive will make it all worthwhile [4,6]. Imagine how it will feel running one's home using clean or renewable energy sources with the pleasure of harvesting one's fruits and vegetables or picking up fresh brown eggs from their chicken coop [4]. In the same way, imagine living in the city having all its benefits and not worrying about the monthly bills? But more than those, one concern of this research is to let the public be knowledgeable about Off-the-Grid (OTG) dwelling and how it can serve as a survival shelter when a disaster happens.

Living Off-the-Grid has also become a survival mechanism [11]. The best illustration was about what happened in Eastern Visayas, especially in Samar & Leyte, when super typhoon Haiyan *(Yolanda)* struck the region, and everything collapsed into nothing. There was no electricity, no potable water, no communication lines, and no food sources which remained unrestored for months. According to Ross [6], when a major disaster strikes, any or all of the conventional utilities would be offline for unknown and extended periods. For example, the power grid is vulnerable to storms, cyber-attacks, and other outages [9]. One way to address these issues is to go partially Off-the-Grid to increase your self-reliance, security, and peace-of-mind in times when public utilities may fail [6]. Living Off-the-Grid and prepping is about developing an attitude, lifestyle, and patterns of behavior geared for survival [12]. Reinstated by Reid [4], to live Off-the-Grid is to be secured that whatever circumstances may happen, you and your family are prepared. Balson [12], said, "Learning how to survive is more important than the place you live in." With no hint of doubt, according to Joe [11], Off-the-Grid housing will reduce disaster risks and will likely define how people should be living in the future.

In the Philippines, living Off-the-Grid within the city is not yet materialized, probably because most Filipinos are not aware of what Off-the-Grid is, how it works, and what the benefits are. Besides, those who may have the concept/ideas are uninterested in pursuing it or think that it may cost more than the conventional houses. And those issues raised the following research questions stated in the statement of the problem.

Objectives

This study aimed to let the public be knowledgeable about Off-the-Grid (OTG) living and its benefits. Specifically, it sought to answer the following questions:

1. What is the level of knowledge of the public about Off-the-Grid living in terms of its benefits when they are taken collectively and grouped according to sex, age, civil status, educational attainment, and occupation?

2. What is the level of acceptability of living Off-the-Grid at the city in Central Philippines, where the respondents are collected and grouped according to sex, age, civil status, educational attainment, and occupation?

3. Is there a significant difference in the level of knowledge of the public when they are grouped according to sex, age, civil status, educational attainment, and occupation?

4. Is there a significant difference in the level of acceptability of the public when they are grouped according to sex, age, civil status, educational attainment, & occupation?

5. Is there a significant relationship between the level of knowledge and the level of acceptability?

Hypothesis

The study's hypotheses are the following:

1. There is no significant difference in the level of knowledge of the public when they are grouped according to sex, age, civil status, educational attainment, & occupation.

2. There is no significant difference in the level of acceptability of the public when they are grouped according to sex, age, civil status, educational attainment, & occupation.

3. There is no significant relationship between the level of knowledge and level of acceptability.

Framework

Living Off-the-Grid not only means disconnecting to the public electric and water utility system as a result of paying no monthly bills and saving money, but there is more of it. Off-the-Grid living is a way of life, a lifestyle, an adventure in self-sufficiency and self-reliance, and self-empowerment [6,9,12]. Besides, living Off-the-Grid is more about sustainability, resiliency, preparedness, and developing an attitude and patterns of behavior geared for survival.

This research is anchored to different theories: (1) Theories about lifestyle, self-sufficiency and self-reliance, and self-empowerment. (2) Theory and concept of sustainability and sustainable living, and (3) theory, practice, and methods of disaster preparedness and survival.

"Every man has a philosophy of life in thought, in word, or in deed, worked out in himself unconsciously. In possession of the very best, he may not know of its existence; with the very worst, he may pride himself as a paragon" [15]. In living Off-the-Grid, self-sufficiency and self-reliance are one of its qualities. Self-sufficiency is a way of life, knowledge, and skills to live independently in a simple and green way of living while in harmony with the environment [16].

Also, as stated by the father of the back-to-basics movement John Seymour [17], self-sufficiency "means the acceptance of complete responsibility for what you do or what you do not do, and one of its greatest rewards is the joy that comes from seeing each job right through - from sowing your own wheat to eating your own bread, from planting a field of pig food to slicing a side of bacon." He also added that self-sufficiency does not mean "going back" to the acceptance of a lower standard of living. On the contrary, it is the striving for a higher standard of living, for food which is fresh and organically-grown and good, for the good life in pleasant surroundings, for the health of body and peace of mind which come with hard varied work in the open air, and for the satisfaction that comes from doing difficult and intricate jobs well and successfully.

Living Off-the-Grid affects users' lifestyles. It changes the patterns of behavior, interaction, consumption, work, activity, and interests that describe how a person spends their time. According to Ross [6], going Off-the-Grid is a do-it-yourself lifestyle, it is necessary to learn how to fix things around your home, learn how to make gardens and to preserve foods, and it is essential to reduce your consumption of utilities. On her article, Ross suggested some ways to be more efficient in saving energy; these are to turn off lights when they aren't needed, use more efficient bulbs, like LED, and also to unplug electronics when they aren't in use (yes, many electronic devices will still use power when turned off if they are still plugged in). To add, you must check, and if necessary, repair/replace the seal on your doors and windows, so your home doesn't leak heat or air conditioning. If you can replace outdated appliances with more energy-efficient ones, one more thing is, try to do errands without using appliances, like using a broom on hard floors instead of a vacuum cleaner. Practice taking shorter showers or switch to showers if you take baths. And finally, before you start, take a good look at your utility bills and note how much you consume. Then track your progress each month. You should see a notable reduction in usage and a cheaper bill. Keep trying to find new ways to conserve and see how it impacts your consumption.

Living Off-the-Grid is challenging. It influences an individual's self-awareness, choices, goals, determination, and strengths, and weaknesses. As stated by Page [9], living Off-the-Grid is all about self-empowerment and taking care of ourselves, our family, our community, and our environment.

On the theory and concept of sustainability, living Off-the-Grid is one of the approaches of sustainable living. According to Kuhlman & Farrington [18], the idea of sustainability was first coined in forestry, which means never harvesting more than what the forest yields in new growth. Also, the Office of Sustainability of the University of Alberta [19] stated that "sustainability means meeting our own needs without compromising the ability of future generations to meet their own needs."

According to Purvis, Mao, & Robinson [20], sustainability had three pillars, it is commonly represented by three intersecting circles with overall sustainability at the center, these are the economic, social, and environmental sustainability. As stated by the Office of Sustainability of the University of Alberta [19], on Social Sustainability, universal human rights and necessities are attainable by all people who have access to enough resources to keep their families and communities healthy and secure. While on Economic Sustainability, human populations across the globe can maintain their independence and have access to the resources that they require, financial and other, to meet their needs. And for Environmental Sustainability, ecological integrity is maintained; all of the Earth's environmental systems are kept in balance while humans consume natural resources within them at a rate where they can replenish themselves. On the other hand, sustainable living is one of the parts of sustainability. As stated by Kukreja [21], sustainable living is the practice of reducing your demand on natural resources by ensuring that you replace what you use to the most effective of your ability, much the same as to avoid consuming the products that don't promote sustainability through changing your habit and start becoming more on sustainable lifestyle.

