

INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY: APPLIED BUSINESS AND EDUCATION RESEARCH

2021, Vol. 2, No. 4, 349 – 363

<http://dx.doi.org/10.11594/ijmaber.02.04.08>

Research Article

Social Contagion of Astrology in the Social Media amid COVID-19 Pandemic

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Article history:

Submission April 2021

Revised April 2021

Accepted April 2021

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ABSTRACT

This cross-sectional study aimed to determine the associations of the extent of Social Contagion - Conscious Behavioral Response (CBR) towards Astrology on social media among Filipino Post-Millennial university students aged 18 to 23 years old with their demographics, Stress Level (SL), and Level of Susceptibility to Barnum effect (LSB) during the COVID-19 pandemic. The online survey garnered 406 respondents. Data were analyzed using descriptive and nonparametric inferential statistics. Findings found that respondents have high SL, moderate CBR level, and high LSB. Female respondents were found to have significantly higher CBR Factor Scores compared to males ($p < 0.000$). Thus, females tend to be consumers of Astrology in social media more. Other variables tested (religion, $p = 0.128$; residence type, $p = 0.736$; age, $p = 0.339$) showed no significant statistical difference between the sample's CBR Factor Scores. A person's stress level during the COVID-19 pandemic (in terms of manageability and uncertainty) revealed a significant statistical association with their susceptibility level to Barnum effect (odds ratio 1.252686, $p = 0.002$). The more stressed a person is, the higher the consumption of Astrology-related information in social media (due to high uncertainty and less situation control, despite high management capacity score). Activities involved in the Astrology consumption through social media revealed a positive moderate significant association with their susceptibility level to the Barnum effect ($r = 0.603$, $p < 0.000$). In this pandemic, females consumed more Astrology-related information, even when information may be vague to believe that it applies to all. Overall, the higher the SL and the higher the CBR, the higher the LSB. Thus, in this COVID-19 pandemic, females are more susceptible to higher levels of Barnum Effect as they consume higher levels of Astrology-related information triggered by higher levels of stress (brought by the high level of uncertainty and low level of individual's situation control).

How to cite:

Lopez, K. R. B., Gaticales, N. P., Provido, A. V. C., Santelices, S. M. B., & Arcinas, M. M. (2021). Social Contagion of Astrology in the Social Media amid COVID-19 Pandemic. *International Journal of Multidisciplinary: Applied Business and Education Research*, 2(4), 349 – 363. doi: 10.11594/ijmaber.02.04.08

Keywords: Astrology, Barnum effect, COVID-19, Social Media, Social Contagion Effect

Introduction

Astrology, though amusing, can pose a sense of doubt with its debatable claims and statements. Despite such concerns, individuals still rely on astrology as it gives them the information and validation they desire (Glick, Gottesman, & Jolton, 1989). Astrology patrons have a high external locus of control (Glick et al., 1989) — the degree to which people believe that they, as opposed to external forces (beyond their influence), have control over the outcome of events in their lives (Rotter, 1966) — making them accept self-descriptions from external sources (Glick et al., 1989). They are likely to discern generalized personality statements as accurate reflections of themselves, disregarding whether the descriptions are ascribed to Astrology (Glick et al., 1989). Astrology patrons also tend to have a “theory-driven” approach in perceiving people, making them distort and interpret information to fit their personalities. Their external loci compel them to resist belief changes even when pieces of evidence are disconfirming (Glick et al., 1989).

Belief in Astrology persists, despite the lack of credibility, because of such and the Barnum effect. In this psychological phenomenon, people accept vague or trivial descriptions of their personality and prospects once they realize that the information is from a systematic method tailored to them (Allum, 2010). Barnum statements are constructed in a socially desirable manner, which conduces these descriptions' embracement despite being general characteristics (Dickson & Kelly, 1985). Being presented as unique to the subjects makes it relevant in their perspective (Snyder, Shenkel, & Lowery, 1977). More so, since people are recognized to be egoists. Psychological egoism is a human psychology theory that claims that all human actions are motivated by their self-interest, implying that humans are egoists (Chung, 2016). They are motivated by their interest in finding an encapsulated description of their personality, an all-encompassing aspect of personhood.

Astrology serves as escapism for many in a

time of uncertainty, such as the current COVID-19 pandemic. Even before this crisis, numerous past pandemics have made their marks on history (Roos, 2020). However, the current COVID-19 pandemic created significant negative impacts in almost all aspects of human lives. Fear about the possible course of life in the future imposes feelings of stress and anxiety on people, which emotionally drains them as these uncertainties trap them from the endless probabilities or worst-case scenarios of the future (Robinson & Smith, 2020). Pandemics significantly affect the mental state of the people, and their lives in general, on account of the uncertainties they bring. Psychological distress is prevalent during these times. This distress may involve acute stress reactions, and Post-Traumatic Stress Disorder (PTSD), which significantly heightens as an increasing number of people experiences chronic fear, illness, social isolation, economic hardship, livelihood issues, or death of a peer (Rosen et al., 2020).

