

The Moderating Role of Locus-of-Hope Dimensions on the Financial Anxiety and Mental Well-Being of Filipino Axie Infinity Players

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Abstract:- The need for additional income in an economic crisis led to the rise of the online play-to-earn game, Axie Infinity, and there is a need to investigate the mental well-being of its players. The hope theory suggests that an individual has the capacity to find alternative solutions to a difficult problem and try them regardless of circumstances. This cross-sectional explanatory study aims to determine the moderating role of locus-of-hope (LOH) dimensions on the relationship between financial anxiety and mental well-being of Filipino Axie Infinity players. We hypothesized that financial anxiety is significantly related to mental well-being, financial anxiety will negatively predict mental well-being, and LOH dimensions will moderate the relationship between financial anxiety and mental well-being. An online questionnaire including the Financial Anxiety Scale, Warwick-Edinburgh Mental Well-Being Scale, and State Locus-of-Hope Scale-Short Form was disseminated to 384 Filipino Axie Infinity players. Results found that financial anxiety is negatively correlated with and predicts mental well-being. This suggests that Filipino Axie Infinity players who experience high levels of financial anxiety may have low levels of mental well-being. However, LOH dimensions were not able to moderate the negative relationship between financial anxiety and mental well-being among Filipino Axie Infinity players. Thus, future research may explore other variables that may possibly moderate their negative relationship.

Keywords:- Financial Anxiety, Well-Being, Locus-Of-Hope, Filipino Axie Infinity Players

I. INTRODUCTION

One of the adverse effects of the pandemic is the economic crises it has brought upon many countries, which resulted in significant income reduction, increased unemployment, and disruptions in services, transportation, and production (Pak et al., 2020). The government and organizations advised employees to adopt a work-from-home setup, following an increased engagement in job search using the Internet (Tudy, 2021). The rising alternative for additional income was to invest in cryptocurrency, a virtual coin system that functions as a standard currency (Farell, 2015). It provides an alternative for virtual payment of Non-Fungible Tokens (NFTs) or virtual assets like art and music which are both marketable and tradable among other goods and services (Tapscott, 2021).

Notably, the Philippines has one of the highest rates of cryptocurrency use among other countries, and the game, Axie Infinity, gained the most popularity among the trade of virtual currencies (Solonitsyna, 2021; Statista, 2021). The surge of daily active users on Axie Infinity began to increase from 30,000 to over 1 million in August 2021, with the majority of users coming from struggling countries (Servando et al., 2021). The recent study of De Jesus et al. (2022) reported that Axie Infinity players need a strong support

system to withstand the pressure, judgment, fatigue, weak internet connection, and inability to focus. Research about the Filipinos' perception of the advent of cryptocurrency and NFT games report that most players spend up to four hours a day playing the game even though the return of investments takes months, and they admit that there is financial instability in a volatile market (Francisco et al., 2022). A private clinical addiction counselor adds that crypto trading is comparable to gambling (De Jesus et al., 2022). Axie Infinity has become a worldwide phenomenon, particularly in the Philippines, where it lives up to its play-to-earn title (De Jesus et al., 2022). Accordingly, we find a need to study the financial anxiety of Filipino Axie Infinity players.

Studies that discuss financial anxiety as a separate construct from general anxiety commonly describe financial anxiety as intense worry and distress resulting from thinking about or engaging with one's financial situation (Archuleta et al., 2013; Jones & Heffner, 2022; Pijoh et al., 2020; Shapiro & Burchell, 2012). Research indicates that financial anxiety has a detrimental effect on mental well-being (American Psychological Association, 2015; Archuleta et al., 2013; Rajani et al., 2016; Shapiro & Burchell, 2012). The study of Pijoh et al. (2020) also claims that financial anxiety significantly influences employees' financial well-being. Moreover, current literature centers on the financial distress of college students pre-pandemic (Archuleta et al., 2013; Bernardo & Resurreccion, 2018; Tan et al., 2018). Research specifically regarding the financial anxiety of the Filipino population is scarce. This implies the need for more studies on the financial anxiety of Filipinos, especially in the context of the COVID-19 pandemic and the rise of Axie Infinity.

Mental well-being has been defined as the state of an individual that encourages them to fulfill their potential, successfully cope with the daily stressors of life, work productively, and contribute to their community (World Health Organization, 2004). It is a sustained condition that allows the individual or population to develop and thrive (Ruggeri et al., 2020). High levels of mental well-being are associated with positive outcomes, such as prosocial behavior, effective learning, good health, and lower stress, anxiety, and depression symptoms (Arslan & Coşkun, 2020; Carver et al., 2020; Telles et al., 2018; Yildirim & Solmaz, 2020). Numerous studies have shown that the pandemic has resulted in a negative impact on people's mental well-being in several countries, including the Philippines (Cho et al., 2021; Tee et al., 2020; Mazza et al., 2020; J. H. Kim et al., 2021). For the benefit of the public, it is vital to further investigate the mental well-being of Filipinos.