Other authors defined sustainable living as (1) a lifestyle that attempts to reduce an individual's or society's use of the Earth's natural resources and personal resources. (2) generally refer to using as few resources as possible, reducing carbon footprints, and reducing environmental damage. (3) Rethinking our ways of living, how we buy, and what we consume, how we organize our daily life, altering the way we socialize, exchange, share, educate, and build identities. Also, Kukreja [21] suggested easy ways to practice sustainable living; these are first, become a member of a community garden to promote sustainable living in your area. Gardens create green spaces; it offsets carbon emissions. Next, practice minimalism/minimalist lifestyle, everything you own and use is put to its maximum purpose. Then, change the lights in your house, use energy-efficient lightings. Another way is you must become more efficient with your errands, reduce your reliance on fossil fuels. You can also start using natural cleaners; by using natural cleaners, you are reducing the amount of plastic packaging is made. You can even walk, rides a bike or carpool to work, by reducing pollution and the consumption of natural resources. Then you can spend more time reading and playing games, by reducing your reliance on entertainment forms that require energy and natural remedies you can help to reduce the demand. Also, try to get on a more natural sleep schedule. You must reduce, reuse, and recycle as well. Make it a habit to unplug devices when not in use. In addition, buy a right-sized house, a smaller home is going to consume less energy as compared to a

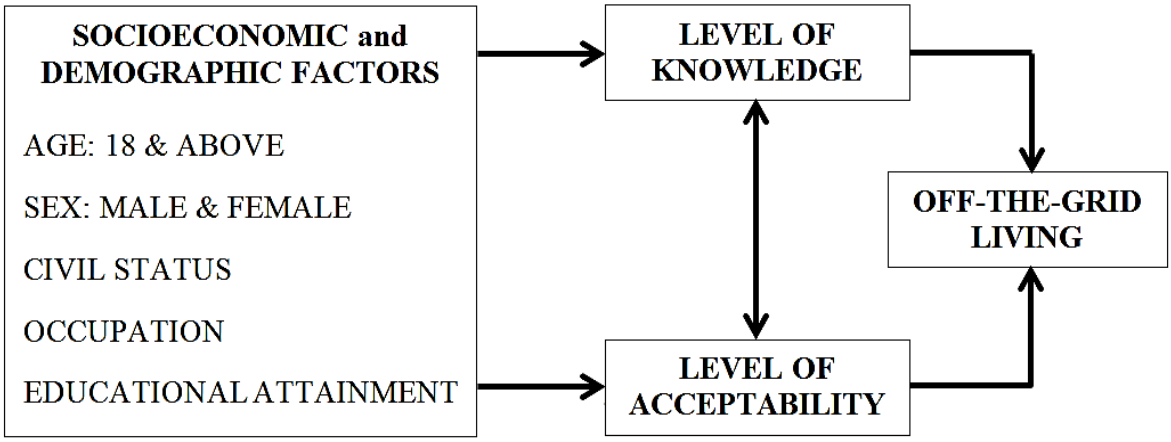
big house. Use daylight as much as possible; sunlight is free and doesn't cost anything. One more thing, change your washing habits, we wash everything too much, practice taking short and times showers, washing dishes, etc. Don't forget to choose renewable energy and buy products with less packaging. Finally, ditch the plastic, switch to reusable bags. Professor Cohen [22], in his journal *"Understanding the Sustainable Lifestyle,"* said that "What unifies the people pursuing a sustainable lifestyle is that consumption is a means and not an end. The winner isn't the one who accumulates the most stuff, but the one who lives the fullest life."

Another theory that this research is anchored to is on the theory, practice, and methods of disaster preparedness and survival. "In order to mitigate the losses and to prevent disaster situations, local community, country, and the international environment should be prepared." Quoted from Prof. Luka Kovacic, a conscientious and gifted teacher, diligent and organized scientist, and professor who was always ready to help both students and colleagues [23]. Being prepared and knowing what to do can reduce fear and anxiety; therefore, communities, families, and individuals should know what to do in the events of disaster [24].

The Off-the-Grid structure is considered a standalone structure. Off-the-Grid sources of electricity include renewable methods like solar power, wind power, mini water turbine, fossil fuel power like generators, and battery systems to store the excess energy [6]. While for the water system source, it includes the most common source a private deep well, rainwater harvesting, and greywater recycling. Also, water-efficient fixtures like dual-flush water closets, waterless urinals, faucet aerators, low-flow showerheads, and efficient dishwashers and washing machines are some of the accessories and appliances that can help to save water. Therefore, because of those components, features, characteristics, and resiliency of Off-the-Grid structure, it is safe to say that it can survive on different kinds of disasters.

In this study, the level of knowledge of the public about Off-the-Grid living in terms of its benefits and the level of acceptability of living Off-the-Grid in the city is measured according to socioeconomic characteristics. According to American Psychological Association [25], socioeconomic status (SES) encompasses not just income but also educational attainment, financial security, and subjective perceptions of social status and social class, and it may also cover quality of life attributes as well as the opportunities and privileges afforded to people within society. Other authors defined socioeconomic status as (1) a composite measure of an individual's economic and sociological standing. (2) the position of an individual on a social-economic scale that measures factors such as education, income, type of occupation, place of residence, and, in some populations, heritage, and religion [26]. Among that socioeconomic status, occupation, and educational attainment are the significant factors that strongly affect the level of knowledge and acceptability of the public about Off-the-Grid living. As shown in the schematic diagram, socioeconomic (i.e., occupation and educational attainment) and demographics (i.e., age, sex, and civil status) factors are the independent variables that are stable and unaffected by the other variables, it is measurable, and it is the presumed cause [27], while the level of knowledge and the level of acceptability are the dependent variables that depend on socioeconomic and demographic factors, it is the presumed effect [27]. And the level of knowledge was linked to the level of acceptability, which means there is a relationship between the two dependent variables.

Figure 1 *Schematic Diagram of the Framework*



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METHODOLOGY

This chapter indicates the location of the study and who are the respondents and describes the research design, population and sampling technique, data gathering instrument (validity and reliability), data gathering procedure, and the different statistical tool to analyze the data. The methodology is the systematic, theoretical analysis of the methods applied to a field of study that offers the theoretical underpinning for understanding which way, set of techniques or best practices which can be used to a specific case, for example, to calculate a particular result [28].

Research Design

The method to conduct this study is the use of Quantitative research method that attempts to maximize objectivity, replicability, and generalizability of findings, and is generally fascinated by prediction. The key features of quantitative studies are the utilization of instruments like tests or surveys to gather information and data, and reliance on probability theory to check statistical hypotheses that correspond to research questions of interest [29].