Astrology serves as a coping mechanism for individuals during times of uncertainty, where anxiety and stress are endemic, and acts as a defense mechanism against doubt by providing some clarity with the expression of their self-concept (Biswas, 2020). Kim Witte's Extended Parallel Process Model predicts that fear and helplessness are the reasons for a person to bury a problem by ignoring it (Dunwoody, 2020). Isolation, fear, and stress imposed on people can lead them to seek escapism during the pandemic. Considering that maintaining physical distance is a golden rule for a healthy social life, it would not be easy to continue usual routines involving close contact. Further, reduced social contact shifted social ventures to rather home-centric activities (De Vos, 2020).

Astrology's prominence is the result of economic decline, political panic, and none adherence to organized religions. In 1930, a British tabloid published the newspaper's first astrology column during the aftermath of the stock market crash. This crisis time led to the column's popularity, making it a permanent

feature on the tabloid (Smallwood, 2019). Pandemics were also considered as times of crisis where State dilemmas, such as economic decline, arise (Smallwood, 2019). These times brought uncertainty and ambiguity since there exists a sense of perplexity on the current events and on the future in which uncertainty strongly influences (Beck, 2018).

Social media's prominence granted people a modern form of distraction that detracts them from the macabre reality, which also paved the way for Astrology to expand its subscribers by using hyper-personalized content to interest them (Namaste, 2019). People are becoming discontented with strict religious and cultural frameworks in society. They often seek hope, individuality, and pleasure, which they found in Astrology, for it served as a means of therapy and in-depth exploration of themselves without restrictions from society or religion (McKoy, 2019).

Younger generations appeal to Astrology in social media because of certain factors: (a) most platforms are free and accessible, (b) astrological memes and threads not only entertain them but also allow the easy propagation of information globally, and (c) social media allows users to subscribe to other astrologers intriguing their interests (McKoy, 2019). Despite having the quality of relationships as an essential factor in the proliferation of Astrology through Social Contagion, the contagion may vary when it comes to social media. Social media interactions occur with open access and interdependent networks, which provide the ubiquity of influence and social contagion (McFarland & Ployhart, 2015). Tiryakian (1972) also discovered that Post-Millennials' usage of social media is driven by (a) environmental factors such as political, economic, technological, cultural, and legal; and (b) personal factors such as socioeconomic class, morals, choices, age/maturity, and culture/subculture. With this, Tiryakian inferred a higher level of proliferation of astrological concepts among Post-Millennials who were able to attain higher education levels, e.g., college and university level, than those who have not yet attained or are still in high school level (Tiryakian, 1972). Overall, this increasing recognition of Astrology demonstrates social media's role in

promoting beliefs, concepts, and ideas by offering readings to influence people across the globe (McKoy, 2019).

Acknowledging the premises behind the people's belief in Astrology owing to the Barnum effect, the study infers that individual conscious behavioral responses (e.g., online sharing and spreading of astrology-related content) contribute to social contagion since the committed acts are innately influential. Given the implicit relationship of their conscious behavioral responses (CBR) to propagating the ideology, the researchers aim to dig deeper into these subjects to determine the association of the Barnum effect and Social Contagion.

The study also aimed to contribute to the low amount of Astrology literature in the Philippines as the prominence of horoscopes in the country's context urges more studies. It instigates an incoherence in studying the Filipino culture of social media use and their unique adaptation of cultures espoused from the West. Furthermore, consumption as a process alone necessitates scrutinization since media content is prone to propagating information disorganization (i.e., misinformation, disinformation, and misinformation). Conforming to how the study values information consumer behavior, it should serve as a basis regarding the relationship between Astrology and its patrons, providing a reasonable premise to measure the level of susceptibility of people to the Barnum effect.

Methods

Research design

This study employed a quantitative correlational, non-experimental research design. Using a cross-sectional self-administered online survey, the study determined the association of the Filipino Post-Millennial university students' extent of Social contagion - Conscious Behavioral Response (CBR) to Astrology on social media with their demographics, Stress Level (SL), and Level of Susceptibility to Barnum effect (LSB) during the COVID-19 pandemic.

Sampling and ethical considerations

The researchers used a purposive non-probability sampling method wherein

participants were chosen based on the following criteria: (a) Post-Millennial (between 18 to 23 years old in the year 2020), (b) Senior High School or College student, and (c) a digital astrology consumer. A total of 406 Filipino Post-Millennials took part in the online survey conducted through Google Forms from 12 November 2020 to 07 December 2020. The form asked for the participants' demographics, their SL as measured by Cohen, Kamarck, & Mermelstein's Perceived Stress Scale or PSS (1994), their CBR, and their LSB: Personal Accuracy Ratings (PAR), Interpretation Favorability Ratings (IFR), and Interpretation Exclusivity Ratings (IER).