With that, we seek to understand the relationship between financial anxiety and mental well-being through the lens of the locus-of-hope (LOH) model, an extension of Snyder's hope theory. From the hope theory's perspective, a hopeful individual has the strength to find alternative solutions to a difficult problem and to try them regardless of circumstances (Snyder et al., 2002, as cited in Satici et al., 2020). Thus, hope may serve as a protective factor in mental well-being concerning the difficult conditions brought about by the COVID-19 pandemic (Satici et al., 2020). The LOH

model proposes that both internal and external agents contribute to goal-directed thoughts (Bernardo, 2010). The internal LOH refers to the individual as the agent of goal-directed thoughts, whereas the external LOH refers to others or external forces as the agent of goal-directed thoughts. The external LOH comprises three subdimensions: family, peers, and spiritual beings. Extensive research has shown positive associations between internal LOH and well-being as well as positive effects of internal LOH on reducing symptoms of anxiety, depression, nonsuicidal self-injury, and other mental distress (Singh et al., 2012; Visser et al., 2013; Jiang et al., 2018; Jiang et al., 2020). Much of the existing literature points to positive associations with different aspects of well-being, such as life satisfaction and coping (Bernardo & Estrellado, 2017; Bernardo et al., 2018a; Munoz et al., 2019). Moreover, some studies have found external LOH to moderate the effect of stress on well-being (Bernardo & Resurreccion, 2018; Datu & Mateo, 2016).

Taking these findings into account, hope may serve as a protective factor for well-being, possibly counteracting mental distress such as financial anxiety brought about by the COVID-19 pandemic. As advocates of mental health, we aim to assist Filipinos in coping with the consequences of the pandemic, specifically, the effect of financial anxiety on mental well-being. The current study may bring implications on the need for developing better coping mechanisms in a pandemic and economic crisis. The study benefits current and potential Axie Infinity Players, allowing them to acknowledge the experience of financial anxiety along with its effect on their mental well-being. Additionally, the study provides further implications of the role of LOH dimensions in moderating the relationship between financial anxiety and mental well-being.

This study aims to determine the moderating role of locus-of-hope dimensions on the relationship between financial anxiety and mental well-being. With that, we aim to prove the following hypotheses: (1) Financial anxiety is significantly related to the mental well-being of Filipino Axie Infinity players; (2) Financial anxiety will negatively predict the mental well-being of Filipino Axie Infinity players; (3) Locus-of-hope dimensions will moderate the negative relationship between financial anxiety and mental well-being among Filipino Axie Infinity players.

II. LITERATURE REVIEW

The rising growth of cryptocurrency in the country is linked to the demand for additional income. Job instability due to the pandemic was accompanied by significant stress and financial anxiety (Basyouni & El Keshky, 2021; Vieira et al., 2021). Financial anxiety has been associated with adverse mental health outcomes such as general anxiety, poor optimism, self-esteem, and self-control in studies on young adults (Hashmi et al., 2021; Tran et al., 2018). Accordingly, hope may serve as a protective factor for well-being. Current research on hope has been significantly growing, with implications for reducing the psychological impacts of the pandemic, such as distress and loneliness, and for intervention and coping (Braun-Lewensohn et al., 2021;

Bareket-Bojmel et al., 2021; Garcia & Sison, 2012; Laslo-Roth et al., 2021; Zhong et al., 2021). Previously, hope has been described with an individualistic assumption; however, studies suggest a need to understand hope in a collectivistic context (Du & King, 2013; Garcia & Sison, 2012). With the goal of determining the role of locus-of-hope dimensions in moderating the negative relationship between financial anxiety and mental well-being, this chapter discusses the rise of Axie Infinity, financial anxiety, mental well-being, and locus-of-hope.

A. *The Rise of Axie Infinity*

Numerous success stories lead to the popularity of Axie Infinity. The online game enables its players to acquire cryptocurrencies by controlling Axies, which are colorful blob-like characters that can be battled, bred, collected, or used to earn other virtual goods (De Jesus et al., 2022). These virtual goods can then be traded for cryptocurrency, which can be converted into actual money (Scholten et al., 2019). Axie Infinity served as an alternative for additional income for many Filipinos, becoming the most traded Non-Fungible Token (NFT) collection (De Jesus et al., 2022; Solonitsyna, 2021). The study of De Jesus et al. (2022) explored the lived experiences of Filipino Axie Infinity players, and they discovered that playing Axie Infinity is not easy since players can encounter difficulties while playing the game such as increased stress and frustration, and lack of sleep and self-time. Hence, Axie Infinity players need a strong support system to overcome these adversities. Although it has become one of the primary sources of income for its players, the study also found that it has a negative impact on their mental health since it adds tension and pressure to their lives, particularly for students (De Jesus et al., 2022). Moreover, it was discovered that most Axie Infinity players are students, and they discovered the game through social media, family, and friends (De Jesus et al., 2022). Despite its capacity to help struggling Filipinos during the pandemic, the unregulated nature of NFT play-to-earn games places players at risk of rapid devaluation of their assets as the market determines the worth of cryptocurrency (Woebeking, 2021). In fact, since May of 2021, Smooth Love Potion (SLP), the in-game currency that players exchange for cash, has decreased in value (Willing, 2023). On the other hand, Oksanen et al. (2022) found that crypto traders possess high psychological distress, perceived stress, and loneliness. Players admit there is financial instability in a volatile market; thus, it resulted in high trust issues in terms of price manipulation, privacy and security, and its design and usability (Francisco et al., 2021). The study of Delfabbro et al. (2021) discussed the illusion of control, social learning and reinforcement, fear of missing out, and anticipated regret as risk factors in crypto trading. Substantial literature also discusses its similarities with gambling (De Jesus et al., 2022; Delfabbro et al., 2021; Oksanen et al., 2022, Scholten et al., 2019). Even though this integrated cryptocurrency market in online gaming has grown in popularity in the Philippines, it remains an enigmatic venture due to a lack of research and public understanding of its risks and benefits. Regardless, Axie Infinity has paved the way for Filipinos to discover a new source of income (Francisco et al., 2022).

