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MEDIATION OF MENTAL HEALTH LITERACY ON SELF-STIGMA AND INTENT TO SEEK MENTAL HEALTH HELP OF MIDDLE-AGED FILIPINO ADULTS

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ABSTRACT

The mental health of Filipinos is declining significantly, but stigma continues to prevent individuals from seeking psychological support. Previous studies show that self-stigma and mental health literacy significantly influence help-seeking behavior, contributing to reluctance in seeking help. However, research on Filipino mental health remains limited, with most literature focusing on Filipino Americans, Filipino immigrants, or younger age groups. This study aimed to investigate the mediating role of mental health literacy between self-stigma and help-seeking intentions among middle-aged Filipino adults, utilizing the Knowledge-Attitude-Practice (KAP) theory. An online survey was conducted with 219 middle-aged Filipino adults, and the data were analyzed through linear regression and mediation analysis. Results revealed that self-stigma significantly predicted psychological help-seeking intentions, while mental health literacy did not mediate this relationship. The findings provide valuable insights into the help-seeking behavior of middle-aged Filipinos, highlighting the need for novel approaches to improve mental health care utilization in the Philippines.

Keywords: *Mental health literacy, self-stigma, help-seeking intent, Filipino, middle adulthood, middle-aged adults, Knowledge-Attitude-Practice Theory*

INTRODUCTION

Mental health is defined as the psychological state that constitutes an individual's overall well-being and capacity to function (Diehl et al., 2011; Sankar et al., 2017; Wren-Lewis & Alexandrova, 2021). It involves emotional stability influenced by biological (e.g., age, sex), psychological (e.g., personality traits, values), social (e.g., socioeconomic status), and environmental factors (e.g., stressors, discrimination; Coronel-Santos & Rodriguez-Macias, 2022). Various factors such as daily stress, social inequalities, discrimination, and lifestyle could negatively impact an individual's mental health (Allen et al., 2014; Liu et al., 2017; Schönfeld et al., 2015; Thoits, 2012), affecting interpersonal relationships, social functioning, and physical health (Vidourek & Burbage, 2019).

However, a key concern is that individuals experiencing mental health difficulties often avoid seeking professional help (Clement et al., 2015; Vidourek & Burbage, 2019), which exacerbates psychosocial impairment (Wallin et al., 2018). Stigma surrounding mental health is a significant barrier to seeking psychological help (Jennings et al., 2015), leading to discrimination, invalidation, and social alienation (Punla et al., 2022; Vally et al., 2018). As a result, social and emotional outcomes such as low self-esteem, feelings of shame, and lower life satisfaction and social adaptation emerge (Cheng et al., 2018; Mackenzie et al., 2019; Reyes et al., 2017; Reynders et al., 2013; Vally et al., 2018; Wallin et al., 2018).

In the Philippines, mental illness ranks as the third most common disability (Martinez et al., 2020; Taguibao & Rosenheck, 2020), with 88 out of 100,000 Filipinos suffering from a mental, neurological, or substance use disorder (Aruta et al., 2021; Maravilla & Tan, 2021). Despite this, Filipinos still have lower rates of seeking psychological help (Prim et al., 2023), resulting in unreported mental health cases in the country (Aperocho, 2023; Aruta et al., 2021). In addition, Filipinos also show greater reluctance to seek psychological help compared to American and Asian populations (Martinez et al., 2020). Chan and Litam (2021) explain these findings, suggesting that that fear of being a disgrace to the family is among the reasons that hinders Filipinos from seeking psychological help as the culture in the

Philippines emphasizes the importance of kin.

Moreover, mental health literacy also contributes to the reluctance to seek psychological help (Andary et al., 2023; Leonod & Tamayo, 2023), where greater knowledge of mental health concepts encourages help-seeking behavior among individuals (Adviso, 2022). Older adults tend to have lower mental health literacy (Gonçalves et al., 2014; Piper et al., 2018), which decreases their likelihood of seeking help (Eden et al., 2012; Elshaikh et al., 2023). Similarly, mental health literacy was found to be low in the general Filipino population (Argao et al., 2021; Bugtong-Diez, 2020), especially among older Filipinos (Valledor & De Guzman, 2023). Cultural misconceptions, such as beliefs in spiritual causes for mental illness (Tuliao, 2014), and stigmatizing attitudes (Bugtong-Diez, 2020; Chan & Litam, 2021; Rey et al., 2022), have been found to contribute to poor mental health literacy.

In essence, studies show that seeking psychological help is significantly influenced by mental health literacy and mental help-seeking intentions (Cheng et al., 2018; Lannin et al., 2015; Reynders et al., 2014; Tucker et al., 2013; Vally et al., 2018; Wallin et al., 2018). In the Philippines, reluctance to seek help is associated with internalized stigma (Puentespinosa et al., 2023; Tuliao, 2014; Yuduang et al., 2022) and low mental health literacy (Andary et al., 2023; Lasquites et al., 2024; Leonod & Tamayo, 2023). However, Filipino mental health studies are still limited as most of the available literature is among Filipino Americans or Filipino immigrants (Tuliao, 2014). Research on mental health in the Philippines has also been more focused on adolescents and young adults (Valledor & De Guzman, 2023) with limited studies available on older adults (Rey et al., 2022).

This study offers insights into the nature of mental health help-seeking behavior, while also highlighting the roles that mental health literacy and self-stigma play in shaping the state of mental health in the

Philippines. These are integral for advancing knowledge of concepts related to mental health, potentially contributing to the growing body of knowledge on mental health research, particularly within the context of middle-aged adult populations.

Theoretical Background

Knowledge-Attitude-Practice (KAP) Theory

Knowledge-Attitude-Practice (KAP) Theory explains human health-related behavior as a process that is achieved through the development of an individual's knowledge, attitude, and practice (Alsaleh et al., 2023; Wang et al., 2020). Badran (1995) defined these components. Firstly, knowledge is defined as the ability of an individual to acquire, retain, and utilize information through education. Meanwhile, attitudes were defined as an individual's predisposition to behave in a particular manner toward specific situations, with values being strongly associated with these attitudes. Lastly, practice involves the application of the principles and knowledge that an individual has learned, which translates into observable actions.

Previous studies have applied the KAP theory in measuring knowledge, attitudes, and practices on mental health (Azar et al., 2016; Azman et al., 2023; Samaksha et al., 2022; Upadhana et al., 2022). The theory determines what is known, believed, and practiced in a particular community and provides insights into what needs to be addressed (AshaRani et al., 2020). Zahid Iqbal et al. (2020) emphasized the role of knowledge about concepts related to mental health in improving mental health help-seeking practice and alleviating the risk of developing psychological disorders. Consistent with this, Samaksha et al. (2022) have found a significant association between knowledge and attitudes where a greater degree of knowledge results in better attitudes among psychiatric patients. Additional studies have also found that knowledge significantly influences attitudes and practices toward depression and anxiety (Azman et al., 2023; Upadhana et al., 2022).

In application, the KAP theory extends to understanding mental health literacy (i.e., knowledge) as a mediator of the relationship between self-stigma on psychological help-seeking (i.e., attitude) and intent to seek mental health help (i.e., practice) among middle-aged Filipino adults. In line with the previous findings on the role of knowledge in improving attitudes and practices, this study assumes that greater mental health literacy will be able to lessen self-stigma associated with mental health help-seeking and increase the likelihood of middle-aged Filipino adults seeking mental health help. Additionally, mental health literacy is expected to explain the relationship between self-stigma and mental health help-seeking intent.

Literature Review

Mental Health Help Seeking

Mental health help-seeking is a coping behavior that involves seeking support, care, or service to reduce psychological distress and improve overall well-being (Sanghvi & Mehrotra, 2022; Xu et al., 2018). It helps alleviate the detrimental effects of experiencing mental health problems (Topkaya, 2015) such as problematic interpersonal and family functioning, lower life expectancies, and suicide risk (Schnyder et al., 2017; Wang et al., 2023). In more severe cases of mental health conditions, individuals become more susceptible to substance use, poverty, homelessness, unemployment, and hospitalization (Naslund et al., 2016).

However, there are still limited studies available on mental health help-seeking among middle-aged and older adults (Kessler et al.,

2014; Murayama et al., 2022; Wang et al., 2023) even though help-seeking has been found to decrease with age (Berard et al., 2020; Gonçalves et al., 2014). Thus, it is important to also explore stigma in mental health research, especially its role in influencing the help-seeking intent of individuals among different populations.

Self-Stigma on Mental Health Help Seeking

Self-stigma has been found to be associated with help-seeking attitudes where higher levels of self-stigma elicit more negative attitudes toward seeking psychological help (Lannin et al., 2015; Reynders et al., 2014; Tucker et al., 2013; Vally et al., 2018; Wallin et al., 2018). Studies then suggest that individuals with internalized stigma avoid seeking psychological help to protect their self-esteem and sense of self-regard due to the belief that utilizing mental health services is socially unacceptable (Johnson, 2020; Tucker et al., 2013; Vogel et al., 2006).

Collectivist culture has been identified to be a contributing factor to this relationship as negative perceptions toward mental health are more endorsed in such cultures (Cheng et al., 2018; Endriulaitienė et al., 2019; Natalia & Fridari, 2022; Vally et al., 2018). Evidence shows that among Arabic and Turkish university students, collectivist culture has been associated with increased stigma toward mental health and treatment (Aldalaykeh et al., 2019; Seyfi et al., 2013) while adherence to Asian cultural values among Chinese, Korean, and Vietnamese immigrants has also been linked to more negative attitudes toward seeking psychological help (Alzoubi, 2022).

In contrast, Western countries with lower levels of mental health stigma report higher rates of help-seeking and lesser internalized stigma (Evans-Lacko et al., 2012; Wang, 2018). Cavanagh et al. (2021) suggest that the disparity between Western and Non-Western help-seeking behaviors can be explained by levels of trust as it has been found among young Australians that high levels of trust exhibit high professional help-seeking intent compared to Russians with low levels of trust. This can also explain the lower rates of help-seeking among Asian populations due to their preference to not disclose their emotional state to therapists (Wang, 2018). With these findings, it is important to study self-stigma in seeking mental health care, especially among non-Western populations.

Mental Health Literacy

Mental health literacy encompasses the knowledge and attitudes about mental health, involving recognition, prevention, and treatment of mental disorders (Satparam, 2023). This is found to be associated with help-seeking behaviors where higher levels of mental health literacy result in a higher likelihood of seeking psychological help (Cheng et al., 2018). Studies suggest that improving mental health knowledge can promote seeking psychological help as prior knowledge and experience with mental health services may elicit positive attitudes toward seeking help (Chandrasekara, 2016; Lally et al., 2012; Zorilla et al., 2019).

Kutcher et al. (2016) have suggested that mental health literacy encompasses alleviating stigma on mental health. Previous studies support this finding, suggesting that improving health literacy reduces the mental health stigma (Piper et al., 2018; Wei et al., 2015) as higher mental health literacy allows a better understanding of mental illnesses and thus, reduces stigma and prejudice associated with it (Phoa et al., 2022). Therefore, in line with the findings from the previous studies, it is important to understand how mental health literacy influences the relationship between self-stigma and intent to seek mental health help.

Conceptual Framework

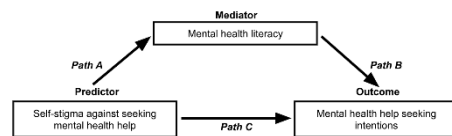


Figure 1. Mediation of Mental Health Literacy on the Relationship between Self-Stigma and Intent to Seek Mental Health Help of Middle-Aged Filipino Adults

The framework outlined the application of mediation in explaining the relationship between the predictor and outcome variables. The mediator for this study was mental health literacy, the predictor was self-stigma against seeking mental health help, and the outcome was mental health help-seeking intentions. The three paths denoted the expected relationship between the three variables: Path A signifies the relationship between self-stigma of seeking mental health help and mental health literacy, path B for the relationship between mental health literacy and mental health help-seeking intentions, and Path C for the relationship between self-stigma of seeking mental health help and mental health help-seeking intentions.

METHODOLOGY

Research Design

The researcher utilized a quantitative approach where numerical data were collected through survey questionnaires to statistically test the significance of the assumptions in this study. The study design was correlational where mediation analysis was used in analyzing the relationship between the predictor and the outcome variables. In this study, the researcher explored the mediating effect of mental health literacy on the relationship between self-stigma and the intent to seek mental health help of middle-aged Filipino adults.

Participants and Study Site

Purposive sampling was utilized where inclusion criteria were set to determine the eligibility of the participants in the study. The demographic data of the participants revealed that among 219 middle-aged Filipino adults, 68.9% belong to the 35 to 44 years old age bracket ($n = 151$) and 55.3% were residents in Region IV-A ($n = 121$). Additionally, a large fraction of participants also reported themselves to be residing in the National Capital Region (33.8%).

Table 1. Demographic Characteristics of the Middle-aged Filipino Adults (N = 219)

	<i>n</i>	%
Nationality		
Filipino	219	100%
Age		
35 to 44 years old	151	68.9%
45 to 54 years old	43	19.6%
55 to 64 years old	25	11.4%
Area of Residence		
National Capital Region (NCR)	74	33.8%
Region IV-A (Calabarzon)	121	55.3%
Region III (Central Luzon)	24	11%

Instruments

Demographic Profile

Demographic information such as nationality, age, and area of residency was collected as a screening tool for the eligibility of the participants in the current study. The instrument for the collection of demographic data was only made by the researcher.

Mental Health Literacy Scale-Filipino (MHLS-F)

Mental Health Literacy Scale-Filipino (MHLS-F; Biscocho & Medina, 2022) is a 26-item instrument, containing three subscales (i.e., Ability to recognize disorders, knowledge where to seek information, and attitudes that promote recognition or appropriate health-seeking behavior) that has been cross-culturally adapted from the 35-item Mental Health Literacy Scale (MHLS; O'Connor & Cassey, 2015) to particularly measure the mental health literacy of Filipinos. The statements such as “*Sa iyong palagay, kung nakararanas ng pakiramdam na sobrang sigla o sobrang lungkot ay malaki bang posibilidad na siya ay mayroong Bipolar Disorder?*” and “*Sa tingin mo, kung nakararanas ng Personality Disorders ay malaki ba ang posibilidad na sila ay mayroon sakit sa kaisipan?*” are rated using a 4-point Likert type scale (1 = *Siguradong Wala*, 4 = *Siguradong Mayroon*) while statements such as “*Papayag ka bang bigyan ng trabaho ang taong may sakit sa kaisipan?*” and “*Naniniwala ako na hindi epektibo ang pangagamot sa sakit sa kaisipan ng mga propesyonal sa Kalusugan sa Pag-iisip*” are rated using a 5-point Likert type scale (1 = *Tiyak na hindi sumasangayon/Hindi*, 5 = *Tiyak na sumasangayon/Oo*). The scale is computed by summing the scores across all the items after reversing the scoring of necessary items (i.e., items 11-26), with higher total scores indicating greater mental health literacy. Satisfactory internal consistency ($\alpha = .73$) and evidence for content validity has been then reported for the MHLS-F (Biscocho & Medina, 2022).

Self-Stigma of Seeking Help (SSOSH) Scale

Self-Stigma of Seeking Help (SSOSH; Vogel et al., 2006) scale is a unidimensional 10-item measure of self-stigma in seeking psychological help. The statements such as “*I would feel inadequate if I went to a therapist for psychological help*” and “*My self-confidence would NOT be threatened if I sought professional help*” are rated using a 5-point Likert type scale (1 = Strongly Disagree, 5 = Strongly Agree). The scores are then summed up after reversing the scoring of necessary items (i.e., items 2, 4, 5, 7, and 9), with higher total scores indicating higher levels of help-seeking self-stigma. SSOSH scale has been reported to have good test-retest reliability ($\alpha = .72$), strong internal consistency reliability ($\alpha = .91$), and good overall reliability ($\alpha = .89$) with evidence for construct and criterion validity (Vogel et al., 2006). Studies have also shown the applicability of SSOSH across different populations such as South Korean students ($\alpha = .84$; Kim & Yon, 2019), Chinese immigrants ($\alpha = .81$; Yee et al., 2020), and Polynesian Americans ($\alpha = .82$; Allen et al., 2016). Similarly, local studies have utilized the SSOSH scale among samples of Filipino high school students ($\alpha = .87$; Liguin & Cuartero, 2022), college students ($\alpha = .89$; Lasquites et al., 2024), rural area residents ($\alpha = .67$; Aruta et al., 2021), and Filipino Americans ($\alpha = .81$; De Luna & Kawabata, 2020).

Mental Help Seeking Intention Scale (MHSIS)

The Mental Help Seeking Intention Scale (MHSIS; Hammer & Spiker, 2018) is a 3-item instrument that has been developed based on the Theory of Planned Behavior (Ajzen, 2006) to measure an individual's intention to seek help from a mental health professional. Statements such as “*If I had a mental health concern, I would intend to seek help from a mental health professional*” are rated using a 7-point Likert type scale (1 = Extremely unlikely, 7 = Extremely likely). The scale is interpreted by getting the average of the scores where higher mean scores indicate greater intent to seek mental health help. Conversely, Hammer and Spiker (2018) have found that MHSIS has the strongest predictive validity of mental health help-seeking intentions as compared to the commonly used help-seeking instruments (i.e., General Help Seeking Questionnaire and Intentions to Seek Counseling Inventory). MHSIS has also been found to elicit

similar results to the Intentions to Seek Counseling Inventory when administered (Boomgarden, 2021).

Good reliability ($\alpha = .94$) and evidence for internal structure and convergent validity have been reported for MHSIS (Hammer & Spiker, 2018; Shabrina et al., 2022). MHSIS has also been utilized across different populations such as Malaysian undergraduates ($\alpha = .90$; Zaidi & Roseliza-Murni, 2023), African Americans ($\alpha = .95$; Wilson, 2022), Assam adults ($\alpha = .91$; Ngatey et al., 2023), and U.S. veterans ($\alpha = .97$; Hines, 2023) and demonstrated high reliability across all studies. Local studies have also utilized MHSIS across different samples in the Philippines such as Filipino agnostics and atheists (Dumaop et al., 2023), counselors ($\alpha = .93$; Aruta et al., 2023), senior high school students (Agbay, 2022), adults ($\alpha = .94$; Lingbaon, 2018), and emerging adults (Bugtong-Diez, 2020).

Data Gathering Process

Data was gathered electronically via online platforms using Google Forms. A hyperlink was disseminated through social media platforms (i.e., Facebook, Instagram, Twitter) along with publication materials containing the inclusion criteria for the study and a quick-response (QR) code directed to the Google Forms. The first section of the survey included an informed consent form highlighting the details and ethical considerations of the study. Participants' eligibility was screened through the demographic section where participants who do not meet the criteria for the study will not be redirected to the survey questionnaires. Eligible participants proceeded to the section of the survey questionnaires: Mental Health Literacy Scale-Filipino (MHLS-F), Self-Stigma of Seeking Help (SSOSH) Scale, and Mental Help Seeking Intention Scale (MHSIS). Data was collected in Google Sheets and analyzed using a statistical analysis tool.

Ethical Consideration

The study was followed the ethical research guidelines of the American Psychological Association (2017) to ensure the welfare and safety of the participants. Informed consent was provided to brief the participants about the details of the study and terms of participation. Efforts were made to minimize any forms of harm, distress, or discomfort, and participants were given the right to withdraw from the study without penalty. Participants who proceeded with the study were debriefed after completing the survey and were presented with a list of mental health organizations for support, if necessary. In addition, data were kept confidential and anonymous, and any identifying information about the participants was coded into aliases (i.e., P1, P2, P3). All data were stored in password-protected devices, with access restricted to the researcher only. Two-factor authentication (2FA) was activated for added security. Lastly, the researcher ensured that the data would be used for this study only and would be deleted after the study's completion.