Proper ethical decorum was also observed during the data gathering process. The respondents were informed of the criteria as stipulated in the publication materials and on the actual survey form. It was also made clear in the online survey's informed consent form section that their participation was voluntary, and that data submitted will be treated with utmost confidentiality (confirmation of consent was done by checking a confirm box before proceeding to the questionnaire's next sections). Respondents were also given the option to withdraw from the study and discontinue answering the survey anytime if they wish.

Survey questionnaire

A self-administered online survey A self-administered online survey questionnaire was used to gather the data. It consisted of closed-ended questions and divided into four sections. The first section focused on the respondents' demographics. The second part measured their stress level, which was categorized into: uncertainty (items 1-4), control (items 5-8), and management of tasks under the situation (items 9-12). Part 3 determined their CBR, divided into two sets according to phases: (a) Intake Phase, represented by items 1-5, and (b) Output Phase, represented by items 6-10. Lastly, the LSB consisted of 7 items for each domain, namely PAR, IFR, and IER. Accordingly, the items will be arranged by random order all the while domains PAR will be represented by statements {1, 4, 7, 11, 13, 16, 20}, IFR will be {2, 6, 9, 12, 14, 18, 19}, and IER will be {3, 5, 8, 10, 15, 17, 21}.

Pre-testing of the survey questionnaire was also conducted beforehand to ensure the questions' reliability, which was determined with Cronbach's Alpha Reliability Test. For the SL section of the questionnaire, its reliability measure was $\alpha = .859$ for 12 items, implying that the questions were "Good" based on Cronbach's scale. The CBR section's reliability measure was $\alpha = .899$ for ten items, which implies that the questions are also "Good" based on Cronbach's scale. Lastly, the LSB section's reliability measure was $\alpha = .939$ for 21 items, implying that the questions were "Excellent" based on Cronbach's scale.

Data analysis

The study used descriptive (frequencies, percentages, and median) and inferential statistics (Spearman's rho, Kruskal-Wallis H, Mann-Whitney U, Ordinal Logistic Regression, and Factor Analysis). The data analysis covered correlation tests that examined relationships between the variables such as CBR, Demographics, SL, and LSB. Spearman's rho was used for the correlation analyses of the relationship of SL and CBR, likewise with CBR and LSB's relationship. Kruskal-Wallis H was used to test k-independent groups' means on the comparisons of CBR and LSB according to age. Mann-Whitney U, meanwhile, was used to test the means of 2 independent groups on the comparisons of CBR and LSB in terms of sex (male vs. female), religion (Catholics vs. Non-Catholics), and place of residence (Urban vs. Rural). Lastly, the Ordinal Logistic Regression was used for the regression analysis of the effects of the determinants (SL and Demographics to CBR), the effects of CBR to LSB, and then LSB to SL.

To fully describe and understand the results of Tables 2-4, the following guides were used, respectively: (a) Level of stress — 1: Very Rarely (means Very Low); 2: Rarely (Low); 3: Sometimes (Moderate); 4: Often (High); 5: Very Often (Very High), (b) Extent of social contagion - Conscious Behavioral Response — 1: Never (means Very Low); 2: Seldom (Low); 3: Sometimes (Moderate); 4: Frequently (High); 5: Very Frequently (Very High), and (c) Level of susceptibility to Barnum effect — 1: Strongly Disagree (means Very Low); 2: Disagree (Low);

3: Agree (High); 4: Strongly Agree (Very High).

Results and Discussion

Demographics

Table 1 shows the respondents' (Post-Millennials university students) demographics. There were 283 female respondents (69.7%) than 123 male respondents (30.3%).

Most of the respondents were Catholics (82.0%) than non-Catholics (18.0%), most of the participants live in urban areas (86.7%) as opposed to rural areas (13.3%), and 68.2% of the total respondents belong to the 18-year-old age group.

Variables used in the study were carefully based on polls and studies. For variable sex, a 2005 Gallup Poll revealed that 28% of women said they believe in Astrology and the placement of stars affecting their future, compared to only 23% of men (Lyons, 2005). In terms of religion, a stark juxtaposition between those who 'never doubt the existence of God' and those who have subscribed to Astrology was observed as the percentage of people aged 18-29 years old who never doubted the existence of God (in the United States) fell from 81% to 67% in 2012, while the psychic services industry experienced growth by about 2%, and is now worth \$2 billion. On the respondents' place of residence, it is essential to note that factors such as jobs, housing availability, and way of life differ significantly between urban and rural areas. Tiryakian (1972) expounded on this by conducting a study in France, which concluded that people from urban areas, especially white-collar workers, are consuming more Astrology than those who reside in the countryside rural areas. Noting from these references, the demographics of the study's sample only strengthen previous claims regarding the characteristics of the majority who consume astrology online: that the niche is mostly popular among post-millennial female Catholics residing in urban settings (however, not denying other nuances and variations).