B. *Financial Anxiety and Mental Well-Being*

The COVID-19 pandemic has prompted research into various constructs that impact mental well-being, including financial anxiety. Studies show that job instability due to the pandemic is linked to higher levels of financial anxiety (Basyouni & El Keshky, 2021; Vieira et al., 2021). Financial anxiety is associated with an inability to engage in desirable financial conduct due to anxious feelings (Lusardi & Tufano, 2015). From the clinical perspective, financial anxiety is described as persistent and excessive worry about one's future financial situation that impairs the ability to carry out daily functioning (Archuleta et al., 2013; Summers & Gutierrez, 2018; Shapiro & Burchell, 2012). Leading causes of financial anxiety are money, work, and the economy (Pijoh et al. 2020, Grable et al., 2015). High subjective financial knowledge and being employed were also found to be associated with higher levels of financial anxiety, while high financial self-concept, being male, and interdependence were associated with lower levels of financial anxiety (Potter et al., 2020). Berrill et al. (2020) add that self-employed workers suffer more severe negative consequences for their well-being in financial distress situations. An annual survey conducted by the APA (2015) indicates that financial concerns, the top stressor of the survey since 2007, significantly impact American citizens' well-being and even relationships. Several existing literature established a negative correlation between financial anxiety and mental well-being (APA, 2015; Greene et al., 2016; Hashmi et al., 2021; Y. K. Kim et al., 2019; Tran et al., 2018). Greene et al. (2016) found that financial anxiety significantly predicted the mental health of middle-aged and older adults. For university students, these results are congruent with evidence from a study by Arora and Kaur (2017) that investigated the predictors of the mental health of student loan beneficiaries. A study by Hashmi et al. (2021) on young adults also found financial anxiety to be associated with poor optimism, self-esteem, and self-control.

Furthermore, other adverse mental health outcomes (i.e., general anxiety) are associated with high levels of financial anxiety when students have low levels of perceived family support (Tran et al., 2018). On the other hand, Y. K. Kim et al. (2019) found that financial anxiety is positively associated with financial stress and negatively associated with financial self-efficacy. Financial anxiety and financial self-efficacy also mediated the relationship between financial stress and depression (Y. K. Kim et al., 2019).

C. *Locus-of-Hope and Mental Well-Being*

Locus-of-hope (LOH) refers to whether the components of hope involve internal or external agents and internally or externally generated pathways (Bernardo, 2010). There are four dimensions of LOH, namely: internal LOH, which involves an individual's agency and pathways for his goals; external-family LOH, which involves his family's agency and pathways for his goals; external-peers LOH, which involves his peers' agency and pathways for his goals; and external-spiritual LOH, which involves his God's agency and pathways for his goals. The study of Dargan et al. (2021) found no significant gender differences in internal and external LOH use. Moreover, other studies have found that internal and external LOH relate to other psychological

variables in distinct ways (Bernardo, 2010; Du & King, 2013). Extensive research has shown positive associations between internal LOH and mental well-being, as well as positive effects of internal LOH on reducing symptoms of anxiety, depression, nonsuicidal self-injury, and other mental distress (Singh et al., 2012; Zhang et al. 2021; Visser et al., 2013; Jiang et al., 2018; Jiang et al., 2020). Several studies have also shown positive associations with different aspects of mental well-being, such as life satisfaction and coping (Bernardo & Estrellado, 2017; Bernardo et al., 2018a; Munoz et al., 2019). On the other hand, studies on external LOH are still growing in literature, especially in collectivist cultures like the Philippines. Evidence on the positive correlates of external LOH with various indicators of mental well-being was shown in adolescents (Bernardo, 2015), young adults (Bernardo, 2010; Bernardo et al., 2017; Bernardo et al., 2018b; Datu & Mateo, 2016; Du et al., 2015; Du & King, 2013), and adult community samples (Bernardo & Estrellado, 2014). Further studies have also found external LOH to be associated with more adaptive forms of collectivist coping with Chinese samples (Bernardo et al., 2017; Wang et al., 2017). In most of these studies, internal LOH and external-family LOH were the most consistent predictors of mental well-being. Moreover, external LOH demonstrated buffering effects of stress on well-being (Bernardo & Resurreccion, 2018; Datu & Mateo, 2016). In particular, the study of Bernardo and Resurreccion (2018) found that external-family LOH moderated the negative impact of financial stress on life satisfaction among students. External-peer LOH and external-spiritual LOH were considered less consistent predictors of well-being (Bernardo & Resurreccion, 2018). In a study by Bernardo et al. (2017), external-spiritual LOH was negatively associated with adaptive behaviors and outcomes. External-spiritual LOH was also not significantly predicted by self-esteem, collectivist relational tendencies, and other variables (Dargan et al., 2021). However, the study of Datu and Mateo (2016) found external-peer LOH to moderate the negative relationship between discrimination and well-being of students.