Data Analysis

This study utilized mediation analysis in investigating the mediation effect of mental health literacy (M) on the relationship between self-stigma (X) and the intention to seek mental health help (Y). The data collected was run on a statistical analysis tool (i.e., SPSS), utilizing both simple linear regression and multiple linear regression. Simple linear regression was first used to determine the total effect between X and Y and the direct effect of X on M. Multiple linear regression was then used to determine the direct effect of X and M on Y. As the bootstrapping method has been suggested to produce more accurate and reliable results in measuring mediation effects (Levy et al., 2011; Özdil & Kutlu, 2019), this study utilized percentile bootstrapped mediation analysis to test the statistical significance of the indirect effect of mental health literacy on the relationship between help-

seeking self-stigma and the intention to seek mental health help.

RESULTS

Normality assumptions were measured to test for the normality of the distribution as part of the preliminary screening of data. Skewness and kurtosis analysis reveal that the observed values for mental health literacy ($\alpha 3 = -0.17$, $K = -0.09$), self-stigma on seeking help ($\alpha 3 = 0.02$, $K = -0.42$), and mental health help-seeking intentions ($\alpha 3 = -1.67$, $K = 3.42$) fall within the acceptable range of normality (Bryne, 2010; Hair et al., 2010), suggesting that data of the variables in the study are normally distributed. Additionally, 15 outliers were identified from the boxplots of mental health literacy and mental health help-seeking intentions. However, the outliers were retained in the dataset, as the data analysis method (i.e., percentile bootstrapping) for this study does not require assumptions regarding data distribution (Carpenter & Bithell, 2000; Henderson, 2005; Hesterberg et al., 2003).

Descriptive statistics were performed on the key variables. Results reveal that the participants have moderate scores ranging from 58 to 114 on the Mental Health Literacy Scale, with a mean score that falls slightly above the midpoint of the total score limit within the scale ($M = 88.96$, $SD = 11.23$). These findings indicate that the middle-aged Filipino adults in the study exhibit sufficient understanding of various concepts related to mental health, although there are still areas in which their knowledge may be limited. On the Self-Stigma of Seeking Help Scale, the participants demonstrated relatively low scores ranging from 10 to 36 ($M = 20.08$, $SD = 6.01$), implying minimal levels of self-stigma in seeking help. Lastly, the mean scores on the Mental Help Seeking Intention Scale were notably the highest among the three measures ($M = 6.21$, $SD = 1.05$), signifying that it is highly likely for middle-aged Filipinos to seek mental health help.

Table 2. Regression Analysis for the Relationship Between Self-Stigma Against Seeking Mental Health Help and Mental Health Help Seeking Intention of Middle-Aged Filipino Adults

	<i>B</i>	95% CI	<i>SE</i>	β	<i>R</i>	<i>R</i> ²
Constant	6.62*	[5.24, 7.99]	0.7			
Self-Stigma Against Seeking Mental Health Help	-0.06*	[-0.08, -.04]	0.01	-0.34		
					.39	.15*

Note. CI = Confidence interval. *p-value < .05

Table 2 shows the predictive relationship between self-stigma against seeking help and help-seeking intentions of middle-aged Filipino adults. Results highlighted an inverse relationship between self-stigma against seeking help and mental health help-seeking intentions ($\beta = -0.06$, $p < .05$), suggesting that the increased likelihood of seeking mental health help ($M = 6.21$, $SD = 1.05$) resulted from the minimal levels of help-seeking self-stigma ($M = 20.08$, $SD = 6.01$) among the participants. This provides evidence for the first hypothesis of the study proposing that self-stigma against seeking help is a significant predictor of mental health help-seeking intentions of middle-aged Filipino adults.

Table 2. Mediation Analysis for the Mediation of Mental Health Literacy on the Relationship Between Self-Stigma Against Seeking Mental Health Help and Mental Health Help Seeking Intention of Middle-Aged Filipino Adults

	<i>B</i>	95% CI	<i>SE</i>	β	<i>R</i>	<i>R</i> ²
Constant	6.62*	[5.24, 7.99]	0.7			
Mental Health Literacy	0.01	[-0.004, 0.02]	0.01	0.1		
					.39	.15*

Note. CI = Confidence interval. *p-value < .05

Table 3 illustrates the mediation results on the role of mental health literacy in the relationship between self-stigma against seeking mental health help and mental health help-seeking intentions of middle-aged Filipino adults. Results from the regression analysis revealed that there is no significant relationship between mental health literacy and mental health help-seeking intentions ($\beta = 0.01$, $p = .17$), suggesting that the levels of mental health literacy have no direct effect on the levels of mental health seeking intent among middle-aged Filipino adults.

Similarly, the bootstrap confidence interval for the indirect effect based on 5,000 bootstrap samples was below and above zero [95% $CI = (-0.019, 0.003)$, $SE = .006$], indicating that mental health literacy may not significantly mediate the relationship between self-stigma against seeking mental health help and mental health help-seeking intentions of middle-aged Filipino adults. This finding fails to support the second hypothesis of this study which states that mental health literacy mediates the relationship between self-stigma and mental health help-seeking intentions of middle-aged Filipinos.

DISCUSSION

The study measures the mediating role of mental health literacy on the relationship between self-stigma in seeking mental health help and intent to seek mental health help among middle-aged Filipino adults. The results support the first hypothesis in the study, revealing that self-stigma in seeking mental health help is a significant predictor of psychological help-seeking intentions. The negative relationship between the two variables was particularly highlighted in the findings, indicating that an increase in the levels of self-stigma in seeking mental health help would result in a decrease in the levels of intent to seek mental health help. Meanwhile, the results from the mediation analysis do not support the second hypothesis in the study as the indirect effect of self-stigma in seeking psychological help with the intent to seek mental health help through mental health literacy was found to be nonsignificant. This suggests that mental health literacy may not be a key mediator in the relationship between the self-stigma of seeking help and the help-seeking intent of middle-aged Filipino adults.

Existing literature on the role of self-stigma in seeking psychological help in predicting the intent of individuals to seek mental health care supports the observations among middle-aged adults in the present study (Kim & Lee, 2022; Topkaya, 2014). Self-stigma has been identified to be the primary form of stigma that is a predictor of help-seeking intentions, thereby highlighting its significance in recognizing the prognosis for mental health concerns (Lannin et al., 2015). Moreover, studies have found that higher levels of internalized stigma decrease the likelihood of mental health service utilization due to the development of negative attitudes toward seeking help (Prawira & Sukmaningrum, 2020; Rao & Ah Gang, 2023). These strengthen the theoretical foundation of the Knowledge-Attitude-Practice (KAP) framework within the study, as these provide evidence that attitudes and beliefs (i.e., self-stigma of seeking psychological help) translate to changes in mental health-related behavior (i.e., help-seeking intentions; Azman et al., 2023; Upadhana et al., 2022).

Several researchers explain this finding, suggesting that the negative perception of society toward mental health is linked with the help-seeking intentions of individuals experiencing psychological distress (Prim et al., 2023; Tucker et al., 2013) as they avoid seeking help to

minimize the risk of being perceived negatively by society (Vogel et al., 2006). Brenner et al. (2020) argue that the help-avoidant behavior of individuals with high levels of help-seeking self-stigma is not characterized solely by their refusal to seek psychological help but rather by the avoidance of the distressing thoughts and emotions associated with this process. Existing studies have particularly identified this self-protective measure during middle adulthood, where middle-aged individuals tend to defend themselves against negative self-perceptions (Brahme, 2024; Giacomini & Jordan, 2020). In this context, as self-actualization emerges during middle adulthood (Brahme, 2024), seeking psychological help may become perceived as a threat to an individual's self-concept as the experience evokes feelings of inferiority (Ioannou, 2022; Lasquites et al., 2024; Linguid & Cuartero, 2022; Xing, 2020).

Despite this, studies found that once an individual experiences extreme levels of psychological distress, seeking mental health help becomes perceived as beneficial in efforts to alleviate the distress being experienced (Demian & Anderson, 2012; Surapaneni et al., 2018). For instance, Nagai (2015) has found that the prolonged experience of severe depressive symptoms may serve as a motivating factor for an individual to seek help. This may be explained by the idea that individuals become more aware of their psychological distress once it has reached a significant level, which subsequently drives their intentions to seek help (Portt, 2020). As middle-aged individuals perceive their lives as stressful (Scott et al., 2013), experiencing psychological distress may contribute to this strain, thereby increasing their willingness to seek mental health help. This finding is further corroborated by studies showing that middle-aged individuals are more likely to seek mental health help compared to younger and older adults (Apolinário-Hagen et al., 2016; Hubbard, 2009; Jacobsson et al., 2013).

Conversely, the current findings on the mediating role of mental health literacy present an alternative perspective to previous studies, which indicates that increased mental health literacy reduces the effect of stigma on seeking mental health help (Kutcher et al., 2016; Piper et al., 2018; Wei et al., 2015). As mental health literacy does not appear to significantly mediate the relationship between self-stigma and help-seeking intent among middle-aged Filipinos, there is a possibility that there are different approaches for developing health-related behaviors, which may not align with the successive process proposed in the KAP theory (Alsahe et al., 2023). According to the traditional framework of the KAP theory, increased knowledge is believed to enhance attitudes and subsequently influence behavior (Samaksha et al., 2022; Zahid Iqbal et al., 2020). However, Valente et al. (2006) propose reexamining this model, suggesting that there may be alternative patterns of interaction between knowledge, attitudes, and practices. This aligns with findings from previous studies indicating that while higher levels of mental health literacy (i.e., knowledge) are associated with a higher likelihood of seeking psychological help (i.e., practice; Cheng et al., 2018), reducing internalized stigma (i.e., attitude) that contributes to help-seeking behavior requires factors that extend beyond the improvement of an individual's knowledge (Papish et al., 2013; Rosin et al., 2020; Semrau et al., 2023).

Consistent with this, research has found that improving knowledge and attitudes toward mental health yields only short-term behavioral outcomes (Waqas et al., 2020), indicating that a different approach should be developed to address the underlying issue of stigma (Carrara et al., 2020). One possible solution for this would be for educational interventions to highlight the biological perspective of

mental health disorders rather than exclusively concentrating on dismantling the stigma associated with mental health (Schomerus & Angermeyer, 2008). Aside from this, the three key components of stigma (i.e., cognitive, affective, and behavioral) should also be addressed to achieve the long-term effectiveness of anti-stigma interventions (Mak et al., 2017). These observations highlight the possibility that there may be additional factors related to help-seeking behavior that warrant further investigation to gain a better understanding of this phenomenon.

Culturally relevant barriers may also explain the trends in this study as existing literature suggests an association between culture and reluctance to seek psychological help (Corrigan et al., 2014; Vogel et al., 2011). In the Philippines, cultural values such as *hiya* (shame) and loss of face have been found to significantly influence help-seeking intentions, where the reluctance to seek help arises from the fear of social ostracism and stigmatizing labels (Pinggolio & Mateo, 2018). As a result, individuals tend to resort to managing psychological distress without external help to avoid being associated with negative labels (Arnado & Bayod, 2020; Jennings et al., 2015; Martinez et al., 2020). This tendency to avoid external help is consistent with research on middle-aged adults, which suggests that coping mechanisms during middle adulthood tend to transition from an emotion-focused approach to a more problem-focused approach which results in a reduced likelihood of seeking social support when experiencing psychological distress (Dumitrescu & Saskatchewan, 2023). Studies explain this phenomenon, suggesting that individuals who resort to self-reliance and avoid seeking psychological intervention perceive their mental health concerns as lacking severity to warrant professional treatment (Hanash, 2014; Segal et al., 2014). This perception may be linked to the belief that the responsibility for resolving personal problems rests solely with the individual experiencing them (Arnado & Bayod, 2020; Volkert et al., 2017).

However, research suggests that it is also possible that individuals may remain unaffected by stigma if resilience serves as their primary coping mechanism (Ching et al., 2024). Among Filipinos, self-reliant behavior has been observed to be rooted in the belief that high degrees of mental fortitude allow individuals to overcome various challenges (Cordero, 2020; Villamor & Dy, 2022). This evidence aligns with the observations of Puentespina et al. (2023) which reveal resiliency as a mitigating factor of self-stigma wherein higher levels of resiliency result in lower levels of self-stigma. Supporting this, Naseem and Munaf (2019) have observed that as individuals transition into middle adulthood, the propensity to respond aggressively in stressful situations diminishes, giving way to an increased capacity for resilience. This adaptive coping mechanism has been found to enable middle-aged individuals to transition more effectively into middle adulthood, contributing to improved mental health and overall quality of life (Aspa et al., 2023; Carandang et al., 2020; Palmes et al., 2021). Thus, linking this empirical evidence with the results from this study points to the conclusion that culture may also have a significant role in shaping help-seeking behaviors among middle-aged Filipinos. In light of this, this study proposes an alternative perspective on the framework of the KAP theory, suggesting that health-related behaviors, in addition to being influenced by knowledge and attitudes, may also be shaped by socio-cultural factors such as values.

CONCLUSION

The study provides evidence that the self-stigma associated with seeking psychological help of middle-aged Filipino adults is a

predictor of their intentions to seek mental health care, while mental health literacy appears to have no significant influence on this relationship. The findings align with existing research that identifies self-stigma as a key predictor of help-avoidant behavior, suggesting that individuals with high internalized stigma may avoid seeking psychological help to protect their self-concept. This finding also highlights the importance of addressing this problem in the Philippines to eliminate barriers limiting mental health service utilization, underscoring the specific areas that programs and policies for mental health could address to improve the state of mental health care in the Philippines. Additionally, the emerging trends in the study on the role of mental health literacy offer new insights into the factors influencing the reluctance to seek psychological help among Filipinos. This calls for the development of contemporary approaches in promoting mental health help-seeking behavior, as the existing interventions being practiced may not sufficiently address the key barriers present within the Filipino population.

As such, culturally tailored frameworks for psychological interventions may be a more suitable approach for long-term effectiveness in reducing barriers to help-seeking. The identification of the cultural values that contribute to these barriers also provides a clearer understanding of the factors that need to be addressed to promote more effective help-seeking behaviors among Filipinos. This includes transforming maladaptive coping mechanisms within the Filipino population into healthier and more constructive ones. Thus, by expanding the existing knowledge on the process of the KAP framework, this research contributes to a deeper understanding of help-seeking behavior among middle-aged Filipinos and emphasizes the importance of developing alternative interventions to enhance mental health outcomes.

However, although this study provides significant insights into mental health literacy, self-stigma of seeking help, and mental health help-seeking intentions of middle-aged Filipino adults, the limitations of the study must be considered when interpreting the results. First, the result of this study is limited to middle-aged Filipinos residing in the National Capital Region, Calabarzon, and Central Luzon. Future studies should consider recruiting representations from all regions in the Philippines to gain a better understanding of mental health literacy, help-seeking self-stigma, and help-seeking behavior among the middle-aged Filipino population. Second, the study primarily focused on generating a general interpretation of the results and excluded conducting comparisons across the sample's socio-demographic characteristics. Further studies should consider performing comparative analyses across the sample's age, gender, area of residence, educational attainment, and household income to gain better insights into how the relationship between the key variables (i.e., mental health literacy, self-stigma of seeking help, and mental health help-seeking intentions) vary across different groups.

Moreover, the use of self-report measures and the sequence of the instruments within the survey may have also introduced response bias, which could have influenced the findings of the study. Future studies should explore different data-gathering approaches to increase the reliability of the results. In addition, the arrangement of the survey instruments should be carefully considered to minimize order effects on the responses of the participants. Finally, the nonsignificant results in the mediating role of mental health literacy indicate that other factors could influence the relationship between help-seeking self-stigma and mental help-seeking intentions of middle-aged Filipino adults. In that sense, further research should explore a different variable to better understand the influence of help-seeking self-stigma on help-seeking intentions among the middle-aged Filipino

population. The KAP framework could also be reconsidered in future studies by exploring alternative sequencing of its components when analyzing variables that influence health-related behaviors.

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TO YOUR SURPRISE

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ABSTRACT

To Your Surprise is a 2D animated short film that follows Raver and Aira through an emotional journey of resilience, and explores the depths of human connection through a poignant narrative, crafted to reveal the beauty of friendship and life's spontaneous moments. The project delves into the transformative power of storytelling, using nuanced animation to foster empathy and illuminate the profound emotional landscapes of its characters, ultimately challenging viewers to appreciate the unexpected joys that emerge from human relationships. The primary objective of this project is to create a 2D animated short film entitled "To Your Surprise" that commemorates the undying magic of friendship, and the beauty found in life's spontaneous moments while striking a mix of balance between technical proficiency and narrative depth. The film's profound impact resonates deeply, validating its ability to inspire meaningful dialogue and personal reflection. By sparking audience engagement and emotional connection, the project demonstrates the transformative power of storytelling, leaving a lasting impression that encourages viewers to embrace empathy, optimism, and the potential for positive change in their own lives. Audience feedback illuminated key areas for potential refinement, including the need for more nuanced dialogue, smoother scene transitions, improved audio-visual synchronization, and more consistent character design and movement to enhance the overall narrative and visual storytelling experience. Crafting a short animated narrative like "To Your Surprise" that explores deep human connections and spontaneous moments of joy, this project offers a powerful medium for fostering empathy, understanding, and emotional resonance across diverse audience segments.

Keywords: Emotional connection, technical proficiency, narrative depth

INTRODUCTION

For decades, animation has served as a captivating medium for storytelling, evolving from hand-drawn cell animations to advanced computer-generated imagery (CGI). However, as noted by critics and scholars, the contemporary animation landscape increasingly struggles to maintain the emotional depth that once defined this art form. Critics like Dragon S. (2023) have highlighted this trend, describing recent productions such as Disney's 'Wish' as 'woeful' and 'forgettable', indicating a growing disconnection between visual spectacle and meaningful narrative.

The modern animation industry appears to prioritize commercial appeal over substantive storytelling, often relying on formulaic plots and one-dimensional characters that fail to capture the complexity of human experience. As exemplified by the pacing issues in The Promised Neverland Season 2, where key narrative elements were reduced to 'meaningless information sheets' (Taylor J., 2021), the industry risks losing its capacity to truly engage and move audiences.

This project aims to address this critical gap by creating an animated narrative that prioritizes emotional resonance, character development, and universal themes. By carefully balancing technical excellence with profound storytelling, the work seeks to demonstrate animation's potential as a powerful medium for exploring complex human experiences, fostering empathy, and leaving a lasting impact on viewers of all ages.

Project Objectives

The primary objective of this project is to create a 2D animated short film entitled "To Your Surprise" that commemorates the undying magic of friendship, and the beauty found in life's spontaneous moments while striking a mix of balance between technical proficiency and narrative depth. Specifically, creating complex, relatable characters that undergo significant development and foster

audience empathy. By utilizing advanced animation techniques that enhance and complement the narrative, rather than overshadowing it, the project seeks to deliver an engaging viewing experience that deeply connects with audiences. The goal is to produce a short animated film that leaves a lasting emotional impact, illuminating the beauty of human relationships and reminding viewers of the transformative power of spontaneity and connection.

Significance of the Project

To Your Surprise holds significant value for multiple groups. For audiences of all ages, it explores themes of friendship, connection, and the joy in life's simple moments, fostering emotional engagement and reflection on everyday experiences. For schools and future researchers, the 2D animation will contribute to the academic discussion on animation as a powerful medium for storytelling, emphasizing character development and emotional depth. It can also serve as an educational tool for aspiring animators and students. On a societal level, the project reminds viewers of the enduring importance of human connection and the beauty of life's small moments, promoting empathy and appreciation in today's fast-paced world.

Review Of Related Works and Literature

Lack of Originality and Creativity

The film industry is increasingly reliant on adapting or remaking existing stories, often at the expense of creating fresh, original narratives. While remakes like *Mulan*, *Cruella*, and the upcoming *Clifford the Big Red Dog* are visually striking, they frequently fail to capture the spirit of the originals or offer new, compelling stories. This trend highlights a lack of innovation and a diminished focus on crafting engaging, unique plots that truly resonate with audiences (Clara, 2021).