In this study, the researcher used descriptive research design (specifically through a descriptive survey, one of the types of descriptive research) to determine the level of knowledge and acceptability of living Off-the-Grid in the city. The descriptive design is most helpful for describing phenomena or events regarding that very little is thought or for identifying new or emerging aspects. Additionally, the results of descriptive studies are typically used as the basis for further research. According to Dulock [30], characteristics of descriptive research are: "(1) there is no manipulation or control of variables and thus no independent variable. There may be one or more outcome variables. (2) The purpose is to describe one or more variables and determine if there is an association between two or more variables. Determining cause and effect (causal) relationships is not the goal. (3) The current status of the phenomenon in a naturalistic setting is usually what is being observed, described, or documented. (4) Subjects are selected on the basis that they possess the information or characteristics (such as feelings, values, attitudes, or health-illness status) that are the focus of the study." Also, he stated that a descriptive survey is a research design that collects data from a portion of a target population to describe preferences, practices, characteristics, commonalities, or variations. And the strengths of a survey are that it's potential to collect information on a limited range of variables from an oversized number of subjects, and it is used for many different topics and populations.

Respondents

The study was conducted in the city of Iloilo, Region VI, Western Visayas, Philippines. Iloilo City is composed of seven (7) administrative districts (i.e., Arevalo, Molo, Mandurriao, City Proper, La Paz, Jaro, and Lapuz) that cover the 180 barangays, with a land area of 78.34 square kilometers or 30.25 square miles [31,32,33].

According to the Philippine Statistics Authority [34], Brinkhoff [35], and PhilAtlas [33], Iloilo city's population, as determined by the 2015 Census was 447,992. Therefore the total respondents of this study were four hundred (400) citizens taken out from the total population of Iloilo city computed using Yamane's formula that provides a simplified formula to calculate sample sizes [36].

Population and Sampling Technique

The data from this study was collected from the sample size taken from the population of Iloilo city.

Quota Sampling was used to divide the sample size taken from the population of Iloilo city into seven (7) subgroups represented by the seven administrative districts. And Stratified Sampling was used in each subgroup with equal allocation. According to Singh & Masuku [37] and Shantikumar [38], in quota sampling, the population is first segmented into mutually exclusive sub-groups, and the selection of the sample is non-random which makes the technique one of non-probability sampling. While in stratified sampling, it is a useful method for data collection if the population is heterogeneous. In this method, the entire mixed population is

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divided into a number of homogeneous groups, usually known as Strata. Also, Lohr [39] stated that stratified sampling, if done correctly, will give more precise estimates for the whole population.

Data Gathering Instrument

In this study, the researcher used a survey questionnaire as a means of gathering data to determine the level of knowledge and acceptability of the respondents about living Off-the-Grid in the city and its benefits.

The survey questionnaire had a letter that introduces the study to the respondents and requesting their participation in the survey and assuring their identity confidential. And it had three parts.

Part 1 is the personal information of the respondents; their name, which is optional, age, sex, highest educational attainment, civil status, and occupation.

Part 2 is the questionnaire proper for determining the level of knowledge of respondents about Off-the-Grid and its benefits.

Part 3 is the questionnaire proper for determining the level of acceptability of the respondents about living Off-the-Grid within the city.

For the responses to each part, the respondents were given four (4) options to choose from. Each option was given numerical weight to quantify the data with corresponding verbal interpretation.

The following are the options and mean score interpretation:

Table 1 *Level of Knowledge Questionnaire*

Choices	***Weight***		***Likert Scale***	***Mean Score Range***	***Verbal Interpretation***
	(Positive)	***(Negative)***			
1	4	1	Strongly Agree	3.25 - 4.00	Highly Knowledgeable
2	3	2	Agree	2.50 - 3.24	Knowledgeable
3	2	3	Disagree	1.75 - 2.49	Less Knowledgeable
4	1	4	Strongly Disagree	1.00 - 1.74	Not Knowledgeable

Table 2 *Level of Acceptability Questionnaire*

Choices	***Weight***		***Likert Scale***	***Mean Score Range***	***Verbal Interpretation***
	(Positive)	***(Negative)***			
1	4	1	Strongly Agree	3.25 - 4.00	Highly Acceptable
2	3	2	Agree	2.50 - 3.24	Acceptable
3	2	3	Disagree	1.75 - 2.49	Likely Acceptable
4	1	4	Strongly Disagree	1.00 - 1.74	Not Acceptable

Validity & Reliability

According to Tavakol & Dennick [40], validity and reliability are two fundamental elements in the evaluation of a measurement instrument.

In this study, the survey questionnaire for the level of knowledge and acceptability of living Off-the-Grid in the city and its benefits were subjected to Content Validity Ratio (CVR) by the jury of experts.

"The content validity ratio, originally proposed by Lawshe, is widely used to quantify content validity and yet methods used to calculate the original critical values were never reported" [41].

The content validity of the instrument was presented to fifteen (15) juries of an expert with a Master's Degree and Doctorate Degree in Architecture, Urban Design, and the like. And it was evaluated based on the criteria present by Lawshe.

To interpret the ratings of the juries, the researcher used the "Simplified Table of CVRcritical Including the Number of Experts Required to Agree on an Item Essential" form the Critical Values for Lawshe's Content Validity Ratio.

The ratings of the fifteen juries lead to a decision that all seventeen (17) questions for the level of knowledge and ten (10) questions for the level of acceptability were accepted for the reliability of the study, with a CVI value of 0.901.

For the reliability of the instrument, the researcher used Cronbach's Alpha. Reliability is involved with the strength of an instrument to measure consistently [40]. Cronbach's alpha is one of the most widely used measures of reliability and referred to as a measure of "internal consistency" reliability [42]. Also, Gliem & Gliem [43] stated that Cronbach's alpha is a test reliability technique that entails only a single test administration to render a unique calculation of the reliability for a given test.

The researcher conducted a dry-run test to subject the questionnaire in item analysis to 30 respondents. And the data gathered was tabulated with the use of Cronbach's alpha formula and resulted in 0.841 for the level of knowledge and 0.839 for the level of acceptability, which means both are reliable.

Data Gathering Procedure

After the validity and reliability of the survey questionnaire, the instrument was distributed to four hundred (400) respondents composed of different sectors of society (i.e., professionals in design and construction industry, business sector, government, schools, students in secondary and tertiary level, and local citizens) within the city which are 18 and above in age, male or female. The researcher introduced and explained the purpose of the study to the respondents. Distributed the survey questionnaires and conducted instructions to make sure each respondent understand the contents. After completing the survey, the researcher gathered the questionnaires from the respondents to undergo data analysis.

Statistical Treatment

The data gathered from the respondents was tallied to assist in statistical analysis. The data were analyzed using different statistical tools (i.e., descriptive and inferential statistics) based on the statement of the problem.

Descriptive statistics are tools that help us organize and summarize data, whether they come from studies of populations or samples [44]. While in inferential statistics, data are analyzed from a sample to make inferences in the more extensive collection of the population [45].