D. Synthesis of Literature Review

Axie Infinity gained its popularity as a play-to-earn game, posing as an alternative source of income. A study on the lived experiences of Filipino Axie Infinity players found that playing the game had a negative impact on their mental health, as the game had the same risks as the crypto market (De Jesus et al., 2022). Hence, social support was recommended for players to withstand its challenges (De Jesus et al., 2022). This leads us to the assumption of the moderating role of the locus-of-hope dimensions on the financial anxiety and mental well-being of Filipino Axie Infinity players. Despite present literature on financial anxiety being scarce, its negative relationship with mental well-being has been established in many studies (APA, 2015; Greene et al., 2016; Hashmi et al., 2021; Y. K. Kim et al., 2019; Tran et al., 2018). Moreover, given the four dimensions of LOH, namely: internal LOH, external-family LOH, external-peers LOH, and external-spiritual LOH which involves the individual himself, his family, peers, or higher spiritual beings as the agent for his goal-directed thoughts, we hypothesize that at least one of these LOH dimensions

would moderate the negative relationship between financial anxiety and mental well-being among Filipino Axie Infinity players.

III. RESEARCH QUESTIONS AND HYPOTHESIS

This study aims to determine the moderating role of locus-of-hope dimensions on the relationship between financial anxiety on mental well-being. The following problems will be investigated:

- Is financial anxiety significantly related to mental well-being?
- Does financial anxiety negatively predict the mental well-being of Filipino Axie Infinity players?
- Do the locus-of-hope dimensions moderate the relationship between financial anxiety and the mental well-being of Filipino Axie Infinity players?

In line with the statement of the problem of the study, the following hypotheses were formulated and will be tested at a .05 level of significance.

- Financial anxiety is significantly related to the mental well-being of Filipino Axie Infinity players.
- Financial anxiety will negatively predict the mental well-being of Filipino Axie Infinity players.
- Locus-of-hope dimensions will moderate the negative relationship between financial anxiety and mental well-being among Filipino Axie Infinity players.

Theoretical and Conceptual Framework

Snyder's hope theory defines hope as the belief that the pathways to attain one's goals can be found, as well as the motivation to try out those different pathways (Snyder et al., 2002, as cited in Satici et al., 2020). Criticisms on the theory include not explicitly articulating whether goal-directed thoughts are self-determined or may involve external agents (Bernardo, 2010). As it was adapted from individualistic cultures, the theory did not consider the possible roles of significant others or external forces. Thus, Bernardo (2010) extended the hope theory by adding the locus-of-hope dimensions, which distinguishes between internal and external agents of goal-directed thoughts. The LOH model includes four dimensions: internal, external-family, external-peers, and external-spiritual (Bernardo, 2010). Internal LOH refers to the individual as the agent of hope. External-family LOH refers to hope placed on family. External-peers LOH refers to hope placed on friends, and external-spiritual LOH refers to hope placed on God or a higher spiritual being. The three external subdimensions were derived from Philippine studies that acknowledge the importance of one's family, peers in the community, and religion in attaining one's goals (Bernardo, 2010). Bernardo (2010; 2015) proposed that individuals rely on internal and external agents to achieve their goals. He performed a confirmatory factor analysis on his developed LOH scale, adapted from the revised version of Snyder's Dispositional Hope Scale and the external LOH dimensions (Bernardo, 2010). The results of the study validate the extension of hope theory; the four proposed LOH dimensions measure unique factors of hope (Bernardo, 2010). Moreover, the study proved that internal LOH is associated with individualism and external LOH with collectivism (Bernardo,

2010). Several studies support the addition of LOH dimensions in understanding hope (Bernardo & Resurreccion, 2018; Bernardo & Mendoza, 2021; Dargan et al., 2021). Through this framework, we aim to determine the moderating role of the LOH dimensions on the relationship between financial anxiety and mental well-being.

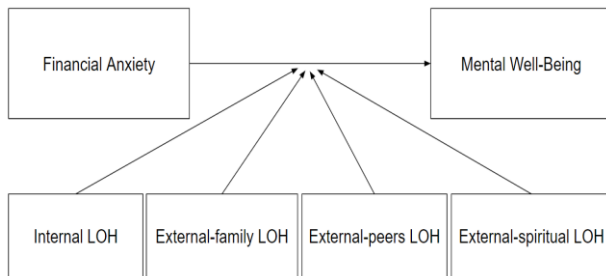


Fig 1:- The Conceptual Framework of the Moderating Role of LOH Dimensions on Financial Anxiety and Mental Well-Being

Figure 1 illustrates the conceptual framework of the current study, wherein the LOH dimensions moderate the relationship between financial anxiety and mental well-being. The LOH dimensions may serve as a buffer on the relationship between financial anxiety and mental well-being. Hence, the effect of financial anxiety may have a weaker effect on mental well-being, especially if an individual believes that they can overcome any difficulties by themselves (internal LOH), believes that their family or friends will be able to support them in times of financial crises (external-family LOH and external-peers LOH, respectively), or believes that a higher spiritual being will aid them in their financial struggles (external-spiritual LOH). As the three external subdimensions were derived from Philippine studies by Bernardo (2010), we assume these subdimensions may affect the relationship between financial anxiety and mental well-being among Filipinos. However, the specific LOH dimensions that moderate the relationship are yet to be identified. With this, our current study aims to determine the moderating effect of these subdimensions.

IV. METHOD

A. Design

A cross-sectional explanatory design by Johnson (2001) was used in this study to test the theoretical model of locus-of-hope (LOH) during a single time period. Financial anxiety, mental well-being, and LOH dimensions were measured across Filipino Axie Infinity players at a given point in time. Using the LOH model, the moderating role of the LOH dimensions on the relationship between financial anxiety and mental well-being was explained. This explores the applications of the LOH model and hope theory.