Narratives and Storytelling

As technology and narrative techniques continue to evolve, it is important to analyze how animators adapt to these changes in the industry. Storytelling remains a vital element in animated films, which continue to captivate audiences despite the shifting landscape (Mario, 2023). The integration of visual arts with storytelling marked a turning point, starting with illustrations and evolving into animated sequences that fused technical skill with narrative depth (Aminian P., 2024).

Animation, using visuals, sound, and carefully designed characters, creates an immersive experience that not only tells a story but evokes deep emotional responses through techniques like lighting, music, and facial expressions (Hound Studio, n.d.). This demonstrates that animation is not just about the story, but about crafting an atmosphere that connects with viewers on an emotional level.

Emotions

Emotion in Animated Films delves into the portrayal of emotions, especially in computer animation, highlighting how these films impact viewers' mental health (Connor, 2019). Studio Ghibli films, for instance, demonstrate how to embrace life's simplicity and uncover the magic in everyday moments, blending immersive realism with elements of romanticism and fantasy to deeply connect with audiences (Banavalkar, 2020). Despite criticisms of recent animated films for lacking originality, animation continues to excel in combining technical expertise with emotive storytelling. Through the integration of visuals, sound, character design, and narrative depth, animated films create immersive experiences that forge strong emotional bonds, underscoring the importance of emotionally rich, nuanced storytelling as the industry progresses.

Paperman

Paperman is an animated short film set in mid-century New York City, following the story of a lonely young man whose life changes after a chance encounter with a beautiful woman on his daily commute (Rappler, 2014). When he believes she is lost to him forever, he spots her again in a high-rise building and attempts to get her attention using only a stack of papers and his determination. His persistence leads to an unexpected and heartwarming conclusion (IMDb, n.d.). To Your Surprise, like Paperman, draws inspiration from Disney's acclaimed style, capturing the beauty of life's spontaneous moments. Both films skillfully blend traditional animation with modern technology, creating visually striking narratives. They also excel in conveying deep emotions with minimal dialogue, relying on expressive visuals and captivating storytelling. The protagonists in To Your Surprise share similar traits with those in Paperman, emphasizing the power of persistence and connection.

Proof of Us

Proof of Us is an original short animation created to inspire exam candidates in Japan (IMDb, n.d.). The story follows three friends navigating school, studies, and relationships. Takuya Amano, about to transfer to Hokkaido after middle school, is supported by his childhood friend, Haruka Kishi, and their close friend, Tsubasa Miyake, as they prepare for their futures (Morrissy, 2022). Similarly, To Your Surprise shares themes of childhood friendship, with Aira inspiring Raver to always look on the bright side of life. Both animations highlight the power of friendship and the inspirational journeys of the characters, motivating viewers through their emotional connections and personal growth.

Weathering with You

One of Makoto Shinkai's remarkable films, Weathering with You (2019), is a Japanese animated romantic fantasy that he both wrote and directed (IMDb, 2019). The story follows Hodaka, a runaway high school student, and Hina, a Tokyo native with the ability to control the weather (Manaloto, 2019). Although Weathering with You

belongs to the romantic fantasy genre and To Your Surprise falls under a different style, both films share a key similarity. The female protagonists, Hina and Aira, are energetic and optimistic, inspiring the male protagonists, Hodaka and Raver, to embrace a brighter outlook on life. This parallel in their character dynamics highlights the inspiring power of positivity and emotional growth.

Elemental

Pixar's 2023 film Elemental is the studio's first full-fledged love story, following Ember, a fiery and hardworking young woman with a short temper that prevents her from joining her father Bernie's business (Oquiza, 2023). Her father's business, built through perseverance in a city that marginalizes their kind, faces closure until Ember meets Wade Ripple, a water element health inspector. Together, they must save the business while discovering whether the city's mantra that "elements don't mix" is true (Butcher, 2023). Despite the differences between Elemental and To Your Surprise, such as Elemental being a 3D romantic comedy and To Your Surprise a 2D short film, character design has some similarities. Like Ember, Aira's burning passion for life reflects Ember's fiery nature. Meanwhile, Wade's calm blue tone, which needs a spark to come alive, mirrors Raver's dull state before meeting Aira, especially during the rain, symbolizing his emotional dullness before their connection. Both films explore the transformative power of relationships and passion.

Josee, the Tiger and the Fish

Josee, the Tiger and the Fish (2020) is a Japanese animated romantic comedy-drama film based on Seiko Tanabe's short story of the same name (Tanabe, 2021). The film tells the story of an unexpected pair: Josee, a talented artist and disabled woman struggling to find meaning in life, and Tsuneo Suzukawa, a passionate scuba diver. Their connection is forged through their shared love of the sea, and as they face various challenges, they begin to help each other discover new paths in life (Sanchez, 2021). The film delicately explores themes of love and pursuing one's dreams, making it particularly appealing to teenagers rather than younger children (Australian Council on Children and the Media, n.d.).

Much like Tsuneo and Kumiko's relationship, Raver initially finds Aira irritating due to her clumsiness and constant smile. He is particularly frustrated when she splashes water at him. However, as in Josee, the Tiger and the Fish, their dynamic evolves from tension to affection. Aira's positive attitude gradually changes Raver's outlook, ultimately bringing a smile to his face. Both films highlight important life lessons, such as the value of following your dreams and always finding the bright side of life.

Trese: The Filipino Animated Series

Trese (2021) is a Filipino-American adult animated streaming series based on the Filipino comic book series of the same name by Budjette Tan and Kajo Baldissimo. This groundbreaking series brought Filipino mythology and urban fantasy to a global audience through Netflix, featuring Alexandra Trese, a detective who deals with supernatural crimes in a modern Manila where mythical creatures of Philippine folklore live in hiding amongst humans (Santos, 2021). The series employed a distinctive visual style that combined traditional 2D animation with modern digital techniques, creating a dark, atmospheric representation of Manila that served both the narrative and cultural authenticity.

While "To Your Surprise" differs significantly in tone and content from Trese, both works demonstrate the growing importance of cultural context in animation. Trese's success highlighted how local

stories can achieve global appeal when presented with technical excellence and emotional authenticity. Similarly, "To Your Surprise" draws from Filipino sensibilities regarding interpersonal connections and finding joy in everyday moments, even during literal and metaphorical rainstorms—a particularly resonant theme in a country frequently affected by typhoons. As noted by Dizon (2022) in her analysis of emerging Filipino animation, "Contemporary Filipino animators are increasingly finding ways to incorporate cultural identity into universal storytelling frameworks, creating works that speak to both local audiences and the broader global community." The technical approach in Trese, particularly its thoughtful use of lighting and color psychology to convey emotional states, provided valuable reference points for "To Your Surprise" in depicting Raver's transition from emotional isolation to connection.

The Impact of Environmental Elements in Animated Storytelling

A peer-reviewed study by Rodriguez and Thompson (2023) published in the Journal of Visual Communication examined how environmental elements in animation—particularly weather phenomena—function as narrative devices and emotional signifiers. Their quantitative analysis of 50 animated films found that rain scenes served as transitional devices in 78% of cases, often marking character transformation or emotional revelation. The researchers noted: "Weather elements transcend their physical representations to become psychological metaphors, with rain specifically correlating to moments of clarity, purification, or emotional release in 84% of the analyzed scenes" (Rodriguez & Thompson, 2023).

This research provides theoretical grounding for "To Your Surprise," which deliberately uses rain as both setting and metaphor. The study's findings that "unexpected weather creates narrative opportunities for character development through forced proximity or shared experience" (p. 146) directly applies to the chance encounter between Raver and Aira. Furthermore, the research identified that animation offers unique advantages in depicting weather's emotional impact through stylization and exaggeration that live-action cannot achieve without appearing melodramatic. The technical analysis of color palettes during weather transitions in successful animated films from the study informed "To Your Surprise's" gradual shift from monochromatic blues to vibrant hues as Raver's emotional state transforms through his interaction with Aira.

Conceptual Model

Various hardware devices and software tools are essential throughout the pre-production, production, and post-production stages to ensure the successful completion of a project. By utilizing the input-process-output framework, each phase is approached in a structured and efficient manner, allowing for a seamless flow of tasks and achieving the desired outcomes. This methodology ensures that all steps in the project development process are carefully managed and executed, as demonstrated in Figure 1 below.

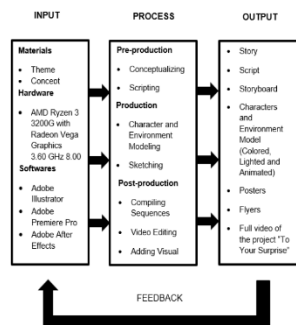


Figure 1. IPO Model

METHODOLOGY

Project Design

The goal is to create a polished 2D animation from scratch, following a structured animation pipeline that encompasses all stages of the project: pre-production, production, and post-production. This workflow is broken down into three key phases—pre-production, production, and post-production—each essential to the development of the animation. Additionally, the workflow includes a Gantt Chart for project management and an assessment process to ensure the project remains on schedule and meets its objectives.

The study begins with the ideation phase, where the initial concept is developed and refined as the project progresses. This phase includes consultations with the thesis adviser and gathering feedback from potential audiences. Following ideation, the project moves into conceptualization, involving note-taking and exploring different perspectives. The next step is scriptwriting, which serves as the first blueprint for the narrative, later translated into visual form. Character design follows, ensuring that the visual representation aligns with the script's descriptions. With character designs finalized, storyboarding takes place, acting as the detailed roadmap for the animation. Finally, the pre-production phase concludes with the creation of animatics—rough animations that combine the storyboard elements and give life to the visuals, ensuring all necessary components are in place before moving forward.

During the production stage, the researcher prioritizes sound design, even though there won't be voice acting, background music and sound effects are very important in leaving an impact together with the animated film. Eventually, the timing of the animatics is organized, and then the format is set up for the animation process. Animation, being the most critical element of the short film, involves making each part of the character's movement as smooth and coordinated as possible. The last part of the production or animation phase is the coloring process, which gives the animation its ambiance and finalization that it longed for.

The final stage is post-production, which mostly focuses on the rendering process and the final output. The rendering process requires making any required edits to the animation, re-watching and re-evaluating the short film which is a very repetitive process, and finalizing the sound design. Once these elements are finalized, the final outputs will be presented to panelists as we defend our project to them and the target audiences will assess it and give it a compulsive review to mark the completion of the project.

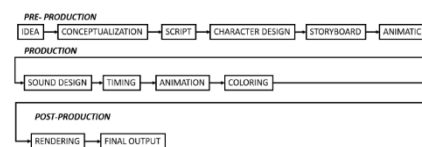


Figure 2. 3D Animation Pipeline

Animation Pipeline and Integration of Elements

The animation pipeline illustrated in Figure 2 represents the structured workflow adapted for our 2D animated short film "To Your Surprise." This systematic approach ensures cohesive integration of all creative elements throughout the production process. Character designs directly inform animation style—Raver's initially constrained movements gradually mirror Aira's fluid expressions as their connection develops. Color timing reinforces this evolution, transitioning from muted, rain-saturated environments to

vibrant hues as Aira's influence grows. Sound design provides emotional scaffolding, with ambient rain establishing the initial melancholy before introducing uplifting musical motifs that synchronize with visual transitions. This coordinated approach to production elements creates a unified storytelling experience where visual and audio components work in harmony to convey the narrative's emotional journey.

Technical Limitations

Several technical constraints influenced production decisions during the creation of this animated short. In terms of hardware and software, limited computing power affected rendering times, particularly for complex rain effects and lighting transitions, and while Adobe Animate provided excellent character animation tools, it required additional compositing for atmospheric elements. Furthermore, resource limitations and timeline restrictions necessitated the strategic simplification of background animation to meet deadlines. Without access to professional recording facilities, sound engineering also required extensive post-processing to achieve the desired quality. Ensuring color consistency across viewing platforms posed another challenge, especially for the subtle transitions marking Raver's emotional evolution, which required the development of a versatile color palette. Ultimately, these limitations informed certain stylistic choices, such as minimalist backgrounds and an emphasis on character silhouettes during emotional transitions, which enhanced the film's visual identity.

Project Components

The character sketches for this animated short represent a critical visual exploration of the protagonists' inner worlds, translating abstract emotional landscapes into tangible graphic representations. Through meticulous line work and deliberate design choices, these preliminary drawings capture the nuanced personalities of Aira and Raver while revealing their contrasting life journeys. Raver's design embodies his history of isolation and introspection—subtle shadow work across his features suggests years of solitary contemplation, while his muted color palette reflects a life largely lived in emotional monotony after childhood disappointments diminished his capacity for joy. In striking contrast, Aira's character design radiates with dynamic energy through flowing lines and vibrant color accents, visually representing her lifelong philosophy that unexpected beauty exists in every moment, developed through her upbringing in a close-knit artistic community that celebrated spontaneity. The intersection of these opposing visual languages—particularly in scenes where Aira's characteristic warm color spectrum begins to influence Raver's cool-toned environment—serves as a fundamental pre-production communication tool that visually forecasts their transformative relationship. Beyond their artistic merit, these sketches function as strategic visual narratives, offering potential audiences an initial glimpse into how Aira's inherent vibrancy will gradually illuminate Raver's shadowed existence, effectively bridging the gap between conceptual design and the emotional journey viewers will experience throughout the film.



Figure 3. Raver Character Sheet

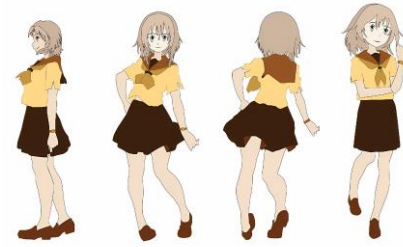


Figure 4. Aira Character Sheet



Figure 5. Poster



Figure 5. Handbill

Project Structure

The project structure represents a comprehensive journey of artistic and technical exploration in creating an emotionally resonant animated short. Beginning with an intensive pre-production phase, the initial sketching process in Adobe Illustrator blended artistic inspiration with original creative concepts, utilizing real-life photography as reference material to ground the animation's visual authenticity and emotional depth. This meticulous design approach ensured that every visual element would support the narrative's intricate emotional landscape.

Scene illustration emerged as the most time-intensive component, demanding approximately two months to meticulously craft over 30 unique scenes. Each frame required intricate attention to background composition, character positioning, color theory, texturing, and lighting, transforming technical processes into a cohesive artistic expression. The careful consideration of visual elements became fundamental in translating the story's abstract emotional moments into tangible graphic representations.

The animation process in Adobe After Effects represented the project's most technically challenging phase, characterized by complex layer management, precise keyframing, and sophisticated character movement techniques. Exported characters from Adobe Illustrator were carefully reassembled and animated to ensure fluid, natural motion that would effectively convey the narrative's emotional

nuances. Each scene demanded extensive manipulation to achieve seamless character interactions and maintain visual continuity.

The final compilation in Adobe Premiere Pro became the critical stage of unifying the entire project. Here, animated sequences were meticulously arranged to maintain narrative flow, with careful attention to timing, transitions, sound effects, and background music. This comprehensive process ensured that every technical element served the overarching goal of creating an emotionally resonant viewing experience that would connect deeply with audiences.

Evaluation Procedure

This capstone project was evaluated primarily by students, along with a few artists and non-artists. They were asked to assess the film using a Likert Scale, which focused on various aspects of the film such as its content, story, production design, music and scoring, and visual technical elements. To gather detailed feedback, the questionnaire included a series of items requiring respondents to rate their responses on a scale from 1 to 5.

Table 1. Likert Scale

Numeric Scale	Descriptive Rating
5.0	Excellent
4.0	Above Average
3.0	Average
2.0	Below Average
1.0	Poor

Statistical Treatment of Data

The data obtained from the assessment form is transformed into a substantial outcome, enabling the researcher to interpret the gathered information effectively. To ascertain the respondents' feedback, the initiator initially calculated the average (arithmetic mean) and subsequently interpreted it in alignment with the numerical scale values. The process of computing the mean serves as a foundational step in comprehending and analyzing the collected data, providing valuable insights for comprehensive interpretation and informed decision-making.

Table 2. Likert Scale Interpretation

Numeric Scale	Descriptive Rating
4.21-5.0	Excellent
3.41-4.0	Above Average
2.61-3.0	Average
1.81-2.0	Below Average
1.00-1.80	Poor

RESULTS AND DISCUSSION

"To Your Surprise" is a heartfelt 2D animated short film that explores the coincidental encounter between two characters - Raver, a reserved and melancholic individual, and Aira, a vibrant and optimistic soul. The story unfolds during an unexpected rainy day, where their paths cross in a seemingly ordinary moment that leads to an extraordinary connection.

The concept of this short animated film delves into universal themes of friendship, human connection, and the beauty found in life's spontaneous moments. Moving away from the industry trend of prioritizing spectacle over substance, "To Your Surprise" focuses on crafting nuanced character development and emotional resonance through its narrative. The film aims to remind viewers about the magic that can emerge from unplanned encounters and how a single moment can brighten someone's perspective on life.

The evaluation results, as shown in Table 3, highlight a clear trend in

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the respondents' assessments, with each criterion receiving consistently high mean scores, all above 4.5 on the 5-point Likert scale. This reflects a strong and positive reception across various aspects of the film. Notably, the "Contribution to the Multimedia Industry" emerged as the standout element, receiving the highest mean score of 4.69, which corresponds to an "Excellent" rating. This exceptional evaluation underscores the film's significant impact on new media technology, demonstrating its value in both educational and industry contexts.

Additionally, "Music and Scoring" earned a high mean score of 4.68, while "Production Design" also garnered an impressive 4.67. These high ratings emphasize the respondents' appreciation for the film's technical and creative elements. Even the lowest-rated criterion, "Uniqueness of Concept," which scored 4.52, still falls within the "Excellent" range according to the Likert scale equivalence, suggesting that all aspects of the film were received positively. These consistently high ratings across various criteria underscore the film's well-rounded appeal and its ability to resonate with respondents on multiple levels.

Table 3. Likert Scale

Category	Mean	Interpretation
Content	4.63	Excellent
Story	4.64	Excellent
Production Design	4.67	Excellent
Music and Scoring	4.68	Excellent
Visual and Technical Elements	4.53	Excellent
Uniqueness of Concept	4.52	Excellent
Contribution to Multimedia Industry	4.69	Excellent
Overall Creativity	4.57	Excellent
OVERALL	4.62	Excellent

Based on the Likert scale, scores from 4.21-5.00 represent "Excellent" performance, indicating that respondents strongly agreed with positive statements about the film across all evaluation criteria. This consistently excellent rating demonstrates that the animated short effectively achieved its artistic and technical goals while making a meaningful contribution to the multimedia landscape.

Project Development Challenges

The development of "To Your Surprise" faced several notable challenges throughout its production. Early concept development struggled with character depth and backstory establishment, particularly for Raver's melancholic disposition. Visual style development required multiple iterations to achieve the right emotional tone, with initial color palettes being too muted to effectively convey character transformation.

Technical challenges included synchronizing character movements with musical cues. Sound design initially competed with rather than complemented the musical score, requiring significant reworking. Despite these obstacles, the production team's persistence and creative problem-solving resulted in a cohesive and emotionally resonant final product, as evidenced by the excellent ratings across all evaluation criteria.

CONCLUSION AND RECOMMENDATION

The animated short profoundly resonated with audiences, transcending traditional storytelling boundaries to become a powerful medium of emotional exploration and human connection. Through its nuanced narrative, the film successfully illuminated the complex dynamics of friendship, resilience, and the unexpected beauty found in life's spontaneous moments. Viewers responded with remarkable

emotional engagement, demonstrating the project's ability to craft a deeply meaningful visual experience that challenges conventional animated storytelling approaches.