For Problem No. 1 and No. 2, the level of knowledge of the public about Off-the-Grid living in terms of its benefits and the level of acceptability of living Off-the-Grid in the city when they are taken collectively and grouped according to sex, age, civil status, educational attainment, and occupation; mean and standard deviation were used. According to Deshpande, Gogtay, & Thatte [46], mean is also called the arithmetic mean, is the

average value that is calculated by summation of all the readings and dividing it by the total number of values recorded in the study and the standard deviation (SD) is the square root of a particular value. Therefore it can either a + (positive) or – (negative) value. In simple words, the standard deviation (SD) is the square root of the variance [47].

The level of knowledge and acceptability of the public about living Off-the-Grid was interpreted using the following guide:

Table 3 *Level of Knowledge Guide*

Scale	***Verbal Interpretation***	***Descriptors***
3.25 - 4.00	Highly Knowledgeable	High level of knowledge about the benefits of living Off-the-Grid
2.50 - 3.24	Knowledgeable	Average level of knowledge about the benefits of living Off-the-Grid
1.75 - 2.49	Less Knowledgeable	Low level of knowledge about the benefits of living Off-the-Grid
1.00 - 1.74	Not Knowledgeable	No knowledge about the benefits of living Off-the-Grid

Table 4 *Level of Acceptability Guide*

Scale	***Verbal Interpretation***	***Descriptors***
3.25 - 4.00	Highly Acceptable	High level of acceptability of living Off-the-Grid in the city
2.50 - 3.24	Acceptable	Average level of acceptability of living Off-the-Grid in the city
1.75 - 2.49	Likely Acceptable	Low level of acceptability of living Off-the-Grid in the city
1.00 - 1.74	Not Acceptable	Not acceptable to live Off-the-Grid in the city

For Problem No. 3 and No. 4, to determine if there is a significant difference in the level of knowledge and acceptability of the public when they are grouped according to sex, age, civil status, educational attainment, and occupation; t-test and One-way ANOVA were used. According to Kim [48], t-test is a type of statistical test that is used to compare the means of two groups, while One-way ANOVA according to Murray [49], is a statistical method to determine whether there are any differences between the means of two or more independent groups, where the groups are defined by the outcomes for a single categorical variable.

For Problem No. 5, to determine if there is a significant relationship between the level of knowledge and level of acceptability, Pearson Product Moment (PPM) was used. As stated by Hall [50], the Pearson's *r*

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coefficient (or r^2), also known as the Pearson Product-Moment Correlation is a statistical measure of the strength of a linear relationship between paired data.

RESULTS AND DISCUSSIONS

This chapter focused on the data gathered by the researcher using the validated and reliable self-made survey questionnaire, the analysis of the obtained data, and the equivalent interpretation of the findings collected for this research. This study aimed to determine the level of knowledge and acceptability of the public on Off-the-Grid living.

The self-made survey questionnaire had three parts. Part I consisted of the respondent's profile, Part II is the question proper with seventeen (17) items that determined the respondent's level of knowledge about Off-the-Grid living in terms of its benefits, and Part III is the question proper with ten (10) items that determined the respondent's level of acceptability on living Off-the-Grid within the city.

The data was presented in tabular forms to provide a clearer understanding of the study. The tubular presentations were arranged according to the sequence of the problem of the study.

Table 5 presented the mean score and standard deviation of the level of knowledge of the public about Off-the-Grid living in terms of its benefits when they are taken collectively and grouped according to sex, age, civil status, educational attainment, and occupation, means they were knowledgeable.

Sex. The results for sex revealed that females had a higher mean score of 3.18 and a standard deviation of 0.493 compare to the male who had a 3.14 mean score and 0.484 standard deviations.

According to Chen, Peterson, Hull, Lee, Hong, & Liu [51] and Awan & Abbasi [52], female had higher level of environmental awareness than male, because due to the reason that most of the female are engaged in cleanness of home and take other social responsibilities at home, while male had low level of awareness mainly because that they are not often involved in domestic duties. Besides, Zelezny, Chua, & Aldrich [53], found that female exhibit more pro-environmental behavior than the male. In line with, Ewert & Baker [54], stated that females had higher mean scores of pro-environment behavior than males. Also, the results agreed to the findings of Bhatia & Bhatia [55] and Anbalagan & Viswanathan [56], that females had higher environmental awareness than male.

Though table 5 shows that both females & males are knowledgeable, which means they both have an average level of knowledge about the benefits of living Off-the-Grid, but females still got a higher mean score. It implies that females are more knowledgeable about the benefits of living Off-the-Grid because they are more concerned about the environment and do more beneficial measures to care, help, and impact the environment than males do. But still, males are knowledgeable, which means they know what Off-the-Grid living and its benefits, and they know what their responsibilities are and how they can impact the environment.

Table 5 *Level of knowledge of the public about Off-the-Grid living in terms of its benefits when they are taken collectively and grouped according to sex, age, civil status, educational attainment, and occupation (n = 400)*

Variables	***Classifications***	***n***	***Mean***	***SD***	***Verbal Interpretation***
Sex	Male	184	3.14	0.493	Knowledgeable
	Female	216	3.18	0.484	Knowledgeable
Age	Younger	245	3.13	0.480	Knowledgeable
	Older	115	3.20	0.499	Knowledgeable

Civil Status	Single	251	3.15	0.467	Knowledgeable
	Married	149	3.18	0.523	Knowledgeable
Educational Attainment	Secondary	97	3.08	0.453	Knowledgeable
	Tertiary	155	3.18	0.467	Knowledgeable
	Graduate	132	3.17	0.525	Knowledgeable
	Postgraduate	16	3.43	0.494	Highly Knowledgeable
Occupation	Government Employee	77	3.24	0.429	Knowledgeable
	Private Employee	65	3.14	0.466	Knowledgeable
	Self-employed	111	3.13	0.541	Knowledgeable
	Student	147	3.15	0.486	Knowledgeable
Mean of Means		**400**	**3.16**	**0.488**	**Knowledgeable**

Age. However, results for age revealed that older respondents at the age of 33 and above got a higher mean score compared to younger respondents at the age of 18 to 32. Older respondents got a mean score of 3.20 and a standard deviation of 0.499. In contrast, younger respondents got a mean score of 3.13 and a standard deviation of 0.480.

According to Xia, Zuo, Skitmore, Buys, & Hu [57], the majority of older respondents have sufficient knowledge of the holistic aspects of sustainability, as they recognize the importance of environment protection and would like to lead a more environmentally friendly lifestyle. Also, the authors found out that most respondents agree on the importance of energy and water-saving, recycling, and using fewer products that are harmful to the environment. Furthermore, most respondents manage to save energy in their daily activities. For example, more than 90% of respondents use as little water as necessary and turn off lights and electrical devices when not in use. It confirms the findings of Wiernik, Ones, & Dilchert [58] that older individuals are somewhat more likely to engage with nature, avoid environmental harm, and conserve raw materials and natural resources. In contrast, Saraiva, Almeida, Bragança, & Barbosa [59], said that high school respondents do not perform sustainable practices in their homes very often, and do not have the desire to teach these practices to their families even though they had a suitable level of sustainability awareness. In line with, Msengi, Doe, Wilson, Fowler, Wigginton, Olorunyomi, & Morel [60], stated that a majority of the students at their twenties acknowledged the significance of sustainability, and added that the value of a sustainable environment had been a significant issue to millennials.