B. Participants

Determined using Cochran’s formula, 384 Filipino Axie Infinity players who are currently residing in the Philippines were gathered. The mean age of the participants was 23 years (SD = 5), majority of which were male (81.8%) and students (59.9%). Further details on the participants’ demographic profile are presented in Table 1. Purposive sampling was used

in selecting participants. This nonprobability sampling where participants are chosen based on qualities they possess, increases the rigor and accuracy of data and outcomes (Campbell et al., 2020; Etikan, 2016). The participants were selected based on the following criteria: (1) Axie Infinity player (2) At least of legal age (3) Filipino citizen. There were no delimitations on gender or local geographical location. Only those who met the criteria were included to participate in this study. Participants who met the criteria but have not played Axie Infinity in the past two (2) months, are diagnosed with mental illness, or do not subscribe to a religion were excluded from the study. These exclusion criteria are applied to ensure that they are active Axie Infinity players and to avoid confounding variables in measuring mental well-being and external spiritual LOH, respectively.

Table 1 Demographic profile of participants

	Mean	SD
Age	23	5
Gender	n	%
Male	314	81.8%
Female	67	17.4%
Non-binary	1	0.3%
Prefer not to say	2	0.5%
Occupation	n	%
Student	230	59.9%
Part-time Employee	19	4.9%
Full-time Employee	63	16.4%
Self-Employed	48	12.5%
Unemployed	24	6.3%
Religion	n	%
Roman Catholic	283	73.7%
Christian	77	20.0%
Muslim	1	0.3%
Protestant	5	1.3%
Other	18	4.7%
Time Spent Playing	n	%
Less than an hour	42	10.9%
1-2 hours	148	38.6%
3-5 hours	134	34.9%

More than 6 hours	60	15.6%
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C. Measures

Financial Anxiety Scale (FAS). The Financial Anxiety Scale was developed by Shapiro and Burchell (2012) to measure an individual's anxious disposition when it comes to making decisions concerning their personal finances. Sample statements found in the scale are "I find opening my bank statements unpleasant." and "Thinking about my personal finances can make me feel guilty." It has 10 items that utilize a 4-point Likert scale ranging from 1 (very true) and 4 (very untrue). For uniformity and ease of interpretation, scores on the FAS were reversely scored and computed through cumulative scoring. After reverse scoring, a high FAS score suggests a high level of financial anxiety. The scale has good internal consistency with a Cronbach's alpha of .85 and construct validity supported by the scale's correlations with Financial Emotional Stroop Test and Dot-Probe Paradigm (Shapiro & Burchell, 2012).

➤ *Warwick-Edinburgh Mental Well-being Scale (WEMWBS)*.

The Warwick-Edinburgh Mental Well-being Scale was developed by Tennant et al. (2007) to measure the mental well-being of an individual, evaluating both subjective well-being and psychological functioning. "I've been feeling useful." and "I've been feeling relaxed." are statements found in this scale. It has 14 items that utilize a 5-point Likert scale ranging from 1 (none of the time) to 5 (all of the time). Scores on the WEMWBS were obtained through cumulative scoring. A high score suggests a high level of mental well-being. Furthermore, cut-off scores on the WEMWBS were established for Filipino Axie Infinity players by adding or subtracting one standard deviation from the mean, yielding 36.1 and 59.7. With that, 36 and 60 were established as cut points for low and high scores of mental well-being. Scores that fall between 37 - 59 do not fall into high or low categories. The scale has good reliability, with a Cronbach's alpha of .89 and an intra-class correlation coefficient of .83, and construct validity evidenced by confirmatory factor analysis (Tennant et al., 2007).

➤ *State Locus-of-Hope Scale-Short Form (SLOHSSF)*.

The State Locus-of-Hope Scale-Short Form was developed by Bernardo and Mendoza (2021). The scale was adapted from the Locus-of-Hope Scale that was designed to measure dispositional hope, similar to a trait-like factor. In the adapted SLOHSSF, hope is measured as a temporal state affected by ongoing events and goals such as the COVID-19 pandemic. The scale evaluates the four locus-of-hope dimensions: internal (e.g. "I can think of many ways for me to get out of a problem."), external-family (e.g. "My family has lots of ways of helping me attain my goals."), external-peer (e.g. "I have been able to meet my goals because of my friends' help"), and external-spiritual (e.g. "There are many ways around a problem, if one trusts in God.") (Bernardo & Mendoza, 2021). It has 16 items utilizing a 4-point Likert-type scale from 1 (strongly disagree) to 4 (strongly agree). To obtain scores on the SLOHSSF, the average scores for each of the four locus-of-hope dimensions were computed. The

scale has good internal consistency with a Cronbach's alpha of .89 and the subscales' ranging from .78 to .95. Evidence also supports the structural, convergent, and discriminant validity of the instrument (Bernardo & Mendoza, 2021).

D. Procedure

Before data collection, ethical approval from the Philippine Normal University (PNU) Research Ethics Committee was sought. The measures were translated into an online questionnaire using Google Forms. The online questionnaire contained informed consent, demographic profile questions, measures, and a debriefing section. The informed consent includes a brief project description, procedure, risks, benefits, and confidentiality of the survey. Only if the participant agrees and consents to participate in the study can they proceed to answer the demographic profile questions and measures. The online questionnaire approximately takes 15 minutes to complete. If participants did not wish to proceed, they were free to withdraw at any moment. Demographic profile questions include age, gender, occupation, and religion. The online questionnaire was disseminated to its target participants through email and social media platforms such Facebook, Twitter, Instagram. During data collection, participants were blinded from the variables of the study to eliminate bias. Items left unanswered did not allow the participants to submit the questionnaire. We provided email addresses for participants to contact for any inquiries or problems encountered. Participants were allowed to complete the survey only once and received a confirmation email after completing the survey. After data collection, we proceeded to data analysis.