The film's core message of hope and interpersonal support was communicated with exceptional clarity, inspiring audiences to reflect on the transformative potential of empathy and connection. By presenting characters with depth and authenticity, the project created a narrative landscape that encouraged viewers to recognize the profound impact of small, meaningful interactions. The emotional journey of characters like Aira and Raver served as a compelling metaphor for human resilience, inviting audiences to embrace optimism and compassion in their own lives.

Audience feedback provided critical insights into both the project's strengths and potential areas of refinement. While respondents overwhelmingly praised the film's emotional depth, consistent artistic vision, and narrative integrity, they also offered constructive recommendations for future iterations. These suggestions encompassed technical and creative dimensions, including recommendations to enhance character dialogue complexity, improve scene transition fluidity, refine audio-visual synchronization, and develop more consistent character design and movement techniques.

The comprehensive feedback represents a valuable opportunity for continuous artistic and technical growth. Each recommendation serves not as a critique, but as a pathway to further exploration and refinement of the animated storytelling craft. Future iterations of the project can strategically incorporate these insights, potentially developing more sophisticated narrative techniques, advanced animation methodologies, and even more nuanced approaches to character development and emotional expression.

By maintaining a delicate balance between artistic vision and technical excellence, this animated short demonstrates the profound potential of animation as a medium for meaningful storytelling. It stands as a testament to the power of creative vision, technical skill, and emotional intelligence in contemporary animated filmmaking.

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AN ERGONOMIC ANALYSIS ABOUT RISK FACTORS OF CARPAL TUNNEL SYNDROME FOR ANGKAS DRIVERS IN METRO MANILA

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ABSTRACT

This study examines the ergonomic and demographic factors that contribute to Carpal Tunnel Syndrome (CTS) in Angkas motorcycle taxi drivers in Metro Manila. The Boston Carpal Tunnel Syndrome Questionnaire (BCTSQ) and structured surveys are used in this quantitative study to assess risk factors and symptoms. The findings show a significant correlation between an increased risk of CTS and higher BMI, longer work hours, and more years of driving experience. The prevalence of symptoms like hand pain, numbness, and difficulty gripping was significantly higher among drivers who worked more than 10 hours a day or who had a BMI over 25. The strong relationship between CTS development and prolonged repetitive tasks was further highlighted by regression analysis. Measures like required rest periods, ergonomic handle modifications, and BMI management programs are essential for lowering the risk of CTS in motorbike taxi drivers. To improve the occupational health and safety of drivers in the motorcycle taxi industry, this study emphasizes the significance of addressing ergonomic risk factors through customized workplace interventions, better work schedules, and routine health assessments.

Keywords: Musculoskeletal disorders, repetitive tasks, ergonomic interventions, angkas drivers, carpal tunnel syndrome.

INTRODUCTION

Motorcycle taxis (MC Taxi), which are a kind of transportation where riders are carried on motorcycles. Motorbike taxis in the Philippines are a common and effective means of navigating through traffic in numerous urban areas, particularly during rush hour if cars can be stuck in traffic jams. According to Machado Sanchez et al. (2019), drivers of urban transportation, particularly those operating taxis and motorcycle taxis, are subject to unique occupational-related environmental, social, and health conditions. MC taxi drivers are workers who are more likely to face health risks, which can negatively affect their quality of life, particularly in the physical world. MC taxi drivers scored lower on the evaluation, wherein this fact may be connected to the negative impact of the occupation on the seven aspects: mobility, activities of daily living, energy and fatigue, sleep and rest, pain and discomfort, dependency on medicine or treatments, and ability to work.

In addition to Machado Sanchez et al. (2019), there is also pain in the upper and lower limbs of a MC Taxi driver, wherein they frequently lack the physical conditioning of the particular muscles required in a riding posture, which results in lumbar and cervical/head pain as well as weariness and discomfort. Musculoskeletal disorders (MSDs) include carpal tunnel syndrome (CTS), wherein the muscles, nerves, ligaments, tendons, joints, cartilage, and spinal discs are all impacted by MSDs. According to Titis Mariyamah et al. (2024), there is an increasing volume of MC Taxis that makes motorbike taxi drivers more active, which increases the risk of CTS because of the awkward wrist posture that results from riding a motorcycle (the wrist is too long on the handlebars with repetitive motion), which affects the blood supply and nerves in the wrist and hand.

While Angkas has addressed the transportation needs of busy people in Metro Manila, the occupational hazards associated with motorcycle riding, especially for prolonged periods, cannot be overlooked. Motorcycle riders are exposed to various ergonomic challenges that can predispose them to musculoskeletal disorders (MSDs) over time. Carpal Tunnel Syndrome (CTS) stands out as one

of the most prevalent and weakening conditions, particularly among individuals engaged in activities requiring repetitive hand movements and prolonged wrist flexion. Mayo Clinic (2024) explained that CTS is characterized by compression of the median nerve as it passes through the carpal tunnel in the wrist, which leads to symptoms such as pain, numbness, tingling, and weakness in the hand and fingers. Activities that involve repetitive wrist motions, such as gripping handlebars and manipulating throttle controls, can exacerbate the condition and increase the risk of developing CTS. Despite the growing recognition of the ergonomic challenges faced by motorcycle riders, including Angkas drivers, there remains a lack of comprehensive studies examining the risk factors of CTS within this population. Existing research studies often focuses on broader occupational groups or fails to address the specific ergonomic demands of motorcycle ride-hailing services.

This study seeks to fill this gap by conducting an ergonomic analysis of musculoskeletal disorders, with a particular focus on CTS among Angkas drivers in Metro Manila. By identifying the ergonomic risk factors contributing to CTS among this population and assessing the severity of CTS symptoms, this study aims to inform targeted interventions and preventive measures to safeguard the health and well-being of Angkas drivers and enhance their occupational safety. Through a comprehensive understanding of the ergonomic factors influencing CTS among Angkas drivers, this study endeavors to contribute valuable insights to the field of occupational health and ergonomics, with implications for the broader community of motorcycle riders and ride-hailing service providers in Metro Manila.

Theoretical Background

Theoretical Framework

One of the theories that address Carpal Tunnel Syndrome (CTS) in the workplace is the Biomechanical Stress Theory, authored by Marras, W. & Karwowski, W. (2006). This theory emphasizes that musculoskeletal disorders (MSDs) in a workplace may result from

excessive biomechanical stress on the musculoskeletal system, such as repeated or sustained exposure to awkward postures, high force exertions, and repetitive motions. This theory is particularly relevant to motorcycle taxi drivers, whose job often involves awkward postures and repetitive movements, such as gripping handlebars and operating the throttle. The Biomechanical Stress Theory provides a framework for understanding how ergonomic interventions can reduce these biomechanical stressors and prevent MSDs, making it applicable for assessing and improving the working conditions of motorcycle taxi drivers to mitigate the risk of CTS.

A more in-depth understanding of CTS is provided by the Pathophysiology of Carpal Tunnel Syndrome, as described by Aboong, M. (2015). This theory explains that CTS occurs when the median nerve, which runs from the forearm into the palm, becomes compressed at the wrist. The carpal tunnel is a narrow, rigid passageway of ligament and bones at the base of the hand that houses the median nerve and tendons. Continuous pressure on the median nerve can lead to symptoms such as numbness, tingling, pain, and weakness in the hand. This pathophysiological perspective is crucial for identifying how the prolonged and repetitive use of motorcycle controls can exacerbate CTS among drivers, emphasizing the need for ergonomic solutions to alleviate this pressure.

Furthermore, the Neutral Posture Theory, authored by Grandjean, E. (1988), emphasizes the importance of maintaining natural body alignments and minimizing deviations from neutral postures to reduce biomechanical stress on the musculoskeletal system. This theory highlights that designing tasks and work environments to promote neutral postures can help prevent MSDs by reducing muscle fatigue and strain. For motorcycle taxi drivers, implementing ergonomic interventions that promote neutral postures while riding, such as adjustable handlebar positions and improved seating design, can help reduce the risk of developing CTS.

Literature Review

Motorcycle taxis, a crucial element of the transportation network in Metro Manila, have evolved significantly with the advent of ride-hailing platforms such as Angkas. These services provide a structured, professional approach to transportation, connecting commuters with trained motorcycle drivers and offering a flexible solution to the city's traffic congestion. Despite their benefits, the nature of the job poses substantial health risks to the drivers, who typically work long hours under challenging conditions. Studies highlight a high prevalence of musculoskeletal disorders (MSDs) among motorcycle taxi drivers, stemming from repetitive tasks and poor ergonomic conditions. For instance, research by the International Information and Engineering Technology Association (2022) found that a significant percentage of drivers experience pain in various parts of their bodies, including the neck, shoulders, and buttocks, due to prolonged hours of riding and exposure to physical strain.

Physical ergonomics plays a pivotal role in addressing these occupational health issues. As a field dedicated to optimizing human interactions with their environment, physical ergonomics seeks to minimize physical strain and enhance comfort, safety, and productivity. By aligning workplace design and tools with human capabilities and limitations, ergonomists aim to prevent injuries and improve overall well-being. The principles of physical ergonomics are crucial for motorcycle taxi drivers, whose jobs require sustained awkward postures and repetitive movements that can lead to severe health issues, such as Carpal Tunnel Syndrome (CTS). This branch of ergonomics emphasizes the need for ergonomic interventions in reducing the risk of MSDs, underscoring the importance of creating environments that support optimal human performance.

Carpal Tunnel Syndrome (CTS), one of the most common musculoskeletal disorders affecting motorcycle taxi drivers, is characterized by the compression of the median nerve within the carpal tunnel of the wrist. Symptoms include numbness, tingling, pain, and weakness in the hand, which can significantly impair a driver's ability to work and their overall quality of life. The repetitive nature of tasks such as gripping handlebars and operating the throttle, combined with prolonged wrist flexion and exposure to vibration, contribute to the development of CTS among these drivers. Studies, such as those by the Mayo Clinic (2024) and Khokar & Mohsin Ali (2023), demonstrate the high prevalence of CTS and other MSDs among motorcycle taxi drivers, highlighting the critical need for ergonomic solutions to mitigate these risks.

Ergonomic assessment tools like the Rapid Upper Limb Assessment (RULA) are essential in evaluating and addressing the risk of CTS. RULA focuses on assessing the postures, forces, and movements of the upper limbs, making it particularly relevant for identifying CTS risks among motorcycle taxi drivers. It evaluates wrist positions and repetitive tasks, guiding the development of targeted ergonomic interventions. This tool enables a thorough analysis of the ergonomic factors affecting motorcycle taxi drivers, supporting the implementation of effective interventions to reduce CTS risks and enhance their occupational safety and health.

Literature Gap

Many studies on musculoskeletal disorders (MSDs) among motorcycle taxi drivers primarily focus on their general prevalence, without thoroughly examining specific contributing factors. These include the duration and frequency of repetitive tasks, the particular postures maintained during rides, and the impact of external elements such as road conditions and motorcycle design. In the Philippines, research specifically addressing Carpal Tunnel Syndrome (CTS) among motorcycle taxi drivers is notably limited. This is significant given that the repetitive hand and wrist movements required for operating a motorcycle may increase the risk of developing CTS. The limited research on this topic can be attributed to the relatively recent establishment of the motorcycle taxi industry in the country. However, with the rapid growth and continued expansion of this industry, the need for such studies is becoming increasingly urgent. Understanding and addressing these occupational health concerns is essential to support the safety and well-being of motorcycle taxi drivers, who are vital to this growing sector.

Based on the identified research gap, the study established the following null hypotheses. It was hypothesized that ergonomic risk factors (H01), working hours (H02), and the age of the drivers (H03) each have no direct effect on the development of Carpal Tunnel Syndrome (CTS) among Angkas drivers in Metro Manila.

Conceptual Framework

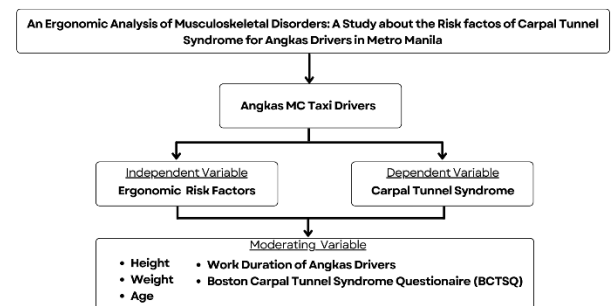


Figure 1. Conceptual Framework

Figure 1. shows the conceptual framework outlines the key elements of the study, focusing on identifying ergonomic risk factors and their impact on Carpal Tunnel Syndrome (CTS) among motorcycle taxi drivers specifically the Angkas drivers in Metro Manila. The independent variable holds various factors within the work environment, such as work environment, awkward posture, and vibrations, while the dependent variables represent the occurrence and severity of CTS. Moderator variables, including Height, Weight, Age, work duration, influence the relationship between ergonomic risk factors and CTS, reflecting the relationship between individual characteristics and workplace conditions.

Furthermore, theoretical frameworks, such as the Biochemical Stress Theory and Neutral Posture Theory, provide theoretical lenses through which to understand the mechanisms causing the development of CTS. By gathering demographic data and employing the Boston Carpal Tunnel Syndrome Questionnaire (BCTSQ), the study aims to explain the potential risk of ergonomic factors that results to the development of CTS among Angkas drivers and identify prevalent ergonomic risk factors.

METHODOLOGY

Research Design

The researchers decided to use a diagnostic research design that mainly focuses on knowing the root cause of problems. The problem was highlighted in the supporting data of this study. It was highlighted that the problem faced by Angkas is the development of Musculoskeletal Disorders (MSDs) particularly carpal tunnel syndrome (CTS). With that, the researchers wanted to investigate if the ergonomic risk factors such as the workload, duration of work, age, working experience, and working environment of motorcycle taxi drivers have a direct effect on the development of carpal tunnel syndrome.

Subject and Study Site

The subject of this study is motorcycle taxi drivers. According to the website, mrandmrshowe (2021) Angkas has an age qualification from 21 – 55 years old. In addition, this study focused on ages 22 years old with at least one-year experience in motorcycling to 55 years old working in Angkas. This subject was used to obtain data such as their workload duration of work, age, working experience, and working environment. The subject answers were used as quantitative data to assess if the ergonomic risk factors mentioned above have a direct effect on the development of Carpal Tunnel Syndrome (CTS).

Furthermore, the Angkas has a total population of 40,000 riders, it was given directly by an Angkas employee, and the study site will be in Metro Manila. The researchers surveyed the said location and were answered by the Angkas drivers. The researchers decided to survey the said location since the current main operations of Angkas are in Metro Manila.

Research Instruments

The researchers used survey questionnaires as research instruments. The researchers aim to gather data from the selected respondents which are Angkas drivers working in Metro Manila. The study utilized a structured questionnaire as the main instrument for data collection. The questionnaire was administered to the respondents, with a focused on assessing the ergonomic risk factors that Angkas drivers face in doing their work.

Survey questionnaires were structured with a basis from the Boston Carpal Tunnel Syndrome Questionnaire (BCTSQ). This instrument

was used to analyze the carpal tunnel syndrome (CTS) symptoms in an ergonomic or occupational health context of the Angkas driver. In order to determine the appropriate sample size, the researchers utilized Slovin's formula. Slovin's formula is employed to calculate the sample size needed to achieve a desired confidence level, particularly when there is limited knowledge about the behavior or distribution of a population.

Data Gathering Procedure

Identification of the respondents and the location of where the data gathering was conducted. The researchers treated Angkas drivers as the respondents of the study and the location of data gathering is limited to Metro Manila. The researchers focused on identifying the ergonomic risk factors that contribute to the development of Angkas drivers. Ergonomic risk factors may include workplace environment such as work duration. The researchers released a survey that focused on identifying the ergonomic risk factors and demographics of the respondents. The researchers also decided to consider using the Boston Carpal Tunnel Syndrome Questionnaire (BCTSQ) and Rula Assessment to help to identify the risk factors of repetitive tasks.

The survey was released and distributed to the Facebook group of Angkas which is publicly visible to people. The survey was treated as the data for this study. The collection of the data will then be recorded, however, due to the privacy implications; the researchers only presented the results of the survey. With the collected data, the researchers analyzed the data and interpreted the results based on the theories, objectives, and statements of the problem used in this study.

Ethical Considerations

In this study, ethical consideration is critical. It hinders data fabrication or falsification, hence promoting the core purpose of research: the pursuit of knowledge and truth. Several aspects will be considered to ensure the quality and integrity of this research. The Research and Publication Department of Colegio de San Juan de Letran Manila thoroughly checked the survey instrument during the validation process including the ethical consideration. The confidentiality of the information provided by respondents, specifically the motorcycle taxi drivers observed by the researchers. With that being said, the information of the respondents was not revealed. The protocol was explained to the respondents, including the nature of the study, its purpose, and as well as the expected output. Respondents were asked to participate in this study voluntarily. Furthermore, before answering the survey, the Angkas driver's consent were considered. The survey questionnaires were safely kept in a password-protected zip file to ensure the confidentiality and precision of the data collected. This precaution was put in place to protect participant responses from unwanted access or disclosure and to guarantee the security and privacy of all data gathered during our research study.

Data Analysis

The researchers used linear statistics, in order to predict the course of future events, an algorithm known as linear regression establishes a relationship that is linear among an independent variable and a dependent variable Kanade (2023). Based on this, linear regression is a controlled learning algorithm that predicts continuous or numerical factors by simulating the mathematical connection between variables. When the data contains at least two variables, this analysis method is beneficial.

Since linear models can take into account a variety of variables (such as continuous, interval, nominal, and ordinal), and take into consideration organized observations in the independent variables (such as hierarchical or repeatedly measured models) and dependent

variables multi- level models). Probability and multiple link functions can be utilized with linear models' distributions, Torres and Akbaritabar (2024).

RESULTS AND DISCUSSION

Table 1. Linear regression on Ergonomic Risk Factors and CTS

Independent Variable	Dependent Variable	Standardized Coefficients Beta	Computed - t	p-value	Decision	Conclusion
Ergonomic Risk Factor:	Carpal Tunnel Syndrome	.401	8.736	<.001	Reject Ho	Significant

Table 1 shows the simple linear regression model with Carpal Tunnel Syndrome as the dependent variable and the combined ergonomic risk factors such as age, height, weight, years of work experience as Angkas driver and work hours per day as the predictor. The standardized coefficient beta of 0.401 with t-value of 8.736 and the p-value is 0.001, means the combined ergonomic risk factors are a highly significant predictor of Carpal Tunnel Syndrome. The positive coefficient indicates that as the ergonomic risk factor increases, the possibility of having carpal tunnel syndrome also increases. Since p-value is less than .05 significance level, then we reject Ho. We can therefore conclude that Ergonomic risk factors such as age, height, weight, years of work experience as an Angkas driver and work hours per day are a significant predictor of carpal tunnel syndrome, with a substantial positive association among Angkas drivers in Metro Manila.