Table 1. Profile/Demographics of Filipino Post-Millennial University Students (n = 406)

	Demographics	Frequency	Percentage (%)
Sex	Female	283	69.7
	Male	123	30.3
Religion	Catholic	333	82.0
	Non-Catholic	73	18.0
Type of Residence	Urban	352	86.7
	Rural	54	13.3
Age	18	277	68.2
	19	81	20.0
	20	26	6.4
	21	12	3.0
	22	3	0.7
	23	7	1.7

Stress level

Table 2 shows the respondents' stress levels in the last month before answering the survey. On average, results show a high level of stress among the sample in terms of uncertainty and manageability of their lives under the status quo (median scores of 4.00) as they often experience the provided representative statements. The results also indicate that the sample sometimes experiences a moderate stress level related to their sense of control (median score of 3.00).

Echoing the study of Rosen, Glassman, & Morland (Rosen et al., 2020), the researchers' data further strengthens the claim about the prevalence of psychological distress, i.e., PTSD, during pandemics. The study expounds on the subject, underlining that experienced stress during health-related crises sometimes causes: (a) fear and worry about health, financial situation, or loss of support services, (b) changes in sleep or eating patterns, (c) difficulty sleeping or concentrating, (d) worsening of chronic health problems, (e) worsening of mental health conditions, and (f) increased use of tobacco, or alcohol and other substances (Foster, 2020).

Conscious Behavioral Response

Table 3 shows the respondents' extent of Social Contagion - CBR to Astrology from social media.

For the Intake Phase of social contagion (the process wherein people absorb information related to a particular subject, e.g., Astrology; the first step to social contagion), the sample scored high. The sample is frequently encountered, viewed, and interacted with Astrology posts through their preferred social networking sites. The results imply that there is indeed a considerably broad reach of online Astrology related content on people that share similar demographic characteristics.

For the Output Phase of social contagion (wherein the sample actively distributes and

spreads information relating to a subject, e.g., Astrology), the sample only had an average score. Not too often nor too rarely, the respondents only post content related to astrology sometimes. Additionally, it is noticeable that the sample prefers: (a) reposting/reblogging already-made content about it as opposed to making original ones, and (b) more private content-sharing: sending related posts through private messaging than publishing posts in public signified by the difference in the median score (3.00 for private distribution of content and 2.00 for public posting).

Table 2. Stress Levels of Respondents in the Last Month (October 2020) (n=406)

Stress Level	1	2	3	4	5	Median	Qualitative Interpretation
Uncertainty							
<i>How often have you felt nervous and "stressed"?</i>	6	16	44	109	231	5.00	Very High
<i>How often have you been upset because of something that happened unexpectedly?</i>	7	38	76	166	119	4.00	High
<i>How often have you been angered because of things that happened that were outside of your expectations?</i>	17	52	80	151	106	4.00	High
<i>How often have you felt that you were effectively coping with important changes that were occurring in your life?</i>	6	84	155	127	34	3.00	Moderate
Median Score						4.00	High
Control							
<i>How often have you felt that you were unable to control the important things in your life?</i>	17	53	85	145	106	4.00	High
<i>How often have you felt confident about your ability to handle your personal problems?</i>	34	75	130	111	56	3.00	Moderate
<i>How often have you been able to control irritations in your life?</i>	26	103	136	98	43	3.00	Moderate
<i>How often have you felt that things were going your way?</i>	27	100	160	92	27	3.00	Moderate
Median Score						3.00	Moderate
Management							
<i>How often have you found yourself thinking about things that you must accomplish?</i>	6	5	32	107	256	5.00	Very High
<i>How often have you felt difficulties were piling up so high that you could not overcome them?</i>	19	51	66	123	147	4.00	High
<i>How often have you found that you could not cope with all the things that you had to do?</i>	18	79	101	132	76	4.00	High
<i>How often have you dealt successfully with day-to-day problems and annoyances?</i>	10	57	139	149	51	3.00	Moderate
Median Score						4.00	High

Legend: 5 - Very High; 4 - High; 3 - Moderate; 2 - Low; 1 - Very Low

Level of Susceptibility to Barnum Effect

Table 4 shows the respondents' level of susceptibility to Barnum: PAR, IFR, and IER.