E. Ethical Considerations

To assess the ethical considerations of this study, ethical approval was sought from PNU Research Ethics Committee prior to data collection. Permission to use the scales were obtained from their respective developers. Participation was completely voluntary, and the data collected remained confidential. The participants were asked for their informed consent prior to test administration, and they were free to opt-out of the study at any time. No compensation was given for their participation. Potential risks associated with this study were low. A debriefing section that reveals the purpose of the study and crisis hotline numbers was provided at the end of the online questionnaire. We have no conflicts of interest to disclose.

F. Data Analysis

Descriptive analysis of the demographic data was performed. All results were subjected to a .05 level of significance. Analysis methods were accomplished using IBM SPSS Statistics v26 and Microsoft Excel v2108 with the Analysis ToolPak add-on. Bivariate regression analysis was performed between financial anxiety and mental well-being to determine the direction of their relationship. In addition, it decides if the participant's level of financial anxiety is significantly related to the mental well-being score of the participants. Then, moderated regression analysis was performed to obtain the moderating role of the LOH dimensions. First, gathered data were centered to reduce collinearity; then, four interaction variables namely, FA x

Internal LOH, FA x External-Family LOH, FA x External-Peer LOH, and FA x External-Spiritual LOH were obtained using the centered scores. The moderated regression analysis was performed with the interaction variables, financial anxiety, and mental well-being. The role of the LOH dimensions on the relationship between financial anxiety and mental well-being was indicated by the association of the interaction variables. Its moderating role may be classified as enhancing, buffering, or antagonistic (Bernardo & Resurreccion, 2018).

V. RESULTS

This section contains the results of the statistical analysis of the gathered data. Table 1 presents the descriptive statistics and correlation of financial anxiety, mental well-being, and the locus-of-hope (LOH) dimensions. The moderated regression analysis is presented in Table 2. A significance level of .05 was used for all statistical tests. All assumption checks for the data were successful.

Table 1 Descriptive statistics and correlation coefficients of financial anxiety, mental well-being, and locus-of-hope dimensions

	<i>M</i>	<i>SD</i>	<i>r</i>	<i>r</i> ²
MWB	47.9	11.8	-	-
FA	23.5	6.38	-.29***	.08
Internal LOH	3.15	2.33	.62***	.39
External Family LOH	3.16	2.81	.38***	.14
External Peers LOH	2.98	2.94	.40***	.16
External Spiritual LOH	3.21	3.32	.41***	.17

****p* < .001

As shown in Table 2, the mean score of the participants for mental well-being was 47.9 with a standard deviation of 11.8. For financial anxiety, the mean score is 23.5 with a standard deviation of 6.38. In addition, the mean scores for the locus-of-hope dimensions ranged from 2.98 to 3.21. Specifically, the mean score for internal LOH was 3.15 with a standard deviation of 2.33. The mean scores for external-family, external-peers, and external-spiritual LOH were 3.16, 2.98, and 3.21, respectively, with standard deviations ranging from 2.81, 2.94, and 3.32, respectively. Financial anxiety was also found to have a negative correlation with mental well-being (*r* = -.29, *r*² = .08, *p* < .001). Internal LOH has a positive correlation with mental well-being and yielded the highest correlation coefficient (*r* = .62, *r*² = .39, *p* < .001). External-family (*r* = .38, *r*² = .14, *p* < .001), external-peers (*r* = .40, *r*² = .16, *p* < .001), and external-spiritual LOH (*r* = .41, *r*² = .17, *p* < .001) were also positively correlated with mental well-being.

Table 2 Moderated regression of financial anxiety, locus-of-hope dimensions, and their interaction variables with mental well-being

	<i>B</i>	<i>t</i>	<i>SE</i>	<i>95% CI</i>	
				<i>LL</i>	<i>UL</i>
MWB (Constant)	47.9	100	.478	46.9	48.8
FA	-.233**	-3.06	.076	-.383	-.083
FA x Internal LOH	-.023	-.142	.040	-.341	.295
FA x External-Family LOH	.102	.687	.037	-.189	.393
FA x External-Peer LOH	-.087	-.665	.033	-.343	.170
FA x External-Spiritual LOH	-.020	-.163	.030	-.257	.217

Note. *B* = unstandardized regression coefficients, *SE* = standard error, *CI* = confidence interval, *LL* = lower limit, *UL* = upper limit
***p* < .01

As shown in Table 3, results found that financial anxiety negatively predicted mental well-being (*B* = -0.23, *p* = .002). Moreover, all of the interaction variables (i.e. FA x Internal LOH, FA x External-Family LOH, FA x External-Peer LOH, and FA x External-Spiritual LOH) failed to meet the designated significance level of *p* < .05. Therefore, they are non-significant moderators of mental well-being.

VI. DISCUSSION

The results of our study indicate that financial anxiety and mental well-being have a negative relationship. Therefore, this proves our hypotheses that financial anxiety is significantly related to mental well-being and that financial anxiety will negatively predict the mental well-being of Filipino Axie Infinity players. Our findings support previous literature and remain consistent across different populations (Greene et al., 2016; Hashmi et al., 2021; Y. K. Kim et al., 2019; Rajani et al., 2016; Tran et al., 2018). Their relationship suggests that Filipino Axie Infinity players who experience higher levels of financial anxiety have lower levels of mental well-being. Inversely, lower levels of financial anxiety indicate that Filipino Axie Infinity players have higher levels of mental well-being.