Table 2. Multiple regression ERF to CTS

Independent Variable	Dependent Variable	Standardized Coefficients Beta	Computed - t	p-value	Decision	Conclusion
Age	Carpal Tunnel Syndrome	.029	.624	.533	Do not Reject Ho	Not Significant
Height		.103	2.309	0.42	Reject Ho	Significant
Weight		.171	3.279	.001	Reject Ho	Significant
Work Experience		.249	4.665	<.001	Reject Ho	Significant
Daily work hours		.147	2.766	.006	Reject Ho	Significant

Table 2 shows the results of a multiple linear regression analysis with the CTS as the dependent variable and the different ergonomic risk factors as independent variables. The standardized coefficient beta for Age is 0.029 with a computed t-value of .624. The p-value is 0.533, indicating that Age does not significantly affect the development of CTS. Height has a coefficient of 0.103 and a p-value of 0.042, which is below the 0.05 level of significance. This suggests that height is a statistically significant predictor of the development of CTS, with a positive effect. Weight has a coefficient of .171 and is statistically significant ($p=0.001$), indicating that as weight increases, the development of CTS also increases. The coefficient for Work experience as an Angkas driver is .249, with a very low p-value (<0.001), indicating a strong, positive, and statistically significant effect on the development of CTS. Work hours per day have a coefficient of .147 and are also statistically significant ($p=0.006$), suggesting that more work hours per day are associated with the development of CTS. In summary, we can therefore conclude that height, weight, work experience, and daily work hours are significant predictors of the development of CTS. On the other hand, age is not a significant predictor of the development of CTS. The standardized coefficients (Beta) of the five(5) ergonomic risk factors show the relative impact of each variable on the development of CTS, with Work experience having the strongest effect ($\beta=0.249$), followed by Weight ($\beta=0.171$) and Work hours ($\beta=0.147$)

Table 3. Linear regression on result of daily work hours and CTS

Independent Variable	Dependent Variable	Beta	Std. Error	p-value	Decision	Conclusion
Daily work hours	Carpal Tunnel Syndrome	5.877	.860	<.001	Reject Ho	Significant

Note: Unstandardized coefficient

Table 3 provides the results of a linear regression analysis with the development of CTS as the dependent variable and daily Work hours as the predictor. The unstandardized coefficient for daily work hours is 5.877, with a standard error of 0.860. For each additional hour worked, the development of CTS is expected to increase by 5.877 units, holding other factors constant. Also, according to the study of International Information and Engineering Technology Association (2022) prolonged hours of riding can lead to various health issues, particularly musculoskeletal disorders (MSDs). The p-value is <0.001 which is lower than 0.05 significance level, thus we reject Ho which implies that daily work hours is a highly significant predictor in the development of CTS.

Table 4. Linear regression on result of age and CTS

Independent Variable	Dependent Variable	Beta	Std. Error	p-value	Decision	Conclusion
Age	Carpal Tunnel Syndrome	3.051	.979	.002	Reject Ho	Significant

Note: Unstandardized coefficient

Table 4 provides results from a linear regression analysis with the development of CTS as the dependent variable and Age as the predictor. The unstandardized coefficient for Age is 3.051, with a standard error of 0.979 which implies that for each additional year of age, the development of CTS is expected to increase by 3.051 units, assuming other factors remain constant. Since the p-value is less than the 0.05 significance level, then we reject the Ho. Also, according to Steinberg (2022) between the ages of 30 and 50 are the most common age group to experience carpal tunnel syndrome. Therefore, we can say that age is a significant positive predictor on the development of CTS.

CONCLUSION

This study examined the ergonomic risk factors contributing to Carpal Tunnel Syndrome (CTS) among Angkas drivers in Metro Manila, revealing it as a significant occupational health concern. The demographic data showed that most respondents were aged 31–40, with a common height of 5'6" and weight between 66–70 kg. Over 81% of drivers had more than two years of work experience, and 54.9% reported working over 10 hours daily. A majority of the drivers experienced CTS-related symptoms, such as hand pain (72.8%) and tremors (56.4%), which occurred 2–3 times per week. These symptoms were most pronounced during tasks like gripping the throttle, with varying levels of difficulty in performing job-related tasks.

The potential development of CTS among Angkas drivers mirrors findings from various studies that document the high incidence of musculoskeletal disorders (MSDs) in motorcycle taxi drivers. For instance, Khokar and Ali (2023) identified a significant 13% prevalence of CTS among motorcycle drivers, aligning with the results of this study that show a high rate of pain and discomfort among Angkas drivers, this means that most angkas drivers in Metro Manila are potentially developing CTS. The repetitive nature of tasks such as gripping the throttle and maintaining posture while driving is

a shared factor between their study and the current one. This correlates with the work of Utami (2023), who also found that repetitive wrist motions from prolonged throttle use are significant contributors to CTS in motorcycle riders, reinforcing the ergonomic risks faced by Angkas drivers.

Furthermore, the study's findings that work experience, weight, and daily work hours significantly contribute to CTS development are consistent with the literature. For instance, the study by Chen et al. (2023) showed that individuals with higher BMI had a double increased risk of developing CTS, which directly correlates with the present study's findings linking weight to CTS risk. This supports the concept that BMI is a significant factor in the development of musculoskeletal disorders, as highlighted by Woolley et al. (2019), who noted that higher BMI could exacerbate the risk of MSDs such as CTS. In addition, longer working hours, which were reported to increase CTS symptoms in this study, are consistent with the findings of the International Information and Engineering Technology Association (2022), which showed that motorcycle taxi drivers commonly work long shifts, heightening the risk of occupational disorders.

Theoretical frameworks also provide important insights into the study's findings. The Biomechanical Stress Theory, as outlined by Marras and Karwowski (2006), explains how prolonged exposure to biomechanical stress from tasks like gripping handlebars and repetitive wrist movements can lead to MSDs, including CTS. This aligns with the studies finding that drivers who work longer hours and engage in repetitive tasks are at a higher risk of developing CTS.

In conclusion, this study's results reinforce the findings from existing literature, indicating that prolonged exposure to ergonomic risks, such as repetitive motions, awkward postures, and long work hours, including the ergonomic factors such as Age, Height, and Weight significantly contributes to the high development of CTS among Angkas motorcycle taxi drivers. The study highlights the need for practical ergonomic solutions, optimized work schedules, and regular health monitoring, to reduce the strain on drivers and prevent further complications. These recommendations align with the work of Public Health Tulane (2023) and Kiran (2020), who emphasize the importance of optimized working schedules in preventing MSDs and improving workplace safety. By addressing these issues, Angkas can help maintain better health and well-being for its drivers, ensuring long-term occupational sustainability and safety. (Parker et al., 2017).

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RECRUITMENT, SELECTION, AND HIRING PRACTICES FOR ACCEPTABILITY AND INCLUSION FOR PWDS IN THE FOOD INDUSTRY

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ABSTRACT

In the Philippines, the Magna Carta for Persons with Disabilities was established to provide equal rights to PWDs. However, their potential remains untapped due to various barriers they face in employment. Thus, this study examines the extent of acceptability and inclusion of PWDs for employment at selected food establishments in Manila. A descriptive-correlational research design using Pearson's R correlation was utilized to analyze the interrelationship between recruitment, selection, and hiring practices and the acceptability and inclusion of PWDs in the food service industry. Findings indicate that the relationships between recruitment, selection, hiring, and acceptability and inclusion practices regarding PWDs were strongly correlated, highlighting the interconnectedness of these processes in fostering a more inclusive work environment. This study suggests that adopting inclusive employment strategies may foster a more diverse workforce and address gaps in workforce inclusivity within the industry.

Keywords: *Acceptability, hiring practices, inclusivity, recruitment practices, PWDs, selection practices.*

INTRODUCTION

Persons with disabilities (PWDs) are individuals with long-term physical, mental, intellectual, or sensory impairments in interaction with various barriers that may hinder their full and equal participation in society (World Health Organization, 2011). Despite legal protections, PWDs continue to face systemic discrimination and disproportionately high unemployment rates compared to non-disabled individuals (Gupta & Priyadarshi, 2020). Inaccessible recruitment systems, attitudinal biases, and limited workplace accommodations often constrain their career development.

In the Philippines, Republic Act No. 7277, or the Magna Carta for Persons with Disabilities, affirms the right of PWDs to equal employment opportunities. However, implementation gaps persist. As of 2023, only 20.5% of the 1.44 million registered Filipino PWDs were employed, with most working in informal or low-wage sectors (Philippine Statistics Authority [PSA], 2024; Pedron, 2024). This underemployment reflects broader challenges in inclusive hiring, such as job matching, reintegration barriers, and employer misconceptions about disability and productivity. Their potential often remains untapped due to various barriers they face in employment (Espinosa, 2023). Of the 1,187,563 Filipino PWDs registered with the National Council on Disability Affairs (NCDA), only 353,000, or about 20%, were part of the workforce as of 2022.

The literature highlights study gaps in the low employment rates of persons with disabilities (PWDs). For instance, inclusive hiring practices are not merely ethical imperatives—they are strategic interventions that can improve employment rates, foster diverse workplace cultures, and enhance organizational resilience (Kalargyrou et al., 2019; Gewurtz et al., 2016). However, a critical gap remains in human resource (HR) literature: while prior studies have explored job satisfaction (Heera & Devi, 2016; Vornholt et al., 2013), workplace discrimination (Kim et al., 2020; Luo & Wang, 2017), and employer attitudes (Mahmud, 2009; Mansour, 2009), few have examined how recruitment and selection processes themselves shape the inclusion of PWDs—particularly in service industries where communication and customer interaction are central. This study addresses that gap by focusing on two key constructs: workplace acceptability, defined as the

degree to which PWDs perceive the work environment as welcoming, respectful, and conducive to their participation (Marzo Campos et al., 2020); and inclusion, understood as the active integration of PWDs into organizational structures, roles, and cultures, beyond mere tokenism (Shore et al., 2018). These constructs are especially relevant in the food service sector, where deaf and hard-of-hearing individuals face unique barriers due to communication demands and customer-facing roles.

Thus, by examining inclusive recruitment practices and their relationship to workplace acceptability and inclusion, this study contributes to the advancement of Sustainable Development Goals—SDG 8 (Decent Work and Economic Growth) and SDG 10 (Reduced Inequalities). It also offers practical insights for hospitality businesses seeking to align with evolving social expectations, enhance brand equity, and reduce turnover through inclusive employment strategies. While the focus is on food establishments, the implications extend to broader hospitality contexts, reinforcing the value of ethical and inclusive HR frameworks. This builds stronger partnerships between companies and disability groups, reducing workplace stigma associated with disability and improving the availability of accommodations (Gewurtz et al., 2016).

This study seeks to raise awareness and offer beneficial insights to the food service industry, encouraging inclusivity by hiring persons with disabilities. Despite representing less than a quarter of the total population of PWDs in the Philippines—numbering around 99,319 individuals—this paper specifically focuses on those who are deaf or hard of hearing. This focus stems from the limited employment opportunities for deaf individuals in the food service industry, where communication is critical. Research suggests that deaf individuals encounter unique barriers to employment, including misconceptions about their abilities and a lack of inclusive workplaces. Adopting inclusive employment strategies may foster a more diverse workforce and address gaps in workforce inclusivity within the industry. Hospitality businesses may find that implementing these strategies

aligns with societal expectations for inclusivity, potentially enhancing brand image and customer perception. Additionally, the data suggests that investing in training and mentorship programs could support retaining employees with disabilities, potentially reducing turnover costs over time. While this study focuses on food establishments, the implications may extend to other areas within the hospitality sector. Overall, exploring inclusive employment practices for PWDs supports hospitality leaders in developing or enhancing diversity initiatives, which could contribute to a more supportive and inclusive industry culture.

The research aims to examine the recruitment, selection, and hiring practices in employing persons with disabilities (PWDs) in the food service industry in Manila and to determine the relationship between employment practices, acceptability, and inclusion in mainstream employment in the industry. Specifically, it seeks to answer the following questions: (1) What is the respondents' assessment of the recruitment, selection, and hiring of PWDs in the food service industry? (2) What is the extent of acceptability and inclusion of PWDs for employment in the food service industry? (3) Is there any significant correlation between the recruitment, selection, and hiring practices and the acceptability and inclusion of PWDs for employment in the food service industry? Moreover, (4) What strategic interventions can be developed to enhance the hiring process for persons with disabilities in the food service industry?

Theoretical Framework

This study is anchored in the classic Resource-Based Theory (RBT) of Barney (1991), which posits that sustainable competitive advantage stems from resources that are valuable, rare, inimitable, and non-substitutable. RBT emphasizes internal organizational capabilities—particularly human resources—as key drivers of long-term performance (Kozlenkova, Samaha, & Palmatier, 2014). It provides a strategic lens for evaluating how firms leverage unique assets, including inclusive HR practices, to differentiate themselves in competitive markets.

Barney (2001) later expanded this framework to highlight the strategic role of human capital in achieving organizational goals and fostering innovation. Human resources are not only operational assets but also strategic levers for diversity, equity, and inclusion. In this context, inclusive employment—especially of persons with disabilities (PWDs)—is reframed from a social obligation to a strategic opportunity (Alemany & Vermeulen, 2023). Organizations that embrace disability inclusion tap into underutilized talent pools, enhance workforce diversity, and reflect the heterogeneity of their consumer base (Kalargyrou & Volis, 2014). The authors found that hospitality firms implementing disability inclusion initiatives reported benefits such as improved employee morale, customer satisfaction, and brand reputation. These findings align with Miethlich (2019), who emphasized that employing PWDs contributes to cost efficiency, reduced turnover, increased reliability, and enhanced organizational loyalty. Dibben et al. (2002) similarly argued that disability-inclusive employment practices can strengthen organizational identity and stakeholder trust, especially in service-oriented industries.

By integrating RBT, this study underscores the strategic value of inclusive recruitment, selection, and hiring practices. RBT posits that organizations gain a competitive advantage by leveraging unique, valuable, and inimitable resources—including human capital. In this context, disability inclusion is positioned not only as a moral imperative but also as a source of operational strength and innovation, particularly salient in the food service sector, such as restaurants, catering services, institutional food operations, and hotel-based dining facilities. This is a rapidly expanding domain within hospitality characterized by high customer interaction, fast-paced service delivery, and labor-intensive roles, and each demanding a workforce

that is adaptable, empathetic, and responsive to diverse customer needs. Given its reliance on frontline employees and its vulnerability to high turnover and burnout, the food service sector presents both a challenge and an opportunity for inclusive human resource strategies. This framework supports the study's aim to promote inclusive HR strategies that not only enhance employee engagement and retention but also generate broader social impact—benefiting both businesses and marginalized communities.

Conceptual Framework

In depicting the overall purpose of the study, the researchers design a conceptual framework anchoring on the resource-based theory of Barney (1991) and from the studies of Bonaccio, Connelly, Gellatly, et al., (2019), and Oyadiran (2023) shown in Figure 1.

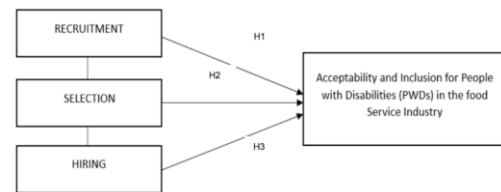


Figure 1 Conceptual Framework (author)

Literature Review

The literature review explores three key themes relevant to the study: (1) human resource management in the food service industry, (2) recruitment, selection, and hiring practices, and (3) workplace acceptability and inclusivity for persons with disabilities (PWDs)

General Recruitment Practices in the Food Service Industry

Human resource management (HRM) in the food service industry shares core functions with other sectors—such as payroll, compliance, and staffing—but is uniquely shaped by high turnover, customer-facing roles, and service quality demands. Employee retention is particularly critical, as it directly influences customer satisfaction and operational stability (Reich, n.d.).

Reward systems, including promotions, incentives, and training programs, have been shown to improve retention and motivation among food service employees (Awolusi & Jayakody, 2021). Carter (2023) emphasizes that HR managers in hospitality must foster motivation and satisfaction to ensure consistent service delivery and organizational success. Similarly, HR Cloud (2023) reports that effective HR practices in restaurants contribute to lower turnover, better customer experiences, and improved financial performance. While HR is increasingly recognized as a driver of inclusion, disability-related HR strategies remain underexplored in food service contexts. Schloemer-Jarvis, Bader, and Böhm (2022) note that disability inclusion within HRM is often fragmented across disciplines, limiting its practical application in industry-specific settings.

Inclusive Recruitment for Persons with Disabilities (PWDs)

Inclusive recruitment refers to HR practices that actively remove barriers and promote equitable access for marginalized groups, including PWDs. Barba-Sánchez, Ortiz-García, and Olaz-Capitán (2019) argue that fostering a socially inclusive environment is essential for integrating PWDs into the workforce. Their study highlights that social barriers—not impairments—are the primary obstacles to employment, and that entrepreneurship and tailored recruitment can serve as pathways to inclusion.

Hagner, Dague, and Phillips (2015) found that workplace culture plays a pivotal role in the inclusion of employees with disabilities. Their

research revealed that stronger workplace cultures correlate with higher levels of social integration and acceptance of PWDs, underscoring the importance of HR-led cultural interventions.

Kulkarni and Valk (2010) explored how HR managers and employees with disabilities perceive organizational practices related to entry, integration, and development. Their findings suggest that both groups often avoid highlighting disability due to stigma, resulting in underutilization of PWD talent. This calls for proactive HR policies that normalize disability as a form of diversity and provide structured support.

Vornholt, Uitdewilligen, and Nijhuis (2013) conducted a comprehensive review of factors affecting workplace acceptance of PWDs. They identified three key influences: coworker attitudes, organizational culture, and individual characteristics. Their work supports the notion that inclusion is not merely about hiring but about fostering environments where PWDs are respected, supported, and socially integrated.

Collectively, these studies affirm that inclusive recruitment is not a peripheral HR function but a strategic imperative. In the food service industry—where communication, teamwork, and customer interaction are central—tailored recruitment and onboarding processes for PWDs can enrich workplace diversity, challenge stigma, and elevate organizational outcomes.

Recruitment, Selection and Hiring Practices

The *recruitment* process is a lengthy and strategic procedure that helps organizations find potential competent candidates. It involves conducting ongoing research to identify the most suitable employees for the business. Recruitment practices help organizations attract top talent (Peek, 2019). In connection with this, organizations place high value on job analysis and job descriptions, adhering to the required standards for recruitment (Miano, 2019). According to Abbas, Shah, and Othman (2021), HR professionals play a pivotal role in recruitment, beginning with identifying staffing needs and narrowing down applicants to select the most qualified candidates. Afterward, HR professionals narrow down the applications and select the most qualified candidates.

The module *Management of Food Service* by Priyadharsini (n.d.) outlines four steps in the recruitment process. The first step is determining the vacancy, which involves a detailed analysis of the vacant position. Next, a job analysis is conducted, in which HR describes and specifies the expected standards for the job. Following that, the focus shifts to attracting potential candidates. Priyadharsini (n.d.) emphasizes the importance of attracting the most competent candidates, especially in the food service industry. Lastly, a shortlist of candidates is created.

HRM must explore beyond traditional labor sources and establish recruitment methods that involve and promote candidates, including persons with disabilities (PWDs) (Kalargyrou, 2014; Kalargyrou & Volis, 2014, as cited in Kyprianou, 2020). Businesses that recognize the importance of looking beyond typical candidate sources and appreciate the benefits of diversity and inclusion in the workplace are key to success in the 21st-century economy (Henry, Petkauskos, Stanislawzyk, & Vogt, 2014, as cited in Kyprianou, 2020).

When recruiting PWD candidates in the food service sector, a 2022 report by the National Restaurant Association indicated that employers have partnered with several disability organizations. These organizations assign workers to restaurants, cover the cost of job training, and create training materials specifically tailored for individuals with disabilities.

In this context, a study recommends that HRM explore available government and NGO resources to recruit competent PWD candidates (Kyprianou, 2020).

Selection can be defined as evaluating candidates' qualities, expertise, and experience to reduce the applicant pool and identify the most suitable person for the position. This typically involves conducting interviews and using various tests and assessments to evaluate each candidate. The objective is to recruit individuals with the necessary skills in line with the company's requirements while also adhering to legal requirements regarding Persons with Disabilities (PWDs) (Zulmi, Prabandari, & Sudiro, 2021). A list of selection methods was addressed by Hayes et al., as cited by Schloemer-Jarvis, Bader, and Bohm (2021), which includes personality inventories, work samples, and interviews, all evaluated for their fairness and relevance to the job requirements. However, the research lacks detailed information on most methods, with articles primarily focusing on unstructured interviews, which show mixed outcomes regarding their suitability and relevance (Dela Cruz, 2023).