The Personal Accuracy Ratings (PAR) tackle astrological statements' accuracy, in general, based on the respondents' personalized perceptions of their characteristics and behaviors. A median of 3.00 (High) was observed in the PAR questions, which covers dimensions that tackle the accuracy of astrology statements based on sample's personality traits, self-

descriptions, and zodiac signs, increased Astrology interest due to the statements' accuracy, and Astrology's correct prediction on their reactions to certain situations. This median score suggests that the respondents agree about online astrological statements being accurate based on their personalities and traits. The accuracy and uniqueness of astrological statements increase the people's acceptance that they and their sources are valid (Forer, 1949), hence developing an illusion of

credibility and correctness while forming a connection through this validity: essential properties of the pseudosciences to sustain themselves.

The Interpretation Favorability Ratings encapsulate the validation or amount of approval the respondents perceive with regards to Astrology. A median of 3.00 (High) was observed in the IFR questions collection, which tackles Astrology's ability to echo moods, reaffirm inner self-perceptions, voice out interests, and validate the positive and unique qualities of the respondents. This median score interprets that the respondents agree that astrological statements are aligned with their interests. All the while, acceptance of Barnum profiles (such that they are presented depending on sun zodiac signs of a person) rises when they are relatively favorable since the subject (reader) is inclined to confirm the credibility of the unfavorable

ones (Snyder et al.,1977).

The Interpretation Exclusivity Ratings tackle the 'uniqueness' of the presented astrological concept to the subject. In a broader sense, the IER can be connected to the Barnum Effect, the phenomenon wherein one thinks that a description is individualized and/or crafted meets a person's expected personality descriptions (Gearon, 2018). In the survey, a median of 3.00 (High) was observed in all IER questions such as the connection of the subject to the concept, association of the self to the astrological interpretation regardless of it being positive or negative, and having the concept of individualized interpretations. This median score is equivalent to an interpretation that succinctly describes the respondents' LSB; that is, they agree that astrological statements feel exclusively made for them (hinting at a sense of uniqueness on their end).

Table 3. Respondents' Extent of Social Contagion – Conscious Behavioral Responses (CBR) to Astrology from Social Media (n=406)

Conscious Behavioral Response	1	2	3	4	5	Median	Qualitative Interpretation
Intake Phase							
<i>I see posts related to Astrology on my timeline.</i>	8	31	59	107	201	4.00	High
<i>I comprehensively read posts about Astrology on social media (social networking sites, websites, mobile apps, programs, etc.)</i>	31	50	75	128	122	4.00	High
<i>I visit Astrology websites or social media pages.</i>	39	57	105	102	103	4.00	High
<i>I download/like/subscribe to Astrology-related pages/websites online.</i>	94	75	76	79	82	3.00	Moderate
<i>I watch different Astrology-related videos on the Internet.</i>	62	96	111	76	61	3.00	Moderate
Median Score						4.00	High
Output Phase							
<i>I send posts from Astrology pages/websites in private messages.</i>	106	46	70	80	104	3.00	Moderate
<i>I tag other people on Astrology pages/websites on social networking sites.</i>	126	55	64	80	81	3.00	Moderate
<i>I send posts from Astrology pages/websites in group messages.</i>	121	64	69	75	77	3.00	Moderate
<i>I share/reblog/retweet posts from Astrology pages/websites on social networking sites.</i>	78	67	88	106	67	3.00	Moderate
<i>I post content related to Astrology (e.g., posts, rants, anecdotes, essays, literary works, artworks, songs, etc.)</i>	154	79	75	63	35	2.00	Low
Median Score						3.00	Moderate

Legend:5 – Very High; 4 – High; 3 – Moderate; 2 – Low; 1 – Very Low

Demographics and CBR

Table 5 shows CBR Factor Scores, which are unequal in terms of sex. Using the Mann-Whitney U Test (Wilcoxon Rank Sum Test), the observation from the data concludes at a p<.05 that females have significantly higher CBR Factor Scores than males (p-value 0.000).

Therefore, females are more likely to involve themselves with astrology-related content online and participate in its social contagion than males.

For variables of religion, type of residence, and age, results show no sufficient evidence to conclude a significant difference between the

sample's CBR Factor Scores in correspondence with their respective p-values: 0.128, 0.736, and 0.339.

Additionally, the researchers have also performed Spearman's Rank-Order Correlation on

the sample's Age and CBR, which concludes to no statistically significant association regarding the monotonic relationship between the two (p-value 0.360) at $p < .05$.