Additionally, all LOH dimensions were found to be positively related to mental well-being, namely internal LOH, external-family LOH, external-peers LOH, and external-spiritual LOH dimensions. This finding supports evidence on the LOH model, specifically the positive associations of both internal and external LOH with well-being (Bernardo & Resurreccion, 2018; Bernardo et al., 2018a; Bernardo et al., 2018b; Datu & Mateo, 2016). These findings suggest that

high levels of internal and external LOH may also indicate high levels of mental well-being.

On the other hand, we were not able to prove our hypothesis that locus-of-hope (LOH) will moderate the negative relationship between financial anxiety and mental well-being among Filipino Axie Infinity players. Our findings indicate that the interaction of financial anxiety and LOH dimensions did not significantly affect the participants' mental well-being. Therefore, the LOH dimensions do not show a moderating effect and cannot be classified whether it had an enhancing, buffering, or antagonistic role. Our findings suggest that at that time, the participants' hope-related beliefs were insufficient to cope with financial anxiety by themselves (internal LOH), seeking assistance from their friends (external-peers LOH), family (external-family LOH), or God (external-spiritual LOH). Our non-significant findings are inconsistent with the study of Bernardo and Resurreccion (2018), wherein at least one of the LOH dimensions, namely external-family LOH, buffered the relationship between financial stress and life satisfaction among Filipino university students. Even internal LOH, which showed the strongest association with mental well-being, had no effect on the relationship. This may be associated with low levels of self-esteem; as found in the study by Du et al. (2015), self-esteem mediated the effect of internal LOH on life satisfaction. Thus, higher levels of self-esteem would result in higher internal LOH or more hopeful beliefs on their own internal capabilities. Meanwhile, the study of Du and King (2013) also found that hope-related beliefs were influenced by whether they viewed themselves as autonomous (independent self-construals) or inclusive of others (interdependent self-construals). The findings suggest that Filipino Axie Infinity players' differences and inadequacies in self-construals may have affected their hope placed in themselves or others, which determines their internal and external LOH. With regard to external LOH dimensions, our findings may indicate that at that time the complex relationships of Filipino Axie Infinity players with their families or peers may have influenced their hope-related beliefs associated with them. Culannay et al. (2022) found that players can experience social pressure from their family and friends who introduced them to the game. Axie Infinity players may hold differing views on whether the game is a profitable investment, enjoyable, or if the costs outweigh the benefits, which could result in conflict (Culannay et al., 2022; De Jesus et al., 2022; Delic & Delfabbro, 2022). Their views and attitudes toward the game may differ, which may influence the hope-related beliefs they hold about their family or friends. Regarding the external-spiritual LOH dimension, we assume that Filipino Axie Infinity players also rely on other faculties apart from hope placed on higher spiritual beings. The findings further contradict the assumption that external-spiritual LOH would have a greater positive impact in a religiously oriented country like the Philippines (Du & King, 2013). Thus, further research is required to determine the factors or contexts that affect hope placed on higher spiritual beings. The findings are also inconsistent with other studies that support the role of the LOH model in collectivistic cultures (Bernardo et al, 2017;

Tee et al., 2022; Wang et al., 2017). Thus, our findings may be unique to Filipino Axie Infinity players.

Other possible explanations may be that Filipino Axie Infinity players already possess adequate financial literacy, good resilience, and other coping strategies to help them deal with their financial anxiety. Individuals with adequate financial literacy are able to process economic information and make informed decisions regarding their finances (Lusardi & Mitchell, 2013). Financial literacy has been defined as the combination of awareness, knowledge, skills, attitude and behavior necessary to make financially sound decisions and achieve financial well-being (Organisation for Economic Co-operation and Development, 2017). With regard to previous literature, Hasler et al. (2021) found that financial anxiety is highly linked to low levels of financial literacy. In another study by Pijoh et al. (2020), they found that financial literacy had a mediating effect on the relationship between financial anxiety and financial well-being. Financial literacy has been shown to influence financial anxiety and to have an indirect positive effect on the participants' financial well-being, with higher levels of financial literacy indicating higher levels of financial well-being (Pijoh et al., 2020). Delic and Delfabbro (2022) supports the previous findings, as they found that many Axie Infinity players exhibit in-depth market knowledge of the game and a level of understanding of its financial risks and possible benefits. In a sense, Filipino Axie Infinity players may also exhibit certain levels of financial literacy by engaging in and playing the play-to-earn game. This indicates that financially literate Filipino Axie Infinity players are aware of both the financial benefits and risks of market value fluctuations, possess favorable attitudes about the game which builds positivity around it, and have the ability to make financially sound decisions that will help them deal with their financial anxiety (Sangeeta et al., 2022). Nonetheless, we did not investigate financial literacy and its characteristics among Filipino Axie Infinity players.