In comparison, it was discovered that PWDs were selected and recruited based on their abilities and potential, with a focus on adhering to policies promoting inclusivity and equal employment opportunities. Additionally, non-governmental organizations provide effective training and development programs to support the professional growth of employees with disabilities in the Philippines. Similarly, in the United States, employers are required to offer reasonable accommodations to enable qualified workers with disabilities to fulfill essential job functions. This is due to anti-discrimination laws, such as the Americans with Disabilities Act of 1990, which aims to protect individuals with disabilities from discrimination and ensure equitable opportunities in employment (Iwanaga et al., 2021). However, despite national, regional, and international laws, individuals with disabilities worldwide continue to face barriers to employment (Jimenez, 2023).

Short-term *hiring* helps a company fill a role (Peek, 2019). The process consists of four phases: sourcing, screening, interviewing, and selection. Sourcing involves creating a candidate pool and screening it to select those qualified for interviews. After the interview, offers are given to the chosen applicants (Raghavan, Barocas, Kleinberg, & Levy, 2020). Some employment practices enable online job applications, providing accessibility to individuals with disabilities, particularly those with mobility limitations and visual impairments, through features such as screen readers and keyboard navigation (Oregon Restaurant & Lodging Association, 2023). It is also more cost-effective than hosting interviews in person. Workplace accommodations are often necessary to facilitate effective job performance for individuals with disabilities, including providing written materials in accessible formats and offering flexible work schedules or remote work opportunities (Shrove, 2022).

Acceptability and Inclusivity in the Food Service Industry

By embracing diversity, practices positively impact employees, including those with disabilities. Human resource management, in particular, facilitates and supports the employability of persons with disabilities (PWDs) (Khan, Korac-Kakabadse, Skouloudis, & Dimopoulos, 2019). The employment of PWDs has been included in the CSR agenda of some business enterprises, with the intention of enhancing their public image by hiring PWDs. Businesses create more welcoming and supportive environments for employees with disabilities to provide inclusivity and equal access to opportunities and resources in the workplace (Khan et al., 2019). This review provides a comprehensive assessment of the literature on HR practices that potentially foster the acceptability of PWDs in the workforce. Inclusive employment ensures that employees feel valued, welcome,

and included, rather than isolated. An inclusive workplace accommodates all kinds of differences and disabilities, making individuals feel welcome and valued for their contributions. Poses (2019) found that inclusive workplaces provide employees with disabilities the same opportunities for advancement as their co-workers.

Furthermore, employees with disabilities who interact with customers face-to-face in the food services industry are more likely to foster customer loyalty, particularly among customers who prioritize inclusion (Lindsay et al., 2019). Despite the obstacles related to their disability status, PWDs demonstrate a strong focus on customer satisfaction and service. They overcome barriers to build successful, sustainable careers (Doan et al., 2023). Human resources promote a diverse workforce and equal opportunity for PWD employees, ensuring inclusive employment. Career sustainability for PWDs is dynamic and directly linked to their evolving employability in the food services industry (Richardson & McKenna, 2020). Acceptability and inclusivity for all workers, including PWDs, enhance the overall success and reputation of businesses, particularly in the food services industry (De Vos et al., 2020). The following hypotheses were proven during the study: (H1) Recruitment practices have a significant correlation with the acceptability & inclusion of PWDs for employment in the Food Service Industry. (H2) Selection practices have a significant correlation with the acceptability & inclusion of PWDs for employment in the Food Service Industry. (H3) Hiring practices have a significant correlation with the acceptability & inclusion of PWDs for employment in the Food Service Industry.

METHODOLOGY

Research Design

The researcher employs a descriptive-correlational research design to determine if there is a significant correlation between human resource practices, specifically recruitment, selection, and hiring practices, and the perceived acceptability and inclusion of PWDs in the food service industry. Correlational models allow researchers to identify patterns and associations between independent and dependent variables, offering predictive insights without manipulating the variables directly (Pearl, 2009). This design is appropriate for exploring how inclusive HR practices may influence the integration and acceptance of PWDs in service-oriented environments.

Respondents of the Study

The study focuses on deaf and hard-of-hearing individuals employed in food establishments. This subgroup was purposively selected due to the unique communication challenges they face in customer-facing roles, which are prevalent in the food service sector. Research indicates that deaf individuals often encounter barriers such as limited access to verbal instructions, exclusion from informal workplace interactions, and misconceptions about their ability to perform service tasks (Kuenburg, Fellingner, & Fellingner, 2016).

Sampling Frame and Technique

Respondents were selected using purposive sampling, targeting deaf/hard-of-hearing employees working in food establishments across Manila. The sampling frame included a mix of independent restaurants, mid-sized chains, and quick-service outlets to capture a diverse range of organizational contexts. Establishments were identified through disability advocacy networks, local government employment programs, and referrals from deaf community organizations. Inclusion criteria required that participants be formally employed, have at least three months of tenure, and self-identify as deaf or hard of hearing. To determine the minimum sample size, G*Power 3.1.9.4 was used, considering the model's largest number of predictors and statistical power parameters. Based on an effect size of 0.25, a significance level (α) of 0.05, and a power ($1-\beta$) of 0.80, the

computed sample size was 119 respondents (Hair et al., 2014; Kang, 2021).

Respondent's Profile.

Table 1 presents the demographic breakdown of the 123 respondents. The largest age group was 26–30 years (35.0%), followed by 31–35 years (30.9%), and 36 years and above (20.3%). The smallest group was 21–25 years (13.8%), indicating a workforce skewed toward older age brackets.

Table 1. Profile of the Respondents

Age	Frequency (N-123)	Percent
21-25 years	17	13.8
26-30 years	43	35.0
31-35 years	38	30.9
36 years and above	25	20.3
Job Position		
Service Crew/ Crew	51	41.5
Food Server/Server	36	29.3
Kitchen Staff Steward/Assistant	14	11.4
Cashier	6	6.5
Full Time Barista/ Bartender	6	4.9
Senior Associate	3	2.4
Runner	2	1.6
Management Trainee	1	.8
Assistant Cook	1	.8
Back of House	1	.8
Company Affiliation		
Caravan Food Group Inc / Elait / Over dough	30	24.4
Jollibee	17	17.1
Shakey's / Gold Medal food	13	10.6
The Coffee Bean and Tea Leaf	13	10.6
Buko ni Frutas/Fruitas	10	8.1
Zark's Burgers	7	5.7
Jamaican Patty	6	4.9
Subway	5	4.1
Mcdonalds	4	3.3
Pizza Hut	4	3.3
Tomato Cannon	3	2.4
Greenwich	3	2.4
Max's	2	1.6
Burgeritto	1	.8
Yellow cab	1	.8
Llaollao	1	.8
Johnny's Kitchen	1	.8
Goldilocks	1	.8
Total	123	100

In terms of job position, the majority were service crew members (41.5%), followed by food servers (29.3%). Other roles included kitchen staff (11.4%), cashiers (6.5%), and baristas/bartenders (4.9%). Specialized roles such as senior associate, runner, and management trainee accounted for smaller proportions, suggesting that most deaf employees occupied front-line service roles.

Company affiliation data revealed that Caravan Food Group Inc. (Elait/Overdough) employed the largest share of respondents (24.4%), followed by Jollibee (17.1%), Shakey's/Gold Medal Food (10.6%), and The Coffee Bean and Tea Leaf (10.6%). The remaining respondents were distributed across various chains and franchises, indicating a concentration of employment in a few dominant companies.

Instrumentation

The researchers utilized a self-constructed survey questionnaire as the primary data collection instrument. It was divided into three sections: demographic profile, assessment of recruitment/selection/hiring practices, and evaluation of workplace acceptability and inclusion. Items were developed based on policies and guidelines from the National Council on Disability Affairs. To ensure validity, the instrument underwent face and content validation by three experts in HR, food service, and research methodology. The Research and

Publication Department of Colegio de San Juan de Letran also reviewed it. Following expert recommendations, a pilot test was conducted with 20 non-respondents to assess clarity, consistency, and reliability. The instrument yielded a Cronbach's alpha of 0.956, indicating excellent internal consistency (Nunnally, 1978).

Data Collection.

The data collection process was conducted in accordance with approved research protocols and institutional standards. Prior to implementation, the study was reviewed and validated by the Research and Publication Department of Colegio de San Juan de Letran to ensure methodological rigor and procedural compliance. The survey data were collected using a structured questionnaire administered through Google Forms. Distribution was carried out through a hybrid approach: the survey link was shared electronically with the food services sector's target respondents, and printed copies were also distributed face-to-face to ensure broader accessibility and participation. Respondents were given adequate time to complete the survey at their convenience. Consent forms were provided to both participating establishments and individual respondents prior to data collection, ensuring that participation was voluntary and informed. The survey instrument included a brief overview of the study's purpose, instructions for completion, and assurances regarding the use and handling of responses. Upon completion of the survey period, all responses were compiled, cleaned, and organized for statistical analysis using the Statistical Package for the Social Sciences (SPSS). Data were coded and stored securely, and any personal or confidential information was used exclusively for research purposes. All data were systematically disposed of following analysis, in accordance with institutional data handling protocols and the provisions of the Data Privacy Act of 2012.

Statistical Treatment of Data

The researcher employed appropriate statistical tools to analyze the data collected in this study. The following procedures were used:

Frequency counts and percentages were utilized to describe the demographic profile of the respondents, including variables such as age, gender, and years of service.

Weighted means and standard deviations were computed to determine the central tendency and variability of responses across the key constructs. The weighted mean allowed for the differential importance of data values, providing a more nuanced interpretation of the respondents' assessments of biophilic design, employee well-being, and workplace efficiency.

Pearson's product-moment correlation coefficient (Pearson's r) was applied to examine the statistical relationships between recruitment, selection, and hiring practices and the acceptance and inclusion of persons with disabilities (PWDs) in the food service industry. This analysis identified the strength and direction of associations among the variables under investigation.

Ethical Considerations

This study adhered to ethical principles that prioritized the dignity, autonomy, and rights of persons with disabilities (PWDs), in alignment with the United Nations Convention on the Rights of Persons with Disabilities (CRPD, 2006). Recognizing the heightened risk of social exclusion and discrimination, the research design incorporated safeguards to ensure voluntary participation, informed consent, and data confidentiality.

Informed consent was facilitated through accessible formats tailored

to participants' communication needs, including plain language forms, visual aids, and supported decision-making protocols (Lindsay, Cagliostro, & Carafa, 2019). Participants were informed of their right to withdraw from the study at any stage without penalty. Given the sensitivity of disability-related data, a comprehensive data protection plan was implemented. All personal identifiers were removed through pseudonymization, and data were stored in encrypted, password-protected files. Access was restricted to the principal investigator and authorized personnel only. These measures complied with the Philippine Data Privacy Act of 2012 and were guided by international standards such as the General Data Protection Regulation (GDPR) (Kulkarni & Gopakumar, 2022). The study also acknowledged the ethical imperative to avoid tokenism and ensured that PWDs were not merely subjects of inquiry but active contributors to knowledge production. Ethical review and approval were secured from the institutional ethics of Colegio de San Juan de Letran committee prior to data collection.

RESULTS AND DISCUSSIONS

The assessment of recruitment, selection, hiring, and inclusion practices was conducted using mean scores and standard deviations, as summarized in Table 2.

Table 2. Mean Scores of the Assessment of Recruitment, Selection and Hiring

Recruitment	Mean	Std Deviation	Descriptive Remarks
Recruitment	3.6280	.43108	Strongly agree
Selection	3.5886	.41945	Strongly agree
Hiring	3.6049	.40768	Strongly agree
Acceptability and inclusion	3.4217	.60148	Strongly agree

Note: 1.00–1.75 = Strongly Disagree 1.76–2.50 = Disagree 2.51–3.25 = Agree 3.26–4.00 = Strongly Agree

The descriptive summary reveals that all assessed dimensions received mean scores within the "Strongly Agree" range, indicating generally positive perceptions of inclusive HR practices among deaf and hard-of-hearing employees in food establishments. Recruitment practices scored the highest (mean = 3.6280), reflecting strong agreement with inclusive efforts at this stage. This suggests that companies offer equal opportunities to PWD applicants based on qualifications and provide the same terms, conditions, benefits, and incentives. The recruitment results indicate that food establishments actively engage in inclusive employment practices for PWDs. The hiring (mean = 3.6049) and selection (mean = 3.5886) functions also received strong support. These findings highlight the posting of detailed job descriptions, including essential functions for PWDs, indicating strong support for transparency in job advertisements and assistance with interpreters during the screening and evaluation process.

On the other hand, the acceptability and inclusion category had a slightly lower mean (3.4217), although it still indicates strong agreement. This finding suggests that the food establishments recognize PWDs' right to work in an inclusive and accessible environment. However, there is greater variability in responses, indicating differing views on specific inclusion measures, as reflected in the standard deviations, which suggests moderate consistency in responses. Inclusion practices showed the greatest variability (.60148). The results reflect positive perceptions of the establishments' employment policies and practices, fostering inclusion and preventing discrimination against PWD employees.

PWD employees. These results align with Johnson and Joshi (2021), who emphasized that inclusive recruitment is a foundational driver of

organizational diversity. Their study found that establishments adopting inclusive recruitment practices were more likely to maintain inclusive selection and hiring processes—a pattern consistent with the strong correlation ($r = .749$) observed between recruitment and selection in the present study. However, contrasting perspectives are offered by Adams and Thomas (2019), who argued that inclusive recruitment does not always translate into equitable selection and hiring. Their research identified persistent biases in the selection process that hindered PWDs from advancing to employment. This discrepancy suggests that while recruitment may set the tone for inclusion, organizational context and decision-making practices significantly influence outcomes.

Moreover, Kulkarni and Gopakumar (2022) emphasize that while recruitment and selection are essential for PWD inclusion, post-hiring efforts such as training and workplace accommodations are crucial for ensuring long-term inclusion. This aligns with the moderate correlations between recruitment, selection, hiring, and acceptability and inclusion practices, suggesting that fostering true inclusivity requires actions beyond hiring alone. Despite this, Perez and Murphy (2022) argue that post-hiring initiatives—such as continuous disability awareness training, workplace accommodations, and supportive organizational culture—are more important for creating an inclusive work environment than recruitment, selection, or hiring. They suggest that the moderate correlation between recruitment and inclusion practices ($r = .442$) in our study supports this view, indicating that while recruitment influences inclusion, additional factors are necessary for true inclusivity.

Correlation between the recruitment, selection, and hiring practices and the acceptability and inclusion of PWDs for employment in the food service industry is presented in Table 3.

Table 3. Correlation Analysis

Variable	Recruitment	Selection	Hiring	Acceptability and Inclusion
Recruitment	1			
Selection	.749**	1		
Hiring	.703**	.777**	1	
Acceptability and Inclusion	.442**	.434**	.538**	1

Note: Correlation is significant at the 0.01 level (2-tailed), $N=123$ for all variables.

The results reveal statistically significant correlations among all variables, indicating strong interrelationships between inclusive HR practices and perceived workplace inclusion for PWDs. All correlations are significant at the 0.01 level, indicating strong associations between these variables. Recruitment and selection are highly correlated ($r = .749$), suggesting that establishments with inclusive recruitment practices are also likely to have inclusive selection processes. Recruitment is also strongly correlated with hiring ($r = .703$), indicating that effective recruitment strategies often lead to more inclusive hiring practices. A moderate correlation is observed between recruitment and acceptability and inclusion ($r = .442$), suggesting a relationship, though not as strong as with selection and hiring. Selection strongly correlates with hiring ($r = .777$), reflecting the alignment between these two employment processes.

Acceptability and inclusion show moderate correlations with recruitment ($r = .442$), selection ($r = .434$), and hiring ($r = .538$), indicating that while these processes influence inclusivity, they are not as tightly connected as the recruitment, selection, and hiring stages are to each other. These results underscore the interconnectedness of recruitment, selection, and hiring processes in fostering a more inclusive work environment for PWDs. As highlighted by Zulmi (2021), inclusive management practices—such as adherence to disability inclusion principles, supportive communication, flexible work arrangements, and accessible physical environments—play a critical role in fostering

equitable workplaces. Moreover, compliance with national disability laws and policies reinforces the legitimacy and sustainability of these practices. Acceptance and support, communication, flexibility, work-family culture, workload, and workplace physical circumstances were all factors that implicated the management of individuals with disabilities.

The findings of the study corroborate those of Kyprianou's (2020) study, which emphasizes the importance of Human Resources leveraging government and NGO resources to recruit qualified candidates with disabilities effectively. Furthermore, the selection and recruitment of PWDs were based on their abilities and potential, reflecting a clear commitment to adhering to policies that promote inclusivity and equal employment opportunities. However, Richardson and McKenna (2020) cautioned that while Human Resources advocates for a diverse workforce and equal opportunities for PWD employees, including inclusive employment within the food services industry, the sustainability of careers for PWDs is dynamic, tied to their evolving employability and workability. Persistent weak links between recruitment, selection, hiring practices, and inclusion suggest that equal opportunities for PWDs are not fully realized after hiring, highlighting a significant gap in employment practices. This study's moderate correlations between hiring and inclusion ($r = .538$) support this view, indicating that while inclusive hiring practices are foundational, they must be complemented by post-employment initiatives—such as disability awareness training, mentorship, and accommodations—to ensure sustained inclusion. These findings align with broader literature advocating for a holistic approach to disability inclusion that extends beyond recruitment and hiring alone.

Barriers to Employment of PWDs

Table 4 presents the results of the multiple-response checklist designed by the researchers to identify perceived barriers to employment for persons with disabilities (PWDs). Respondents were allowed to select all applicable items based on their personal experiences and beliefs. The advantage of using multiple-response questionnaires is their ability to efficiently capture respondents' views and attitudes without limiting their rights to provide accurate responses. They also provide insights into data analysis strategies. As Santos (2000) noted, multiple-response questionnaires are effective tools for capturing nuanced perspectives without restricting respondents' ability to provide accurate and comprehensive feedback.

Table 4. Identified Barriers to Employment of PWDs

Barriers for Employment	Frequency*	Percent*
1. Misconceptions regarding the capabilities of PWDs to work	32	26%
2. Negative attitudes of employers	46	37%
3. Social exclusion due to physical impairments	30	24%
4. Absence of providing assistive technology or devices (ex., Hearing Aid)	18	15%
5. Inadequate modifications to existing facilities to make them readily accessible and usable by employees with disabilities.	25	20%
6. Not modifying work policies or workplace rules specifically for individuals with disabilities.	15	12%
7. Misconceptions about the costs versus return on investment of integrating PWDs in the workforce.	21	17%
8. Often offered to do menial work.	15	12%
9. Limited Job Opportunities.	78	63%
10. Lack of access to training and seminars.	56	46%

Note: *Multiple response

The data outlines the barriers to employment faced by persons with disabilities (PWDs), as perceived by respondents. The most significant

barrier is limited job opportunities, reported by 63% of respondents, highlighting the scarcity of roles available to PWDs in the food service industry and reflects systemic exclusion from mainstream employment channels. Following this, lack of access to training and seminars (46%) suggests that professional development pathways for PWDs remain insufficiently supported.

Negative employer attitudes (37%) also emerged as a significant concern, indicating that workplace culture and implicit biases continue to hinder inclusive hiring. Misconceptions about PWD capabilities (26%) and social exclusion due to physical impairments (24%) further highlight the role of societal stigma and environmental barriers in limiting employment access.

Other notable barriers included the absence of assistive technologies (15%) and inadequate modifications to workplace infrastructure (20%), pointing to the need for improved accommodations and accessibility measures. Additionally, misconceptions about the financial implications of hiring PWDs (17%) and the tendency to assign them menial tasks (12%) reflect persistent stereotypes and undervaluation of PWD contributions.

These findings suggest that despite legal frameworks and advocacy efforts, significant challenges remain in achieving equitable employment for PWDs. Stereotypes about productivity, reluctance from management and coworkers, and customer biases continue to shape the employment landscape for individuals with disabilities.