Table 4. Respondents' Level of Susceptibility (LSB) to Barnum Effect (n = 406)

Level of Susceptibility to Barnum Effect	1	2	3	4	Median	Qualitative Interpretation
Personal Accuracy Ratings (PAR)						
<i>My friends and I often talk about the accuracy of the descriptions.</i>	19	45	194	148	3.00	High
<i>The personality traits about my Zodiac sign are accurate.</i>	25	65	174	142	3.00	High
<i>My friends' zodiac signs totally describe them.</i>	44	91	136	135	3.00	High
<i>My friends also became interested in astrology because of how accurate they perceive it is.</i>	44	95	136	131	3.00	High
<i>My zodiac sign accurately describes me as a person.</i>	22	56	204	124	3.00	High
<i>The interpretations express my characteristics just precisely.</i>	39	104	152	111	3.00	High
<i>Astrology correctly predicts the way I would have reacted to something.</i>	44	104	151	107	3.00	High
Median Score					3.00	High
Interpretation Favorability Ratings (IFR)						
<i>Astrology echoes my mood just right.</i>	34	81	163	128	3.00	High
<i>Astrology affirms my inner self.</i>	21	78	182	125	3.00	High
<i>The interpretations voice out my interests.</i>	33	76	173	124	3.00	High
<i>Astrology encourages me to love myself for who I am.</i>	34	87	171	114	3.00	High
<i>Astrology appreciates my uniqueness.</i>	68	117	129	92	3.00	High
<i>I like how Astrology brings about my positive side.</i>	18	101	197	90	3.00	High
<i>Astrology makes me feel valid as a person.</i>	39	116	177	74	3.00	High
Median Score					3.00	High
Interpretation Exclusivity Ratings (IER)						
<i>I relate with the specific descriptions given by astrological interpretations.</i>	10	78	171	147	3.00	High
<i>Astrological interpretations suit my characteristics more than they do to other people.</i>	9	68	206	123	3.00	High
<i>I feel a sense of connection with the astrological interpretations.</i>	13	67	206	120	3.00	High
<i>I can associate myself with astrological interpretations whether they are positive or negative.</i>	22	81	203	100	3.00	High
<i>Astrology gives predictions that are unique to me or at least for a small group of people including me.</i>	31	107	169	99	3.00	High
<i>Astrological interpretations feel like they were exactly made for me.</i>	7	49	252	98	3.00	High
<i>My friends with the same zodiac sign as mine feel a sense of mutual authenticity on the descriptions and interpretations.</i>	27	142	160	77	3.00	High
Median Score					3.00	High

Legend: 4 - Very High; 3 - High; 2 - Low; 1 - Very Low

CBR and SL

Quarantine, like other situations, brings a sense of uncertainty, e.g., pandemics, often yield higher levels of psychological distress among people (Rosen et al., 2020). In 2003, a study of 129 quarantined people during the SARS epidemic was conducted (Hawryluck, Gold, Robinson, Pogorski, Galea, & Styra, 2004). It found that Post-Traumatic Stress Disorder

(PTSD) and Depression became prevalent during the time. The study also found that both affected the persons exposed to the SARS disease patient. Moreover, the fear about life possibilities in the future brought by the COVID-19 pandemic causes stress and anxiety to people (Robinson & Smith, 2020). These feelings pave the way for Astrology to widen its reach as more individuals consider it as their

copied/defense mechanism against doubt, for it provides them clarity through its descriptions (Biswas, 2020). With people being instructed to stay home during this time, their usage of social media becomes prevalent, for it also acts as a form of distraction from the pandemic's grim reality, which also propagates Astrology to more subscribers (Namaste, 2019).

In line with this, Table 6 shows a direct weak but significant monotonic relationship between CBR Factor Scores and SL Factor Scores about Uncertainty. Likewise, another direct weak but significant monotonic relationship between CBR Factor Scores and SL Factor

Scores on Management was observed (p-values <0.000). On the other hand, between CBR Factor Scores and Stress Level Factor Scores on Control, no significant monotonic relationship was found (p-value 0.025).

It is also noteworthy that the following significant relationships within the Stress Level Factors were observed: (a) Inverse moderate relationship between Uncertainty and Control, (b) Direct moderate relationship between Uncertainty and Management, and (c) Inverse moderate relationship between Control and Management.

Table 5. Association of Respondents' Demographics & CBR (n = 406)

	Variables	Mean Rank	Test Statistic	P-Value
Sex	Female	224.51	11458.500	0.000***
	Male	155.16		
Religion	Catholic	207.65	10773.000	0.128
	Non-Catholic	184.58		
Type of Residence	Urban	204.27	9233.000	0.736
	Rural	198.48		
Age	18	198.94	5.674	0.339
	19	220.42		
	20	210.67		
	21	220.17		
	22	222.83		
	23	124.79		

Table 6. Correlation Matrix of CBR & SL Variables (n = 406)

Variables	CBR	SL Uncertainty FS	SL Control FS	SL Management FS
CBR	1.000	0.205*	0.025	0.179*
SL Uncertainty FS	0.205*	1.000	-0.335*	0.493*
SL Control FS	0.025	-0.335*	1.000	-0.413*
SL Management FS	0.179*	0.493*	-0.413*	1.000

Legend: *p<.05, **p<.01, ***p<.001

Where: CBR denotes CBR Factor Scores, SL Unc denotes Stress Level Factor (SL) Scores pertaining to domain Uncertainty, SL Con denotes SL Factor Scores pertaining to Control, SL Man denotes SL Factor Scores pertaining to Management, Correlation coefficients marked with an asterisk (*) are significant at 5% level.