Furthermore, possessing good resilience indicates that an individual shows flexibility, vigor, and the ability to adapt to disruptions (Nicomedes et al., 2020). Despite difficulties, Filipino Axie Infinity players continue to play the game (Delic & Delfabbro, 2022; De Jesus et al, 2022). With this, we assume that Filipino Axie Infinity players also exhibit good resilience that possibly affected the relationship between financial anxiety and mental well-being. Filipinos are known for their natural resilience and ability to thrive when faced with adversities and difficult circumstances (Oducado et al., 2021). Evidence of resilience during the pandemic was also found in several studies (Nicomedes et al., 2020; Oducado et al., 2021; Satici et al., 2020). Resilience was found to serve as a buffer against negative mental states such as stress and fear among Filipino graduate students during the pandemic (Oducado et al., 2021). Nicomedes et al. (2020) also expounds that resilience is a product of successful coping. Thus, apart from resilience, we also assume that Filipino Axie Infinity players utilize adaptive coping strategies. Cahapay and Rotas (2022) found that Filipino students use a wide range of adaptive coping strategies. In their prior study, they described some coping

strategies their participants utilized during the pandemic, including diverting attention, looking for a good space, practicing time management, taking on additional jobs, regulating oneself, and seeking peer support, among many others (Rotas & Cahapay, 2021). These studies support the idea that Filipinos exhibit resilience in the face of adversity and can effectively cope with change. Thus, we assume that Filipino Axie Infinity players may also possess good resilience and coping strategies in dealing with difficulties associated with the game, one of which is financial anxiety and its effect on their mental well-being.

In relation to their coping, Filipino Axie Infinity players may utilize unique coping strategies that help them deal with their financial anxiety. The study of De Jesus et al. (2022) suggests a strong social support for Filipino Axie Infinity players to overcome the challenges of the game. Even though the hope-related beliefs associated with their family and friends were insufficient to buffer financial anxiety, other sources of social support may have been sought or acquired. We assume that Filipino Axie Infinity players may be able to cope or find social support through social media. Axie Infinity gained its popularity through social media, where the majority of its players discovered the game. (De Jesus et al., 2022; Culannay et al., 2022; Delic & Delfabbro, 2022). Social media may provide a safe space for individuals to express their ideas and opinions with others (Kshetri, 2017, as cited in Culannay et al., 2022). Through social media, players can form or join gaming communities, stream their own games or watch other streamers, play cooperatively or competitively with other players, chat, make calls, and post questions or jokes about the game. It has provided Axie Infinity players with a platform to connect, socialize, and make friends online (Delic & Delfabbro, 2022). However, possible experiences of social pressure should not be ignored (Culannay et al., 2022). Thus, social relationships or even the role of social media can be taken into consideration for further investigation as external factors.

In summary, financial literacy, resilience, and coping strategies may have served as buffers in minimizing the detrimental effect of financial anxiety on the participants' mental well-being. Financial literacy may have a role in the relationship between financial anxiety and mental well-being. Resilience and coping strategies among Filipinos to overcome changes and difficulties may also be apparent among Axie Infinity players. Lastly, Filipino Axie Infinity players may have acquired social support from social media, where the game was popularized.

The extended LOH model also poses limitations and other theoretical possibilities that were not investigated in previous studies, including the external events that would moderate the efficacy of each LOH dimension and the extent of its efficacy in influencing an individual's well-being (Bernardo et al., 2022; Bernardo & Mendoza, 2021). The unique and challenging experiences of Filipino Axie Infinity players may fall within the limitations of the model, but their state LOH is also subject to change. Our findings also point to theoretical possibilities that were not yet investigated. It is possible that their hope-related beliefs in an LOH dimension

were insufficient to moderate the negative relationship between financial anxiety and mental well-being because their other thoughts or beliefs prevented them from being more hopeful. They may have complex relationships with their family and peers, which may have affected their hope-related beliefs associated with them. Furthermore, a spirituality or set of spiritual beliefs that differs from that of their family may also affect the significance of these external LOH dimensions. However, these speculations were not investigated in our study and highlights gaps for future research.

Our study is not free without limitations. One of the limitations of our study was that how the game directly affects their mental well-being was not measured. The individual differences among players, specifically the frequency of positive and negative gaming experiences, financial gains and losses from the game, the length of time spent playing Axie Infinity, the variety of motivations for playing the game, financial constructs, and the differences in risk-taking behavioral tendencies were other constraints not sought in the study. Moreover, the developers launched an updated version of the game, which changed its game mechanics and overall gameplay features, during the duration of the study. Lastly, the online administration of the survey provided participants with limited opportunities to ask questions and was highly susceptible to rating errors. Due to the lack of validity questions, participants may also not have been truthful in their responses on the self-report measure.

VII. CONCLUSION

In conclusion, the results of the study show that financial anxiety is significantly related to mental well-being, with a negative relationship. However, the locus-of-hope (LOH) dimensions could not moderate the negative relationship between financial anxiety and mental well-being among Filipino Axie Infinity players. Possibly, other factors such as financial literacy, resilience, and other coping strategies may have had an influence on the financial anxiety and mental well-being of Filipino Axie Infinity players. Thus, further research can be conducted to investigate other moderators of the relationship between financial anxiety and mental well-being, and to assist Filipinos in coping with the consequences of the pandemic or economic crisis. Future studies can also explore other applications of the LOH model.

RECOMMENDATIONS

For future research, a mixed-methods design with qualitative interviews or focus group discussions for an in-depth study of game experiences is recommended. Previous players of play-to-earn games who quit the game due to a financial crisis may also be investigated. Research on the impact of age, employment status, and other demographic characteristics on financial anxiety are also recommended. Other variables, such as financial literacy, resilience, and coping strategies that may possibly moderate the negative relationship between financial anxiety and mental well-being, may also be explored. Other emerging or popular play-to-

earn games can also be considered. For further investigations of the LOH model, samples from local or other cultural contexts are recommended.

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