The results are consistent with Aroonsrimorakot et al. (2020), who emphasized that PWD applicants in the labor market have historically faced challenges because “disability is often associated with social stigma or social disapproval in the labor markets” Similarly, Jahan and Holloway (2020) observed that “stigma stems from prejudice or from the belief that persons with disabilities are less productive than their non-disabled counterparts.” In contrast, Cheausuwantavee and Keeratipanthawong (2021) noted increased global awareness of PWD capabilities, as recognized in the United Nations Sustainable Development Goals, promoting inclusive policies to address employment issues and foster more inclusive societies.

Strategic Interventions

The findings of this study highlight the positive feedback on recruitment, selection, and hiring practices in food establishments regarding persons with disabilities (PWDs) in food service establishments. While these practices demonstrate promising strides toward inclusivity, further strategic interventions. These include Awareness and Training, Retention Strategies, Supportive Work Environment, Accessible Recruitment Channels, and Commitment to Inclusion.

Awareness and Training

Diversity Training. Implement training programs for hiring managers and staff to raise awareness about disabilities and inclusivity. Shen, Tang, and D’Netto (2020) highlight that diversity training improves attitudes toward PWDs and marginalized groups, reducing unconscious bias and attrition. Such programs ensure PWD candidates are fairly evaluated, creating welcoming workplaces that value qualifications over stereotypes.

Career Development Opportunities. Allow PWDs to receive free skills training from TESDA and NCDA and give them job positions in municipalities or barangays to have a stable income. Such programs lead to higher job satisfaction and retention. Kulkarni and Gopakumar (2022) emphasize that organizations that invest in the career

development of PWD employees see improved retention and long-term success.

Mentorship Program. Mentorship programs are critical in helping new hires with disabilities transition into the workforce. These programs provide guidance, advice, and support, making the integration process smoother for PWD employees. Lindsay, Cagliostro, and Carafa (2019) found that mentorship programs significantly improved job satisfaction and retention among PWDs, as employees felt more supported.

Accessible Recruitment Channels

Partnerships with Organizations. Collaborate with organizations specializing in job placement for individuals with disabilities, such as the Public Employment Service Office (PESO). PESO provides resources and information on best practices for inclusive hiring and recruiting, helping organizations develop effective strategies. They offer training programs to prepare PWDs for employment, equipping them with necessary skills and enhancing their employability. PESO can assist in advocating for policies that support the employment of PWDs, creating a more favorable environment for inclusive practices in organizations. Also, PESO can facilitate job matching by connecting employers with qualified PWD candidates, ensuring a better fit for both parties. This partnership with PESO makes fostering inclusive workplaces for PWDs in organizations vital.

Online Accessibility. The establishment needs to ensure that job postings and application processes are accessible on websites, such as Project Inclusion PWD Philippines accounts on Facebook. Von Schrader, Malzer, and Bruyère (2019) found that ensuring job postings and application portals are fully accessible to individuals with disabilities greatly increases the number of PWD applicants.

Assistive Technology Hearing Aids, adapted telephones, wheelchairs, magnifiers, etc., are assistive technologies that the company can utilize during the employment process for PWD applicants. Cheausuwantavee & Keeratipanthawong (2021) emphasized that assistive technology and devices help PWDs perform job functions effectively and efficiently and increase their self-esteem.

Commitment to Inclusion

Equal Opportunity. The organization should commit to providing equal employment opportunities to all individuals, regardless of disability status, through recruiting, hiring, and selecting PWD applicants based on qualification. Miller, Sabat, and Wilkerson (2020) found that companies with formal equal opportunity policies have significantly improved hiring outcomes and higher employee satisfaction among PWD employees, as these policies ensure consistent and fair treatment.

Diversity and Inclusion Goals. Establish specific goals and policy interventions for hiring and retaining disabled employees. Stone and Colella (2019) found that organizations that establish clear goals for recruiting and retaining PWDs see better results in terms of both the quantity and quality of PWD hires, as well as improved retention.

Create Disability-Focused Employee Resource Groups (ERGs). ERGs provide a supportive space for PWD employees, facilitating peer support and amplifying voices around needed policies. Allocating budgets to these groups and recognizing ERG contributions as valuable work (rather than unpaid volunteerism) reinforces company commitment to inclusion. ERGs can also assist in gathering feedback for continuous improvement in disability inclusion efforts (Kanarys).

Cultivate an Inclusive Culture: To reduce stigma, encourage understanding, and create an inclusive environment where employees

feel comfortable disclosing disabilities, implementing an employee storytelling initiative will help. This approach is mentioned by organizations like the Disability:IN and the Job Accommodation Network, which encourage companies to normalize discussions about disability by sharing personal stories and experiences.

CONCLUSION

This study examined the understudied gaps in recruitment, selection, and hiring practices concerning the workplace acceptability and inclusion of food establishments in Manila, Philippines. Results from the quantitative analysis indicated a strong correlation between recruitment, selection, hiring, and acceptability and inclusion practices regarding persons with disabilities (PWDs), such as providing equal opportunities to PWD applicants based on qualifications, also supporting equitable selection processes. Similarly, establishments with effective recruitment strategies often demonstrate more inclusive hiring practices. The study strongly endorses policies and practices that foster inclusion and prevent discrimination against PWD employees. Furthermore, in addressing the stigma and discrimination faced by PWDs in the food service industry, this study proposed strategic interventions to improve the recruitment, selection, and hiring processes for persons with disabilities, advancing inclusivity and equity in employment practices.

Implications of the Study

The practical and managerial implication of the study is providing the food service industry with a proposed strategic intervention to create a more inclusive working environment by developing an inclusive recruitment, selection, and hiring process that benefits both PWDs and the organization. Implementing strategic interventions aimed at inclusivity may positively influence the hospitality industry by fostering a more supportive and diverse workforce. Awareness and training programs, such as diversity and mentorship initiatives, could help reduce unconscious biases and improve job satisfaction, contributing to lower turnover rates. Accessible recruitment channels, including partnerships with organizations like PESO and accessible online portals, enable companies to attract a broader range of candidates, potentially enhancing recruitment effectiveness. Additionally, a commitment to inclusion—through equal opportunity policies and specific diversity goals—may create a fairer environment that benefits employees and customers, gradually strengthening the industry's reputation for inclusivity and adaptability.

Meanwhile, the study's results imply that although food establishments are generally supportive of inclusive hiring, there is a gap in providing PWD employees with consistent career development opportunities. To address this, establishments could implement targeted mentorship programs and career advancement workshops to support PWD employees' long-term growth. Initiatives such as mentorship pairings to help new PWD hires navigate their roles, along with leadership training and skill-building programs tailored for PWDs, encourage professional growth. By fostering a supportive work environment through these strategies, establishments may improve job satisfaction and retention among PWD employees and build a more inclusive workplace culture overall.

Limitations and Future Research

The study focused on deaf/hard-of-hearing employees, which limits the generalizability of findings across other disability groups. Future research should explore the experiences of individuals with physical, intellectual, and psychosocial disabilities to provide a more comprehensive understanding of inclusion in the food service sector.

Additionally, the study is limited to Manila and by expanding the scope to other geographical areas would offer broader insights into geographical variations in inclusive employment practices. Future researchers should also explore other sectors within the hospitality industry for a more comprehensive understanding of the HR practices. Furthermore, the quantitative nature of the study also limited the depth of respondent perspectives thus, future research should incorporate qualitative or mixed method approaches to capture richer, more nuanced data on PWD experiences, organizational culture, and policy implementation.

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CJL CLEANSATION

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ABSTRACT

Household cleaning products are essential for maintaining hygiene, yet consumers seek more efficient and convenient alternatives. While traditional toilet cleaners dominate the market, there are limited research materials on fizzy toilet cleaner bombs. This study assesses the market potential, demand, and financial feasibility of Bubbly Top, a toilet cleaner bomb, targeting mothers aged 40 to 54 in Barangay Pasong Buaya II, Imus City, Cavite. Consumer surveys and financial projections were used to analyze feasibility. Findings indicate a 93% willingness to purchase, a significant demand-supply gap, and projected profitability by 2026. Results suggest that strategic marketing, operational efficiency, and sound financial planning are key to successful market entry. Furthermore, the study highlights the role of product innovation in addressing consumer needs while contributing to local economic opportunities.

Keywords: Toilet Cleaner Bomb, Household Cleaners, Business Plan, Market Research, Demand and Supply

INTRODUCTION

In today's competitive market, innovation and efficiency are crucial in meeting evolving consumer needs. According to Shahariya et.al. (2025), Consumer needs are the driving force behind successful business strategies, and understanding these needs is essential for creating products and services that align with market demands. Convenience and accessibility are also crucial factors, as modern consumers increasingly demand ease of use, quick delivery, and hassle-free services (Shahariya et.al., 2025). Thus, in order to meet the new needs of consumers, businesses need to innovate their products and/or services making it an essential part of a business's process. Shahariya et.al. (2025), states that innovation plays a critical role in addressing evolving consumer demands, and market research serves as the foundation for driving this innovation across various aspects of business operations. One significant area is product innovation, where businesses use consumer insights to develop new or improved products that meet current market needs (Shahariya et.al., 2025).

CJL Cleansation, a manufacturing enterprise located in Barangay Pasong Buaya II, Imus City, Cavite, is set to redefine the household cleaning sector with its flagship product, Bubbly Top. Founded by three dedicated partners whose initials form the company's name — symbolizing clarity, joy, and longevity — CJL Cleansation aims to provide high-quality, affordable cleaning solutions that elevate everyday hygiene practices.

Bubbly Top is an innovative toilet cleaner bomb designed to simplify and enhance the cleaning process. When dropped into a toilet bowl, it activates a unique fizzing action that produces a rich foam texture, ensuring a thorough and effective clean. Available in two appealing scents, lavender and red rose, and encapsulated by the memorable slogan "Plop, Scrub, Flush," the product targets the key demographic of middle-to-upper class households, particularly mothers aged 40 to 54 who are primary decision-makers in maintaining household cleanliness.

This business plan outlines CJL Cleansation's strategic approach, detailing comprehensive market research, production processes, financial projections, and operational efficiencies. By addressing a significant market gap between demand and supply, as Kaushik (2025) states that the Philippines' household cleaning products market growth has been steady as people now focus on cleanliness and hygiene. The

demand for effective and easy-to-use cleaning solutions is boosted as well by the increasingly busy schedules and urbanisation (Kaushik, 2025). The rising awareness regarding health and environmental concerns also drives the consumers preference shifting towards eco-friendly solutions. Thus, the increase in demand puts the company for steady growth and sustainable success. Moreover, CJL Cleansation's commitment to quality and community impact positions it not only as a business venture but also as a catalyst for improved public health and local economic development.

Name of the Company: "CJL CLEANSATION"



Figure 1. Company Logo

The name CJL Cleansation is a combination of the initials 'CJL', the initials of the proponents, and the word 'Cleansation', which is the combination of the term 'clean' and 'sensation'. Beyond the simplicity of the logo, it portrays significant symbolism within its elements.

The initial 'CJL' represents the names of the brand owners: Chera, Justice, and Lourdes, which reflects the lasting relationship of the owners with the hope of extending the relationship to its consumers. It also symbolizes the core pillars of the company which are Clarity, Joy, and Longevity. The word 'Cleansation' is a clever fusion of the words clean and sensation, envisioning the goal of the company to deliver a sensational level of cleanliness to its customers. It gives the impression that the products not only cleanse effectively and efficiently but also provide a refreshing, satisfying cleaning experience. The four-corner star symbolizes the company's desire to meet or exceed customer expectations by producing high-quality cleaning products and maintaining adaptability to changing market conditions and consumer preferences. Lastly, the font color of the business logo is Blue which

has a psychological association with cleanliness and reliability.



Figure 2. Brand Logo

The proponents have chosen the product name “*Bubbly Top*,” where the word ‘Bubbly’ is inspired by the fizzing and bubbling action of the toilet cleaner bomb, which gradually forms a foam texture when dropped into the toilet bowl and the word ‘*Top*’ combines *toilet* and *pop*, as the product is primarily used in the toilet bowl and pop imitates the popping of bubbles created when the product submerges in the water.

The brand's tagline, “*Plop, Scrub, Flush*,” describes the three-step cleaning process of the toilet cleaner bomb. *Plop* refers to the first phase of the cleaning procedure, when the cleaner bomb is dropped into the toilet bowl. *Scrub* refers to the second stage, where the toilet is scrubbed with a brush to remove stains and evenly distribute the product around the toilet bowl. Lastly, *Flush* refers to the final step, which rinses away the dirt, leaving the toilet bowl fresh and clean.

Product Offering

The proponents aim to provide a product that offers a quick, easy, and effective cleaning experience that removes stains and odors. The toilet cleaner bomb entitled Bubbly Top comes in the form of a tablet that you can dump into the bathroom sink or toilet to clean it. Bubbly Top will be available in a kraft stand-up pouch and offers two varieties of scent, Lavender and Red Rose.



Figure 3. Bubbly Top Scents

The product will be composed of various chemicals that are safe for consumers through external use. The product will then weigh 25g per unit as determined by the proponents to ensure the best effectiveness and efficiency for every use.

Marketing Highlights

The proponents will introduce Bubbly Top, a high-quality, affordable toilet cleaner bomb designed for convenience and effectiveness. Each unit weighs 25 grams and is available in two scent variations: lavender and red rose. It is formulated to dissolve and create a fizzing action, thoroughly sanitizing and disinfecting toilet bowls, making it an ideal choice for households seeking a quick, efficient, and reliable cleaning product. The price is ₱59 per pack, with each pack containing four pieces of Bubbly Top. The product will be distributed on a consignment basis and made available in local stores and retailers in the area, ensuring convenient access for consumers. The company will employ both traditional and digital promotional strategies. For traditional promotions, the company will have *Bombales Advertising* as its supplier in producing tarpaulins, posters, and thank-you cards. On digital promotions, the company will actively engage with the audience on Facebook and Instagram to expand its reach, increase

brand visibility, and build customer loyalty. The promotional strategies of the company also include an opening sale for the first twenty customers, along with limited-time offers for the first ten customers.

Management Highlights

CJL Cleansation is a partnership business and utilizes a horizontal organizational structure that is led and managed by the following proponents: Justice Phoenix E. Malabanan, General Manager, who is in charge of the company's overall strategic direction and operations; Chera Shyne M. Bautista, the Financial and Marketing Head, who oversees financial planning, budget allocation, and the development of marketing strategies and promotions for the offered products; Lourdes V. Condat, the Sales and Production Head, who manages sales and manages the production process, ensuring that the quality of the product will meet customer demand and expectations; and Production Staff, who is responsible for assisting the Sales and Production Head during the production of the product. The skills and expertise of the proponents will ensure that the company operates efficiently, that customers are satisfied, and that it grows in the long run.

Operations Highlights

CJL Cleansation will be run by all three proponents and one employee who will assist during the production and operation of the business. Furthermore, the production and office will be located at *Block 4, Lot 7, Primerose St. Fairgrounds Vallejo Place 4, Barangay Pasong Buaya II, Imus City, Cavite* which is part of one of the proponent's properties. The production process involves careful handling of raw materials, including dry and liquid ingredients, followed by molding, curing, and packaging. Strict quality control measures are implemented at every stage, from raw material inspection to in-process testing for visual defects, hardness, fizzing reaction, and cleaning effectiveness. Meanwhile, the company adheres to a comprehensive waste disposal system in compliance with local regulations, segregating organic and inorganic waste, and ensuring safe storage of hazardous materials. To maintain high-quality products, the company employs a detailed inventory management system, ensuring proper storage conditions and adherence to FIFO principles. Continuous improvement is achieved through corrective and preventive actions, guided by expert consultation, which is the Colegio de San Juan de Letran's Laboratory Technician, Inst. Kathleen Magno, LPT, RCT. Inst. Magno was able to help the proponents in resolving any production issues and enhance product quality.

Financial Highlights

The total capital contribution for the operations of CJL Cleansation will equate to ₱105,000 as each partner will contribute ₱35,000 each. The proponents will finance the business through their various means such as through their earnings and savings. The amount will also be used to purchase necessary equipment, furniture, and supplies, and be able to launch the company. For the first year of the company, the income statements show that the business is projected to experience a loss amounting to ₱20,133.12 after tax. But they are projected to gain ₱3,112.06, and ₱42,898.42 for the following years. This then shows a return on investment of -26.93%, 6.50%, and 93.72% for the years 2025, 2026, and 2027, respectively. Through the proponent's initial investment of ₱105,000.00, there is a projected cash balance of ₱52,473.24 and ₱26,761.33 for the years 2025 and 2026 which then showed a payback period of 1.97.

Socio-Economic Contributions

All businesses play a significant role in contributing to the overall economic performance of a nation, even if these contributions are small and not easily recognized. CJL Cleansation aims to contribute to the community, employment, government, and stakeholders.

By offering high-quality, effective, and efficient cleaning products, the company will enhance public health and well-being, providing households with the necessary products to maintain a cleaner and healthier living environment.

CJL Cleansation is committed to offering job opportunities to individuals regardless of age or educational background, as long as they are willing to learn. Through this, the company will foster growth in roles such as manufacturing, retailing, and sales as the business expands. This growth will not only generate income for the founders but also improve the standard of living for employees, contributing to the economic stability of the country.

The business will contribute to the government through taxes, which will be allocated to public services such as education, healthcare, public transportation, infrastructure construction and maintenance, housing assistance, poverty alleviation, defense and national security, economic stabilization, public safety, and environmental protection

CJL Cleansation is committed to empowering its stakeholders through inclusive business practices, continuous professional development, and skills training, fostering a culture of growth, learning, and shared success. Through these efforts, the company aims to drive both social and economic progress, creating a lasting, positive impact on society while achieving sustainable growth and success within the industry.

Literature Review

Inadequate toilet sanitation has posed significant microbiological risks, as according to Abney et al. (2021), pathogens from human waste can spread through flushing, bidet use, and bioaerosols, leading to contamination. Disease outbreaks linked to poor hygiene highlight the need for effective cleaning protocols. The study examines various disinfectants, noting that while chlorine-based products effectively reduce microbial contamination, inconsistencies in application methods and contact time affect their efficacy. Additionally, concerns about microbial resistance and environmental impact persist. The findings emphasize the need for standardized sanitation guidelines and further research to improve cleaning practices in both public and private restrooms.

These findings reinforce the importance of proper sanitation and the role of effective yet convenient cleaning solutions in maintaining hygienic restrooms. The study suggests that consumers prioritize reliable cleaning products that simplify disinfection while ensuring thorough microbial removal. By targeting individuals who actively seek efficient and easy-to-use cleaning products, businesses can align their marketing strategies with both public health priorities and consumer habits

During the pandemic, public hygiene practices, particularly in communal spaces like public toilets, significantly improved as a direct response to increased awareness and perceived risk of infectious disease transmission. The heightened concern among residents led to more frequent and thorough hygiene behaviors. Xu et al. (2022) mentioned that this improvement was evident in several key areas. For instance, individuals were more likely to disinfect toilet seats, use soap for handwashing, and dry their hands after using public facilities. Furthermore, they found that residents' increased risk perceptions of using public toilets during the pandemic contributed to their improved hygiene behaviors, such as cleaning the toilet seat with alcohol and washing hands with soap. This heightened awareness also led to more frequent disinfection efforts in public toilets themselves, underscoring the link between perceived risk and the adoption of preventive actions. The research also highlights that these improved hygiene practices are

not only crucial for controlling novel infectious diseases but are also effective in preventing outbreaks of common illnesses like influenza and norovirus (Xu et al., 2022).

These findings then suggest the pandemic has caused people to have higher hygiene awareness thus influencing their sanitation practices. This increases the potential demand for toilet cleaning products as people are more likely to purchase and use disinfecting and sanitary products to lower the risk of contracting infectious diseases. Businesses in the cleaning industry, specifically those in the toilet cleaning industry, can utilize this increase in perception in order to innovate and offer new products for consumers to purchase and use.