Even though older and younger respondents had different levels of knowledge, both age groups interpreted as the average level of knowledge about the benefits of living Off-the-Grid. But still, older respondents got a higher mean score, which implies that older people have more information about the benefits of sustainable living, simply because they are more experienced, wiser, and conscious about their ways and daily activities. Also, they are more concerned about a sustainable lifestyle and their impact on the environment.

Civil status. The result for civil status revealed that married respondents got a higher mean score compared to the single respondents in the overall scoring under civil status. Married respondents got a mean score of 3.18 and a standard deviation of 0.523. In contrast, single respondents got a mean score of 3.15 and a standard deviation of 0.467, both interpreted as the average level of knowledge.

According to Diamantopoulos, Schlegelmilch, Sinkovics, & Bohlen [61], they pointed out that there was no clear evidence emerges, suggesting that married people are any more environmentally conscious than single

individuals in terms of their knowledge. But authors Nes, Røysamb, Harris, Czajkowski, & Tambs [62] found out that married males and females had a higher mean score compared to unmarried counterparts. In line with, Gutiérrez-Vega, Esparza-Del Villar, Carrillo-Saucedo, & Montañez-Alvarado [63], agreed on the findings, stated that married older adults had a higher mean score compared to single older adults.

Though, both classifications interpreted as the same level of knowledge about the benefits of living Off-the-Grid, married respondents got a higher mean score. It means that married individuals are more aware of sustainable lifestyles and the benefits of living Off-the-grid because they are more concerned and worried about their surroundings and environment and take pro-environmental actions for the sake of the future of their family and children.

Educational attainment. Moreover, the highest overall mean score for educational attainment was for the postgraduate, and the lowest was for the secondary. The postgraduate respondents got a mean score of 3.43 and a standard deviation of 0.494, while secondary respondents got the lowest mean score of 3.08 and a standard deviation of 0.453. The tertiary and graduate respondents got almost the same mean score of 3.18 and 3.17, respectively, with 0.01 differences in favor of tertiary. Postgraduate respondents interpreted as the high level of knowledge about the benefits of living Off-the-Grid and the rest of the categories interpreted as the average level of knowledge.

According to the University of Groningen [64], postgraduate degree certainly helps individuals to stand out amongst others who haven't obtained doctoral qualifications, and to acquire knowledge at a higher level than bachelor's degree. Also, Hooley [65], said that postgraduate qualifications probably reward individuals more in some sectors than others. While secondary students according to Saraiva et al. [59], had an appropriate level of sustainability awareness, also, Sobri & Rahman [66]; Ahamad & Ariffin [67]; and Msengi et al. [60], said that a majority of the students acknowledged the significance of sustainability. Moreover, Xiao & Hong [68] noted that higher levels of education were associated with higher levels of environmental knowledge.

Among the levels of educational attainment, postgraduate respondents got the highest mean score. It suggests that the higher literacy levels an individual had, the more knowledgeable, informative, and learned he/she become, which means that postgraduate respondents are more environmentally oriented and concerned, and much educated about sustainability and self-sufficiency.

Occupation. Furthermore, the result for occupation revealed that government employees and self-employed got the highest and lowest mean scores, respectively. Government employees got a mean score of 3.24 and a standard deviation of 0.429, while self-employed got the lowest mean score of 3.13 and a standard deviation of 0.541. Students and private employees got almost the same mean score of 3.15 and 3.14, respectively. However, they have different mean scores, all groups of occupations interpreted as the average level of knowledge about the benefits of living Off-the-Grid.

According to Awan & Abbasi [52], professionals had higher mean scores compared to self-employed, which means professionals had a higher level of environmental knowledge and awareness compared to self-employed. Besides, Melgar, Mussio, & Rossi [69] stated that government employee seems to be more worried about environmental issues, and they are also more likely to take pro-environmental actions. Moreover, Chen et al. [51], said that employed respondents had higher odds of pro-environmental behavior than unemployed ones. The authors added that employed respondents had the advantage of joining the pro-environmental practices organized by employers, such as environmental education and environmental volunteering, which can strengthen their level of environmental knowledge and awareness.

Though, all classifications interpreted as the same level of knowledge, government employees got the highest mean score about Off-the-Grid living and its benefits. It indicates that individuals working in the government are more aware of the sustainable structure and how it impacts on the environment.

The last row in table 5 is the mean of means or the overall mean of the level of knowledge of the public about Off-the-Grid living in terms of its benefits when they are taken collectively. The overall mean got a score

of 3.16 and a standard deviation of 0.488, which means that the level of knowledge of the public about the benefits of living Off-the-Grid was average, as interpreted according to the mean score range.

Table 6 presented the mean score and standard deviation of the level of acceptability of living Off-the-Grid at the city in Central Philippines, where the respondents are collected and grouped according to sex, age, civil status, educational attainment, and occupation means they accepted the idea of living Off-the-Grid.

Table 6 *Level of acceptability of living Off-the-Grid at the city in Central Philippines where the respondents are collected and grouped according to sex, age, civil status, educational attainment, and occupation (n = 400)*

Variables	***Classifications***	***n***	***Mean***	***SD***	***Verbal Interpretation***
Sex	Male	184	3.17	0.493	Acceptable
	Female	216	3.18	0.484	Acceptable
Age	Younger	245	3.13	0.480	Acceptable
	Older	115	3.25	0.499	Highly Acceptable
Civil Status	Single	251	3.13	0.467	Acceptable
	Married	149	3.25	0.523	Highly Acceptable
Educational Attainment	Secondary	97	3.03	0.453	Acceptable
	Tertiary	155	3.20	0.467	Acceptable
	Graduate	132	3.22	0.525	Acceptable
	Postgraduate	16	3.51	0.494	Highly Acceptable
Occupation	Government Employee	77	3.19	0.429	Acceptable
	Private Employee	65	3.15	0.466	Acceptable
	Self-employed	111	3.18	0.541	Acceptable
	Student	147	3.18	0.486	Acceptable
Mean of Means		**400**	**3.18**	**0.509**	**Acceptable**

Sex. The results for sex revealed that females had a higher mean score of 3.18 and a standard deviation of 0.501 compare to the male who had a 3.17 mean score and 0.521 standard deviations. Even though female and male respondents had different levels of acceptability living Off-the-Grid in the city, both interpreted as the average level.

According to Knez, Thorsson, & Eliasson [70], females attribute more importance to environmental issues than males do. Also, Melgar et al. [69] agreed in the findings that women seem to be more worried about environmental issues, and they are also more likely to take pro-environmental actions than men. The result is consistent with previous findings based on the fact that women tend to be more sympathetic and collaborative and tend to exhibit some types of pro-environmental behavior to a greater extent than men do [53,71,72,73,74]. Moreover, a study of Wallhagen, Eriksson, & Sörqvist [75] confirms the result that females had a higher level of importance to environmental aspects in terms of energy, transport, land use, ecology, local environment, water, waste, and materials. Plus, women are more focused on environmentally-friendly behavior than men do [76].