CBR vs. Demographics and SL

Analyzing the ordinal response variable using the ordered logit model yielded to final four significant predictors. Table 7 denotes the following: (1) If the sex is male, the odds of obtaining a 5 in CBR Factor Point Score is 0.37 times (likelihood is reduced to nearly one-third) than obtaining a 4, holding other variables constant. It also follows the same odds of obtaining a 4 versus 3, 3 versus 2, and 2 versus 1, (2) This also implies that females tend to have a larger CBR Factor Point Score than males. Females tend to access, consume, and share astrology-related media more than males, (3) For various SL Factor Scores for Uncertainty, Control, and Management, the odds of obtaining a 5 in CBR

Factor Point Score are 1.34, 1.30, and 1.25 times, respectively, than obtaining a 4. It also follows the same odds of obtaining a 4 versus 3, 3 versus 2, and 2 versus 1, and (4) This implies that the higher the SL Factor Scores, the higher the CBR Factor Point Score will be.

Consequently, the more stressed a person is based on stress level assessment, the more that he/she will engage in accessing, consuming, and sharing astrology content. This poses a significant connection with Dunwoody’s explanation in Kim Witte’s Extended Parallel Process Model (Dunwoody, 2020): that stress can lead to seeking escapism during pandemics. In this case, engrossing in Astrology shows a way of escapism.

Table 7. Ordinal Logistic Regression Analysis of CBR vs. Demographics & Stress Levels (n = 406)

Parameter	Odds Ratio	Std. Error	p-value
Sex (Male as baseline)	0.3674915	0.0750982	0.000***
SL Uncertainty FS	1.345263	0.1443236	0.006**
SL Control FS	1.303841	0.130079	0.008**
SL Management FS	1.25026	0.1396801	0.046*
Intercepts	Estimate	Std. Error	
Cut 1	-2.120178	0.1625769	
Cut 2	-0.8887049	0.1241941	
Cut 3	0.1657535	0.1165035	
Cut 4	1.411872	0.1420522	
Log likelihood -622.02451			

Legend: *p<.05, **p<.01, ***p<.001

Table 8. Association between CBR and LSB (n=406)

Variable	Correlation Coefficient	p-value
CBR Factor Scores		
	0.603	0.000***
LSB Factor Scores		

Legend: *p<.05, **p<.01, ***p<.001

CBR and LSB

Spearman's Rank-Order Correlation, Table 8 results show that there is a monotonic relationship between CBR Factor Scores and LSB Factor Scores (p-value 0.000). CBR Factor Scores and LSB Factor Scores are moderately correlated. This implies that activities involved in the process of social contagion of Astrology in social media have an association with the sample's level of susceptibility to the Barnum effect.

As Sutherland proposed (Marsden, 1998), such a process describes the phenomenon of spreading social media content regarding Astrology. This proposition reaffirms Social Con-

tagion Theory's role, which speaks of disseminating ideas through conscious behavioral responses (Marsden, 1998). Relating this with people's bias towards popular culture and the influence of the Barnum Effect on an individual's behavioral response, the study's findings infer that social contagion may influence the way people perceive the concept of a subject, i.e., Astrology (be it foreign to them or not). In short, CBR and LSB are associated with each other in the sense that one's level of susceptibility to the Barnum Effect is attributed to their increased engagement (extent of social contagion) with Astrology-related content and vice versa.

Table 9. Ordinal Logistic Regression Analysis of CBR vs. LSB (n = 406)

Parameter	Odds Ratio	Std. Error	p-value
CBR Factor Score	3.834923	0.4357739	0.000***
Intercepts	Estimate	Std. Error	
Cut 1	-3.6162	0.2493112	
Cut 2	-2.279122	0.1657384	
Cut 3	-0.5928352	0.1174401	
Cut 4	1.451713	0.1343461	
Log likelihood -498.23342			

Legend: *p<.05, **p<.01, ***p<.001

CBR vs. LSB

To see the influence of CBR towards LSB, the calculated LSB Factor Point Score, as shown in Table 9, is regressed against CBR Factor Score using an ordered logit model. The initial model is also the final model since there is only one predictor: the CBR Factor Score.

Per unit increase in CBR Factor Score, the odds of obtaining a 5 in LSB Factor Point Score is multiplied by 3.83 times versus obtaining a 4. The same odds also hold for obtaining a 4 versus 3, 3 versus 2, and 2 versus 1 (lowest).