According to the study conducted by Araune et.al. (2024), their study determined that age and gender significantly influenced perceptions of sanitation practices before and during the COVID- 19 pandemic, specifically, older adults had the tendency to have more established perceptions of sanitation, while females exhibited higher awareness and engagement in sanitation practices. Their study also showed that before the COVID19 pandemic, respondents aged 65 and above exhibited the highest perception of sanitation practices, with a mean average of 3.78. Conversely, during the pandemic, the highest level of perception of sanitation practices was observed among respondents aged 45 to 54, with a mean average of 3.74.

These insights suggest that marketing strategies should be directed toward individuals aged 45 to 54, particularly mothers, as women have been found to exhibit greater sensitivity to cleanliness and sanitation compared to men (Araune et al., 2024). By acknowledging this demographic's heightened concern for hygiene, businesses can optimize their promotional efforts to cater to their needs and preferences effectively.

In the Philippines, according to Statista.com (n.d.), the revenue generated in the Household Cleaners market is projected to reach US\$713.89m in 2025. It is anticipated that the market will experience an annual growth rate of 4.11% (CAGR 2025-2029). This increasing popularity of eco- friendly household cleaners reflects the growing awareness and concern for environmental sustainability among consumers (Statista.com, n.d.).

This then allows the researchers to understand that there is a growing trend in the field of Household Cleaners thus, allowing the opportunity to thrive in the sector. As consumer preferences shift toward more sustainable and environmentally conscious products, there is an increasing demand for items that not only perform well but also align with ethical and ecological values. Consumers today are more informed about the environmental impact of the products they purchase, leading them to favor products that minimize harm to the environment. This trend toward eco-friendly products, combined with the growing market size, positions the business favorably if it incorporates green ingredients, biodegradable packaging, and other environmentally responsible features. By catering to the rising demand for both effective and sustainable cleaning solutions, the product could tap into a niche that appeals to conscious consumers, enhancing its appeal in an increasingly competitive market.

METHODOLOGY

Research Design

This study used a quantitative-descriptive research methodology. According to McCombes S. (2023), descriptive research accurately and systematically describes a population, situation or phenomenon. It would also be an appropriate choice when the research aims to identify

characteristics, frequencies, trends, and categories (McCombes S., 2023). Ghanad (2023) also states that the advantage of the descriptive method is that it allows the study to be performed in the respondent's natural context that not only certifies high-quality data but also represents data collection from a large population. A method in doing descriptive research is conducting surveys. Surveys are used as a method of gathering data in many different fields (McCombes S., 2023). They are a good choice when the researcher wants to find out about the characteristics, preferences, opinions, or beliefs of a group of people (McCombes S., 2023).

According to Fallon-O'Leary D. (2025), survey data and collection can make a massive difference in the success of a brand. In this era of data analytics, companies have more options than ever to solicit feedback through survey data from their target markets (D. Fallon-O'Leary, 2025). He also stated that survey data allows small businesses to connect with specific demographics for the following purposes: (1) To gauge their satisfaction with their products and services. (2) To understand their buying patterns and spending habits through behavioral research. (3) To determine which new offerings to develop based on pain points participants identify.

Thus, the researchers decided to conduct a market survey to further understand their target market such as their demographics, geographics, psychographics, and behavioral tendencies. This also provides a comprehensive view of the consumers and helps the business to segment their market more effectively. By understanding these different facets of their target audience, the business can then tailor their marketing efforts to specific consumer groups, ensuring that they deliver messages, products, and services that resonate with their intended audience. Additionally, this deeper market understanding allows businesses to predict consumer behavior, making it easier to forecast demand and adjust strategies proactively. Ultimately, this then allows the researchers to further understand and build competitive advantage, foster customer loyalty, and stay attuned to shifting market dynamics.

Target Market

Market Coverage

The proposed area coverage of CJL Cleansation is in Barangay Pasong Buaya II, Imus City, Cavite. As seen in Appendix D, the total number of households of the said Barangay for the year 2023 is 10,781, significantly higher than the 2015 population indicated by PhilAtlas which was 6,458 households. The Barangay Officials confirmed that it can be used as a basis for computing the growth rate. By computing the household growth rate, which is 6.61% for the year 2025, the household for the said year is estimated to be 12,254. These 12,254 households then become the business's target market as the product offered is a household cleaning product and not an individual consumer commodity.

Table 1. Segmentation Summary

Target Market Indicators	Specific Target Market
Demographics	Age: 40 years old to 54 years old Decision-makers of Household Products: Mothers Household Income: Lower to Upper Class
Geographics	Households along Barangay Pasong Buaya II, Imus City, Cavite
Psychographics	People who value the cleanliness of their comfort room and view sanitation as an important factor for a healthy lifestyle. People who are efficiency seekers for products to save time and effort.
Behavioral	People who frequently purchase and use hygiene and sanitation goods. People who are looking and are eager to try a new alternative and affordable product. Individuals who are frequent to local markets or those who buy from local stores.

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Table 1 shows the segmentation summary of the ideal target market of CJL Cleansation. As the company conducted a market survey, CJL Cleansation was able to gather the necessary information, whereas the segmentation summary above shows the target demographic comprises of individuals between the ages of 40 and 54 years old, primarily mothers who make household decisions regarding the purchase of household products and they come from a range of income levels, from lower to higher classes, which influence their purchasing behavior. Various studies also support the results of the survey thus influencing the proponents in choosing their desired target market. Krizan et.al. (2022), stated that the mother is the most common member of the family who goes shopping either alone or accompanied by another member. They also stated that when buying household products, food products and clothing, it was determined that the mother's opinion was the most important (Krizan et.al., 2022). The results of the survey conducted by the proponents support this study as it showed that 70.7% of the respondents have their mothers decide on what goods to buy in their respective households with 67.7% also having their mothers buy the said household goods.

According to the 2022 National Demographic and Health Survey (NDHS) by the Philippine Statistics Authority (2023), women aged 40–49 comprise 36.38% of the female population surveyed (n = 15,306). Among them, 89.4% of women aged 40–44 and 89.6% of women aged 45–49 reported that they are involved in decisions regarding major household purchases, indicating their critical role in household consumption decisions. This may also be due to the reason that 66.5% and 65.6% of married women aged 40–44 and 45–49 were employed respectively, within the last 12 months. According to the survey results conducted by the proponents, 14.1% of those who decide and buy household goods belong to the age group of 40–44 years old, 21.2% belong to the age group of 45–49%, and 26.3% belong to the age group of 50–54. These three (3) age groups then comprise 61.6% of the total results of the survey question asking the age groups of those who decide and buy household products in the respondent's own respective homes.

As stated by Lu B. (2024), the classification of income levels is as follows: individuals in the lower class earn less than ₱21,194 per month, while those in the lower middle class have monthly earnings ranging from ₱21,194 to ₱43,828. The middle class is defined by incomes between ₱43,828 and ₱76,669, and the upper middle class includes those earning between ₱76,669 and ₱131,484. The high-income (but not wealthy) group earns between ₱131,484 and ₱219,140, while the rich or upper class have monthly incomes of ₱219,140 or higher. As to the geographic aspects, this group comprised households in Barangay Pasong Buaya II, Imus City, Cavite.

These consumers prioritize the cleanliness of their toilets and consider sanitation as an essential factor for them to have a healthy lifestyle. Additionally, these individuals look for efficient goods so they may save time while also maintaining clean toilets. The behavioral component consists of those who frequently purchase sanitation and hygiene products and are willing to try something new, and affordable. Their frequent visits to local markets and shops indicate a strong desire to support small businesses and get involved with the community, which makes them the ideal target for focused advertising campaigns in this area.

Procedure

The researchers conducted surveys both online and face-to-face to strategically spread awareness about the product, brand, and company while primarily gathering information about the consumers' background. To ensure the accuracy of the data, the researchers first visited the PhilAtlas website and cross-referenced it with information obtained from the local barangay office.

Slovin's formula was then applied with a 10% margin of error, resulting in a sample size of 100 survey participants from a total of 11,494 households. A simple random sampling technique was used to fairly select the participants.

The survey consisted of 18 multiple-choice questions, with some items answerable by Yes or No. It focused on gathering demographic details such as age, gender, and household income, as well as household decision-making patterns regarding purchases. Additionally, it examined sanitation habits, purchasing behavior, product preferences, and awareness of toilet cleaner bombs. This structured approach allowed the researchers to assess consumer needs, preferred brands, buying frequency, and the factors influencing their choices when selecting toilet cleaning products.

Instrument of the Study

The survey was designed to gather comprehensive data on participants' backgrounds and purchasing behaviors related to toilet cleaning products. It included questions covering demographic information, such as age, gender, and household income, as well as household decision-making roles, identifying who typically decides and purchases household goods. The survey also collected psychographic data, assessing participants' attitudes toward cleanliness and sanitation, their preferred toilet cleaning product attributes, and their awareness of innovative solutions like toilet cleaner bombs. Additionally, behavioral patterns were examined, including purchase frequency, preferred brands, buying channels, and price sensitivity. This structured approach ensured a well-rounded understanding of consumer preferences and market trends.

Data Processing

According to Twin A. (2024), market research analyzes consumer behavior and economic trends to help businesses refine their strategies and develop competitive advantages. It allows businesses to better understand their target market by collecting and interpreting data.

Following this framework, the researchers first established the study's objective: to gain insights into consumer purchasing behavior and preferences for toilet cleaning products. The next step involved collecting and organizing survey responses, which included demographic details such as age, gender, and household income, as well as purchasing habits, product awareness, and brand preferences.

The analysis of the data revealed that the majority of respondents from Barangay Pasong Buaya II, Imus, Cavite, belonged to middle and upper-class households, with mothers primarily overseeing household purchasing decisions. These findings provide valuable insights for market positioning. As a result, the researchers plan to leverage this data to develop targeted marketing strategies, such as online advertising campaigns and product promotions focused on mothers as the key decision-makers in household sanitation product purchases.

RESULTS AND DISCUSSIONS

Demand and Supply Analysis

In economics, demand and supply analysis pertains to the connection between the amount of a product that producers aim to sell at different prices and the amount that consumers want to purchase (Britannica, T. Editors of Encyclopedia, 2025). The proponents assess the demand by estimating the future population of households likely to purchase the product, while the supply is calculated by analyzing the historical and current unit sold of competitors within the store and assuming a 25% increase in units sold.

Table 2. Total Projected Demand and Supply for 3 years (2024 – 2027)

Year	Total Household	Demand	Supply	
		Segmented Household (93%)	Projected Demand	Projected Supply
2024	11,494	10,690	251,686	2,964
2025	12,254	11,397	231,816	3,705
2026	13,064	12,150	247,131	4,632
2027	13,928	12,954	263,485	5,790

Table 2 shows the total projected demand and supply of CJL Cleansation from 2025 to 2027. The proponents conducted a survey in Barangay Pasong Buaya II to determine the willingness of the customer to purchase the product and their frequency of purchase. The segmented population is computed by multiplying the total households by 93%, the willingness of the consumer to buy the product, which puts the company in a strategic and advantageous position in the market. The growth rate for the year 2024 to 2027 is 6.61%. The projected demand is computed using the formula for the future value. Similarly, the rate of willingness is 93%, indicating a favorable response from the target market. The projected demand is computed by applying a 10% error rate.

On the other hand, the total projected supply of CJL Cleansation from 2025 to 2027, was computed by using the data from 2024 as the base year. The growth set in the projected supply is 25% annually. The supply was calculated by multiplying the sales by the number of weeks in a year. Since cleaning materials are not often bought daily, the proponents asked these competitors about their average sales of cleaning materials every week.

The data shows that there is a clear difference between the projected demand and projected supply, positively showing a significant gap, thus giving the company an opportunity to penetrate the market and introduce the Bubbly Top as an alternative cleaning solution for the households. The data also shows that there will be a steady increase in the need for toilet cleaning products in the future giving potential market stability for upcoming businesses such as CJL Cleansation.

Table 3. Total Projected Volume of Sales for 3 years (2025 – 2027)

Year	Project Demanded	Projected Supply	Demand and Supply Gap	Assumed Market Share	Total Projected Volume of Sales
2025	231,816	3,705	228,111	1.8934%	4,320
2026	247,131	4,632	242,499	2.1376%	5,184
2027	263,485	5,790	257,695	2.4140%	6,221

Table 3 shows the total projected sales of CJL Cleansation from 2025 to 2027. The gap is computed by subtracting the potential demand to the potential supply; a positive amount in the gap signifies a strong market opportunity and opens the door for the business to sell and earn profitably. The proponents then assumed low sales volume for the first three years of operations to gradually introduce and establish the product to the market. This strategy also prevents and reduces the chance of experiencing loss due to spoilage.

Projected Financial Statements

According to Drew M. (2025), financial statements refer to formal records that summarize the financial performance and financial position, clearly indicating the overall financial health and status of the company that allows them to assess the effectiveness of their operations and credit management. CJL Cleansation utilizes cost-plus pricing — a pricing method that businesses use to arrive at a sale price for their products and services by considering the direct material, direct labor, and overhead costs, and a mark-up percentage (Kenton W., 2022) — in setting the price of the product. The price will increase by 10%: ₱59, ₱64, and ₱71, for the year 2025, 2026, and 2027, respectively.

Projected Statement of Income

As defined by Chen J. (2025), the statement of income is a financial report used by business in tracking and determining the revenue, expenses, gains, and losses of the company in a period set, typically in a year.

Table 4. Statement of Income Projection for the Years Ending 2025, 2026, and 2027

CJL Cleansation Statement of Income Projection For the years ending 2025, 2026, 2027			
	2025	2026	2027
Revenues			
Revenues	₱254,880.00	₱331,776.00	₱441,691.28
Less: Allowance for Spoilage	5,097.60	6,635.52	8,833.83
Total Net Revenue	249,782.40	325,140.48	432,857.45
Direct Costs			
Cost of Revenue	152,554.70	189,630.15	236,572.22
Total Direct Costs	152,554.70	189,630.15	236,572.22
Gross Profit	97,227.70	135,510.33	196,285.23
Operating Expenses			
Payroll and Related Expenses	91,187.52	96,658.77	102,458.30
Office Supplies	1,236.50	1,310.69	1,389.33
Repairs and Maintenance	1,720.46	1,720.46	1,720.46
Utilities Expense	3,600.00	3,816.00	4,044.96
Rent Expense	7,200.00	7,632.00	8,089.92
Sales and Marketing	16,950.40	17,967.42	19,045.47
Taxes and Licenses	1,310.00	1,388.60	1,471.92
Total Operating Expenses	123,204.88	130,493.94	138,220.36
Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA)	(25,977.18)	5,016.39	58,064.87
Depreciation, Amortization, and Interest			
Depreciation and Amortization (OPEX)	866.98	866.98	866.98
Total Depreciation, Amortization, and Interest	866.98	866.98	866.98
Net Income (Loss) Before Tax	(26,844.16)	4,149.41	57,197.89
Tax Rate	25%	25%	25%
Income Tax Expense (Benefit)	(6,711.04)	1,037.35	14,299.47
PROFIT OR (LOSS)	(₱20,133.12)	₱3,112.06	₱42,898.42

Table 4 shows the projected statement of income of the company from 2025 to 2027. Although the ingredients used in making the Bubbly Top are chemical based, the proponents still assumed a 2% allowance for spoilage. The estimated income (loss) for 2025, 2026, and 2027 is (₱20,133.12), ₱3,112.06, and ₱42,898.42. During the first year of operation, the company experiences a net loss, realistically predicting difficulties in selling the product. The proponents consider the difficulty in penetrating the market as established brands are being used by the consumers, which resulted from the survey conducted by the proponents. In the succeeding years, the company is expected to generate income as a result of higher sales volume, increased prices of product offerings, and possible favorable market conditions.

Projected Statement of Financial Position

Statement of Financial Position, also known as Balance Sheet, lists all the assets, liabilities, and shareholders' equity for an operating period, which generally shows what the company owns and owes, and amount invested by the shareholders (Fernando J., 2025). The balance sheet shows the ability of the company to sustain its business operation, ideal for future needs of creditors and investors.

Table 5. Statement of Financial Position Projection As of the End of 2025, 2026, and 2027

	2025	2026	2027
Assets			
Current Assets			
Cash and Cash Equivalents	₱52,473.24	₱26,761.33	₱25,643.94
Total Inventory	2,966.34	3,687.25	4,600.02
Total Current Assets	55,439.58	30,448.59	30,243.96
Non-Current Assets			
Property, Plant, and Equipment	19,322.30	17,425.35	15,528.40
Total Non-Current Assets	19,322.30	17,425.35	15,528.40
Total Assets	₱74,761.88	₱47,873.94	₱45,772.36
Liabilities			
Current Liabilities			
Accounts Payable	-	-	-
Total Current Liabilities	-	-	-

Table 5 shows the projected statement of the financial position of the company from 2025 to 2027. The company intended to maintain a minimum cash balance equivalent to three months' worth of operating expenses to sustain initial operations while waiting for cash flow from sales. As seen in the projected income statement in Table 4, the company incurred a net loss during the first year of operation; however, the total balance of cash and cash equivalents is 52,473.24, indicating that the company is highly liquid and be able to sustain and meet its short-term obligations such as payroll, utilities, rent, and other related expenses. During the first year of operations, the proponents will not incur any drawings that will help the company to maintain cash flow until sales are sufficient to sustain its operations. For the next few years, the cash balance of the company decreased as the proponents intended to have drawings for personal use and will be used to expand the business product offerings and of business operations.

CONCLUSION

This study presents a comprehensive business plan for CJL Cleansation, a startup venture aiming to address household sanitation needs through Bubbly Top, an innovative toilet cleaner bomb. Designed for efficiency and ease of use, Bubbly Top leverages fizzing action and is available in two appealing scents, making it a practical and convenient solution for consumers. The product primarily targets mothers aged 40 to 54 in Barangay Pasong Buaya II, Imus City, Cavite, a demographic identified as key decision-makers in household purchasing.

Through market research and demand forecasting, findings indicate a 93% consumer willingness to purchase, underscoring a strong demand for the product. However, the demand-supply analysis highlights a significant gap, with projected demand substantially outpacing supply, reinforcing the market potential for CJL Cleansation. Despite an initial financial loss in 2025, projections suggest a turnaround in profitability by 2026 and sustained growth by 2027, driven by increased consumer adoption and operational efficiencies.

Furthermore, the study emphasizes stringent quality control measures, a structured production process, and strategic financial planning, ensuring both scalability and sustainability. Beyond economic viability, this venture also contributes to the local economy by creating employment opportunities and promoting hygiene awareness within the community.

Overall, the findings suggest that CJL Cleansation holds strong potential to establish a competitive presence in the household cleaning sector. By integrating innovation with market responsiveness and sustainable practices, the venture demonstrates capacity for both long-term business success and positive socio-economic impact.

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Guide to Contributors

Antorcha is a semi-annual scholarly journal of senior high school and undergraduate programs of Colegio de San Juan de Letran, Intramuros, Manila

The editors recommend that manuscripts conform to the following guidelines:

1. Manuscripts should be endorsed by their respective research advisers together with the consent from the student researchers.
2. Authors should submit two versions of the manuscript. One file (“file not for review”) should include the names of the authors (adviser and student/s), their contact information (e-mail addresses), and current affiliation (program/area and college). The other file (“file for review”) should remove any information that would identify the authors.
3. The paper should include keywords and an abstract of 100 – 200 words.
4. The article should contain approximately 6000 – 7000 words (including abstract, tables/figures, and references) and should be typed in a 12-point font, Garamond, double-spaced, with one-inch margin on all sides.
5. Tables/figures and references should follow the APA format style. Table titles are placed above while figure titles are placed below.
6. Reference should follow the APA format style.
7. The editors prefer to have the file in Microsoft Office Word 97-2003 Document (.doc) format and should be sent to antorcha.research@lettran.edu.ph.
8. Manuscripts that are already published or in the process of publication in other journals will not be considered in the Letran Business and Economic Review.

Review Process

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