Both females and males got the same average interpretation of the acceptability levels, which means they accepted the idea of living Off-the-Grid within the city. Still, females got a higher mean score, which implies

that females are more aware of the issues and impacts of sustainability, self-sufficiency and resiliency, and environmental challenges. Also, females are more likely to take pro-environmental actions than men do.

Age. However, results for age revealed that older respondents at the age of 33 and above got a higher mean score compared to younger respondents at the age of 18 to 32. Older respondents got a mean score of 3.25 and a standard deviation of 0.497, while younger respondents got a mean score of 3.13 and a standard deviation of 0.513. Older respondents interpreted as the high level of acceptability while younger respondents interpreted as the average level of acceptability of living Off-the-Grid in the city.

According to Melgar et al. [69], older people tend to take environmentally responsible actions more frequently than younger people. It may be related to the fact that older people could have more information and could be more conscious of the importance of taking pro-environmental actions. Moreover, older people seem to be more worried about the environment than younger people. Older individuals are more likely to have children, and they may try to preserve the environment in the long term because their children are the ones who will enjoy a cleaner environment in the future. This confirms to the findings of Wiernik et al. [58] and Otto & Kaiser [77], that older individuals nonetheless perform more pro-environmental behaviors due to their ingrained habits and frugal tendencies, while younger individuals may be more concerned about sustainability, but may lack the requisite knowledge to put this concern into action. In line with, Xia et al. [57] found that most older respondents agreed with paying a higher price for homes with environmentally friendly features.

Though a sustainable lifestyle is acceptable to younger respondents, older ones had highly accepted the concept of sustainability. It implies that older people welcome the pros and cons of sustainable living even they are in the city. Besides, they are more aware of the impacts of Off-the-Grid living on the environment, simply because of their pro-environmental behaviors.

Civil status. The result for civil status revealed that married respondents got a higher mean score compared to the single respondents in the overall scoring under civil status. Married respondents got a mean score of 3.25 and a standard deviation of 0.511, while single respondents got a mean score of 3.13 and a standard deviation of 0.504.

The results agreed to the finding of Melgar et al. [69], that marriage respondents shows a positive impact which means that they are more concern about the environment and take more pro-environment actions, while single respondents show the opposite effect, it reduces the probability of taking pro-environmental steps & of being concern about the surroundings.

Table 6 shows that the acceptability level of married respondents is high compared to their counterparts. It implies that married individuals are more knowledgeable about the advantages and disadvantages of Off-the-Grid living, and they highly accepted the idea. Additionally, they are more concerned and ready to take pro-environmental actions for the benefits of the environment.

Educational attainment. Moreover, the highest overall mean score for educational attainment was for the postgraduate, and the lowest was for the secondary. The postgraduate respondents got a mean score of 3.51 and a standard deviation of 0.404, while secondary respondents got the lowest mean score of 3.03 and a standard deviation of 0.433. The graduate and tertiary respondents got almost the same mean scores of 3.22 and 3.20 and the standard deviations of 0.502 and 0.546.

The result confirms the findings of Melgar et al. [69], a higher educational level also tends to raise the possibility of taking pro-environmental actions. Besides, more educated people tend to worried about the environment, and these effects are increasing at the educational level. In line with, Abdul-Wahab & Abdo [78], stated that more educated respondents assigned higher levels of environmental attitudes and issues than less educated ones. Hence, concern about environmental matters increased with an increase in education. Moreover, Xiao & Hong [68] noted that higher levels of education were associated with more environmentally oriented behaviors and environmental concerns.

Among the levels of educational attainment, postgraduate respondents got the highest level of acceptability of living Off-the-Grid in the city. It indicates that the highest level of learning can lead an individual to a firm decision. It shows in table 6 that among all classifications of different variables, postgraduate respondents got the highest mean score, which means they had the highest level of acceptability.

Occupation. Nevertheless, the result for occupation revealed that government employees got the highest mean score, while private employees got the lowest. Government employees got a mean score of 3.19 and a standard deviation of 0.487, while private employees got the lowest mean score of 3.15 and a standard deviation of 0.531. Self-employed respondents and students got the same mean score of 3.18 and a standard deviation of 0.502 and 0.521, respectively. However, they have different mean scores, all groups of occupations interpreted as the average level of acceptability of living Off-the-Grid in the city.

Authors Shen & Saijo [79] stated that full-time employees and self-employed respondents are less concerned about the environment, possibly because they care more about jobs and economic growth than environmental quality. However, Xiao & Hong [68] and Chen et al. [51] had opposing findings; they found that being employed did not reduce participation in environmentally oriented behaviors.

Though all classifications interpreted as the same level of acceptability, government employees got the highest mean score, which implies that they are more open to the idea of Off-the-Grid lifestyle in the city. Besides, they are more environmentally oriented and conscious of their actions concerning the environment.

The last row in table 6 is the mean of means or the overall mean of the level of acceptability of living Off-the-Grid at the city in Central Philippines when the respondents are taken collectively. The overall mean got a score of 3.18 and a standard deviation of 0.509, which means that the level of acceptability of the public of living Off-the-Grid in the city was average, as interpreted according to the mean score range.

Table 7 exhibited the result of the significant difference in the level of knowledge of the public when they are grouped according to sex, age, civil status, educational attainment, and occupation. The researcher used a t-test to compute the result for the variables sex, age, and civil status and used One-way ANOVA to compute the result for the variable's educational attainment and occupation taken from the respondents.

Table 7 *Significant difference in the level of knowledge of the public when they are grouped according to sex, age, civil status, educational attainment, and occupation (n = 400)*

Variables	***Classification***	***n***	***Mean***	***SD***	***p-value***	***Significant @ 0.05***	***Status of Hypothesis***
Sex	Male	184	3.14	0.493	0.439	Not Significant	Accepted
	Female	216	3.18	0.484			
Age	Younger	245	3.13	0.480	0.154	Not Significant	Accepted
	Older	115	3.20	0.499			
Civil Status	Single	251	3.15	0.467	0.520	Not Significant	Accepted
	Married	149	3.18	0.523			
Educational Attainment	Secondary	97	3.08	0.453	0.041	Significant	Rejected
	Tertiary	155	3.18	0.467			
	Graduate	132	3.17	0.525			
	Postgraduate	16	3.43	0.494			
Occupation	Government Employee	77	3.24	0.429	0.452	Not Significant	Accepted

	Private Employee	65	3.14	0.466			
	Self-employed	111	3.13	0.541			
	Student	147	3.15	0.486			

Sex. The table shows that the p-value for sex was 0.439, which was higher than the alpha of 0.05. It means that there was no significant difference in the level of knowledge of the public when grouped according to sex; therefore, the null hypothesis was accepted.

The result is consistent with earlier studies. In the survey conducted by Awan & Abbasi [52], they found that there was no significant difference in the level of environmental knowledge between males and females. Additionally, Bhatia & Bhatia [55] found that there was no significant difference between post-graduate male and female students in terms of environmental awareness. Similarly, Hayes [80] affirmed that gender and levels of scientific knowledge on environmental attitudes had no statistically significant difference. Also, Hooi Ting & Chin Cheng [81] agrees with the findings. It predicts no difference in the level of knowledge of the public when grouped according to sex, which signifies that even females are more knowledgeable; sex didn't affect the level of knowledge of the public concerning sustainability and environment.

Age. However, on the result for age, the p-value was 0.154, which was higher than the alpha of 0.05. It means that there was no significant difference in the level of knowledge of the public when grouped according to age; therefore, the null hypothesis was accepted.

The result confirms the findings of Wiernik et al. [58], that age does not appear to have a meaningful, reliable, and consistent relationship with environmental awareness and knowledge. Thus generation was generally unrelated to ecological consciousness and understanding of specific environmental issues and negligibly related to general environmental knowledge. It predicts no difference in the level of knowledge of the public when grouped according to age. The level of knowledge was not affected by their age, which implies that older and younger individual's level of expertise, knowledge, and experience had no much impact on ecological and environmental issues and concerns, and on sustainability and self-sufficiency.

Civil status. Nonetheless, the result revealed that the p-value for civil status was 0.520, which was higher than the alpha of 0.05. It means that there was no significant difference in the level of knowledge of the public when grouped according to civil status; therefore, the null hypothesis was accepted.

The result was comparable to the findings of Diamantopoulos et al. [61] that the levels of environmental knowledge of married and single individuals had no significant difference. Also, Gutiérrez-Vega et al. [63] found that there was no significant difference in civil status concerning the environmental component of quality of life. It predicts no difference in the level of knowledge of the public when grouped according to civil status. Being married didn't make you more knowledgeable with regards to Off-the-Grid lifestyle or less knowledgeable when you're single. It signifies that the relationship, situations, and experiences relating to marital status didn't affect individual actions and concerns with regards to the environment and the impact of sustainability.

Educational attainment. Moreover, the p-value for educational attainment was 0.041, which was less than the alpha of 0.05. It means that there was a significant difference in the level of knowledge of the public when grouped according to educational attainment; as a result, the null hypothesis was rejected.

The result affirms the findings of Sunthonkanokpong & Murphy [82], they found that the sustainability level of awareness between the students of different year levels was significant. Also, Saraiva et al. [59], found that sustainability awareness levels between the students in Brazilian and in Portugal schools were significant. It predicts a difference in the level of knowledge of the public when grouped according to educational attainment. Postgraduate respondents are highly knowledgeable compared to their foes. It signifies that the higher education levels an individual had, the more learning he/she got. Also, the levels of educational attainment had an impact on an individual's awareness concerning lifestyle, actions, attitudes, and behaviors toward the environment and sustainability.

Occupation. Nevertheless, the table shows that the p-value for occupation was 0.452, which was higher than the alpha of 0.05. It means that there was no significant difference in the level of knowledge of the public when grouped according to occupation; therefore, the null hypothesis was accepted.

The result corresponds to the study of Xiao & Hong [68], that occupation had no significant difference with regards to environmental knowledge. It was affirmed by Awan & Abbasi [52], that there was no statistically significant difference between the professions of employed and self-employed concerning environmental awareness.

It predicts no difference in the level of knowledge of the public when grouped according to the occupation. Being employed or unemployed didn't make you more or less knowledgeable. It implies that occupation had no influence on an individual's level of knowledge regarding off-the-Grid living and sustainability.

Table 8 exhibited the result of the significant difference in the level of acceptability of the public when they are grouped according to sex, age, civil status, educational attainment, and occupation. The researcher used a t-test to compute the result for the variables sex, age, and civil status and used One-way ANOVA to compute the result for the variable's educational attainment & occupation taken from the respondents.

Sex. The table shows that the p-value for sex was 0.769, which was higher than the alpha of 0.05. It means that there was no significant difference in the level of acceptability of the public when grouped according to sex; therefore, the null hypothesis was accepted.

The result was affirmed, Wallhagen et al. [75], found that the importance of environmental aspects in terms of energy, transport, land use, ecology, local environment, water, waste, and materials had no significant difference between females and males. Besides, Vicente-Molina et al. [76] found that women are more concerned than men about environmental attitudes and issues. Still, the difference is not significant; also, authors Hayes [80]; Tindall, Davies, & MauboulÈs [83]; and Xiao et al. [68], supports the findings.

It predicts no difference in the level of acceptability of the public when grouped according to sex. It signifies that even though females got a higher level of acceptability compared to their male counterparts, it didn't affect the approval level of the public concerning Off-the-Grid living in the city & the issues regarding environmental impacts.

Age. However, on the result for age, the p-value was 0.023, which was less than the alpha of 0.05. It means there was a significant difference in the level of acceptability of the public when grouped according to age; therefore, the null hypothesis was rejected.

Table 8 *Significant difference in the level of acceptability of the public when they are grouped according to sex, age, civil status, educational attainment, and occupation (n = 400)*

Variables	***Classification***	***n***	***Mean***	***SD***	***p-value***	***Significant @ 0.05***	***Status of Hypothesis***
Sex	Male	184	3.17	0.521	0.769	Not Significant	Accepted
	Female	216	3.18	0.501			
Age	Younger	245	3.13	0.513	0.023	Significant	Rejected
	Older	115	3.25	0.497			
Civil Status	Single	251	3.13	0.504	0.017	Significant	Rejected
	Married	149	3.25	0.511			
	Secondary	97	3.03	0.433	0.001	Significant	Rejected

Educational Attainment	Tertiary	155	3.20	0.546			
	Graduate	132	3.22	0.502			
	Postgraduate	16	3.51	0.404			
Occupation	Government Employee	77	3.19	0.487	0.965	Not Significant	Accepted
	Private Employee	65	3.15	0.531			
	Self-employed	111	3.18	0.502			
	Student	147	3.18	0.521			

The result was comparable to the findings of Shen & Saijo [79], they found that there was a significant difference with regards to environmental concerns among age groups. Their result implies that older respondents are more concerned about any kinds of ecological problems and prefer pro-environmental behavior more than the younger generations do. Similarly, authors Otto & Kaiser [77] also agreed on the findings. Moreover, Wiernik et al. [58] stated that older individuals appeared to perform more practices related to active protection of ecosystems and avoidance of pollution and were more likely to engage in activities in the outdoors. Also, older individuals engage in more conservation behaviors (i.e., reducing use, avoiding waste, reusing, repurposing, and recycling) than younger individuals. Maybe because older individuals tend to be more conscientious [84] and because they value frugality [85].

It predicts a difference in the level of acceptability of the public when grouped according to age. Older people had a higher level of acceptability compared to younger ones. It implies that older people can decide firmly concerning sustainability and environmental concerns and issues, maybe because older individuals are more sensible and experienced and meticulous and prudent.

Civil status. Nonetheless, the result revealed that the p-value for civil status was 0.017, which was less than the alpha of 0.05. It means that there was a significant difference in the level of acceptability of the public when grouped according to civil status; therefore, the null hypothesis was rejected.

The result confirms the findings of Melgar et al. [69] that civil status had a significant difference with regards to environmental concerns and pro-environmental actions among married and single respondents. It means that both married and single respondents had positive implications in their surroundings and environment.

It predicts a difference in the level of acceptability of the public when grouped according to civil status. Married respondents had a significant impact on decision making compared to their counterparts. It signifies that they are more open to the idea of living Off-the-Grid in the city despite the consequences. To add, married individuals are more conscious of their actions towards environmental issues and concerns.

Educational attainment. Moreover, the p-value for educational attainment was 0.001, which was less than the alpha of 0.05. It means that there was a significant difference in the level of acceptability of the public when grouped according to educational attainment; as a result, the null hypothesis was rejected.

Authors Shen & Saijo [79] supports the result. In their findings, they found that there was a significant difference in respect to environmental concerns across levels of education. The authors point out that a higher level of literacy is more environmentally concerned than those without or lower degrees.

It predicts a difference in the level of acceptability of the public when grouped according to educational attainment. Higher levels of education always play a significant role in decision making. It signifies that the more knowledgeable the individuals are, the more firm his/her level of acceptability. It shows in table 5 & 6 that the postgraduate respondents are highly knowledgeable and had the highest level of acceptability concerning sustainability and self-sufficiency compared to other levels of education.

Occupation. Nevertheless, the table shows that the p-value for occupation was 0.965, which was higher than the alpha of 0.05. It means that there was no significant difference in the level of acceptability of the public when grouped according to occupation; therefore, the null hypothesis was accepted.

The result corresponds to the study of Shen & Saijo [79], that occupation was irrelevant to environmental concerns. Their findings concluded that there was no significant difference in environmental

concerns across employment status. Also, Xiao & Hong [68] and Melgar et al. [69], supports the findings.

It predicts no difference in the level of acceptability of the public when grouped according to the occupation. Being employed or unemployed didn't affect an individual's level of acceptability. It implies that occupation did not influence an individual's judgment regarding off-the-Grid living, sustainability, and environmental concerns and issues.

Table 9 presented the result of the significant relationship between the level of knowledge and level of acceptability. The researcher used the Pearson Product Moment (PPM) to calculate. The result revealed that the p-value was 0.000, which is lower than the alpha of 0.05. It means that there was a significant relationship between the level of knowledge and the level of acceptability. Therefore, the null hypothesis was rejected.

Table 9 *Relationship between the level of knowledge and the level of acceptability (n = 400)*

Correlates	***p-value***	***Significant @ 0.05***	***Status of Hypothesis***
Level of Knowledge and Level of Acceptability	0.000	Significant	Rejected

According to Kim, Kim, & Thapa [86], there was a significant positive relationship between environmental knowledge and environmental impact, in which the higher the level of environmental knowledge increased environmental implications. Also, the authors added that the respondents with high levels of environmental expertise were more concerned about the adverse environmental effects. In line with, Cheng & Wu [87] stated that environmental knowledge significantly and positively influences environmental sensitivity, which means that there was a significant relationship. That is to say, respondents with a high level of knowledge on sustainable development and environmental protection are more concerned about local surroundings and the impact of their living habits on environments. Moreover, Xiao & Hong [68] stated that higher levels of environmental knowledge were associated with higher levels of environmental concerns.

There was a relationship between the level of knowledge and the level of acceptability. It signifies that the increase in the level of knowledge of the public about the benefits of living Off-the-Grid will also increase their level of acceptability of living Off-the-Grid in the city. It only shows that education plays a significant role in decision making. The more learned an individual, the more open he/she to new ideas and innovations, not only settling on the conventional lifestyle but exploring the impacts of sustainability.

FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

This chapter presents a summary of findings from the data gathered that are arranged according to the problem of the study with applied statistical treatment. Moreover, this chapter also presents the conclusions drawn from the study.

Findings

This study was concerned about the level of knowledge of the public about Off-the-Grid living in terms of its benefits and the level of acceptability of living Off-the-Grid at the city in Central Philippines. It also aimed to know the significant relationship between the level of knowledge and the level of acceptability of the public on Off-the-Grid living.

Findings revealed that the level of knowledge of the public about Off-the-Grid living in terms of its benefits when they are taken collectively and grouped according to sex, age, civil status, educational attainment, and occupation was knowledgeable, which means they have an average level of knowledge. But in terms of classifications under the educational attainment variable, postgraduate respondents were highly knowledgeable, as shown in table 5.

Similarly, results revealed that the level of acceptability of living Off-the-Grid at the city in Central Philippines where the respondents are collected and grouped according to sex, age, civil status, educational attainment, and occupation was acceptable, which means they have an average level of acceptability, as shown in table 6. However, older, married, and postgraduate respondents had a high level of acceptability, which means it was highly acceptable for them to live Off-the-Grid in the city.

Moreover, findings showed that there was no significant difference in the level of knowledge of the public when they are grouped according to sex, age, civil status, and occupation. Still, for educational attainment, there was a significant difference, as shown in table 7.

Similarly, findings revealed that there was no significant difference in the level of acceptability of the public when they are grouped according to sex and occupation. Still, for educational attainment, age, and civil status, there was a significant difference, as shown in table 8.

Nevertheless, the study found that there was a significant relationship between the level of knowledge and the level of acceptability, as shown in table 9.

Conclusions

The researcher concluded that the public was knowledgeable about Off-the-Grid living in terms of its benefits, which they have an average level of knowledge. And they accepted the idea of living Off-the-Grid in the city, which they have an average level of acceptability. Besides, the respondents at the city in Central Philippines (Iloilo City) were open to the idea of living Off-the-Grid, even though it can affect their usual routine, and can cost them a slightly higher compared to conventional living.

Moreover, the majority of the students were aware of sustainability and its effects on their surroundings. Postgraduate respondents were highly knowledgeable about the advantages of a sustainable lifestyle and how it impacts on the environment. Older, married, and learned individuals were the ones who highly accepted the concept of living Off-the-Grid within the city despite the consequences.

Furthermore, the study found that there was a significant positive relationship between the level of knowledge and the level of acceptability. The result showed that the higher the level of knowledge increases the level of acceptability. It means that education plays a major role, not only to improve public knowledge and awareness on sustainability, hence strengthening public decision making and realizing an individual's responsibility concerning the environment.

Recommendations

Based on the results of the study, the following recommendations are:

To the government, through the Housing and Urban Development Coordinating Council (HUDCC), the highest policy-making and coordinating office on shelter may consider the possibility of making a policy with regards to sustainable living (Off-the-Grid Living) within the city. Also, they may consider the building application procedure that the owner may not get into trouble with processing the documents concerning the possible changes of project utilities plans and layout.

To the real estate developers, may look into the possibilities of planning and designing a housing development with sustainable features or to add on their subdivision/development rules and policies that the owner/s are required to install sustainable housing features like solar panels, rainwater harvesting, energy-saving appliances, water-saving fixtures, greywater recycling, etc.

To households, you may explore what Off-the-Grid living is, and experience its benefits, despite the fact that it can affect your lifestyle, and can cost you a slightly higher compared to conventional dwellings.

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