This implies that the higher the CBR Factor Score, the higher the LSB Factor Point Score is. Those who access, consume, and share astrology-related content tend to have a higher level of susceptibility to the Barnum effect. People

are more likely to consume and interact with astrology-related content due to their external locus of control, making them perceive generalized personality statements (i.e., astrological statements) as accurate self-descriptions (Glick et al., 1989). Their tendency to have "theory-driven" approaches in people's perception that make them distort perceived information to fit their personalities may also be a factor (Glick et al., 1989). Their egoistic nature (which makes them choose self-interested actions/thoughts) (Chung, 2016) can also be considered a relevant perspective.

The prominence of social media, especially at this time, broadened the social contagion (McFarland & Ployhart, 2015) of Astrology.

Thus, making it easier for people to access content related to such. Altogether, the features mentioned above influence people to become more invested in consuming astrological content while simultaneously manifesting their susceptibility to the Barnum effect of the pseudosciences such as Astrology in the process of social contagion.

Demographics and SL vs. LSB

Analyzing the ordinal response variable using the ordered logit model, as shown in Table 10, resulted in the final three significant predictors, which is similar to the previous result when CBR Factor Score is regressed to LSB Factor Point Score: (1) If the sex is male, the odds of obtaining a 5 in LSB Factor Point Score is 0.37 times (likelihood is reduced to nearly one-third) than obtaining a 4, holding other variables constant. It also follows the same odds of obtaining a 4 versus 3, 3 versus 2, and 2 versus 1, (2). This also implies that females tend to have a larger LSB Factor Point Score than males. Since Sex is a binary variable, the converse of the baseline is true for the other outcome. Females tend to access, consume, and share astrology-related media more than males, (3) On SL Factor Scores for Control and Management, the odds of obtaining a 5 in LSB Factor Point Score are 1.25, and 1.44 times, respectively, than obtaining a 4. It also follows the

same odds of obtaining a 4 versus 3, 3 versus 2, and 2 versus 1.

This implies that the higher the SL Factor Scores, the higher the LSB Factor Point Score will be. The more stressed a person is based on stress level assessment, the more susceptible to the Barnum effect. Psychological distress becomes prevalent during pandemics; people are likely prone to stress, isolation, and fear (Rosen, Glassman, & Morland, 2020). Such factors can lead them to seek escapism through fixation on other 'unaccounted' aspects of their lives (Dunwoody, 2020). Consumption of pseudosciences such as Astrology becomes a coping mechanism since: (a) this brings benefit to people's lack of control over the situation, and (b) it serves as a way to deal with their doubt by providing 'clarity' with their self-concept expression (Biswas, 2020).

Delving more into related trends, Smallwood (2019) took an assertion with astrology's prominence in times of uncertainty. They claimed that this is mainly due to economic decline and political panic brought by pandemics. Hence, it can be denoted that stress causes people to have an impaired sense of external loci, urging them to rely on content that may provide them comfort and tranquility, especially at times of uncertainty.

Table 10. Ordinal Logistic Regression Analysis of Demographics and SL vs. LSB (n = 406)

Parameter	Odds Ratio	Std. Error	p-value
Sex (Male as baseline)	0.3675452	0.0748802	0.000***
SL Control	1.252686	0.1233723	0.002**
SL Management	1.44353	0.1453584	0.000***
Intercepts	Estimate	Std. Error	
Cut 1	-3.356456	0.2437016	
Cut 2	-2.199782	0.1662768	
Cut 3	-0.8129845	0.1235379	
Cut 4	0.8459764	0.1254128	
Log likelihood	-560.14323		

Legend: *p<.05, **p<.01, ***p<.001

Conclusion

The study found that female Filipino post-millennial university students have significantly higher CBR Factor Scores than male ones. Whereas for variables of religion, type of residence, and age, results showed no statistically significant difference with the sample's extent of social contagion - Conscious Behavioral Responses (CBR).

The researchers observed a direct positive weak but significant monotonic relationship between the sample's CBR Factor Scores and Stress Level Factor Scores on Uncertainty for correlation between variables CBR and Stress level. Likewise, a direct positive weak but significant monotonic relationship between CBR Factor Scores and Stress Level Factor Scores about Management was found. However, no significant monotonic relationship was found between CBR Factor Scores and Stress Level Factor Scores pertaining to Control.

With the Ordinal Logistic Regression Analysis of CBR vs. Demographics & Stress Levels, results imply that the higher the SL Factor Scores, the higher the CBR Factor Point Score will be. Thus, the more stressed a person is based on stress level assessment, the more that they will engage in accessing, consuming, and sharing astrology content.

Using Spearman's Rank-Order Correlation, results noted a monotonic relationship between CBR Factor Scores and LSB Factor Scores as they observed moderate correlation. This suggests that activities involved in the process of social contagion of Astrology in social media have an association with the sample's level of susceptibility to the Barnum Effect.

Meanwhile, the Ordinal Logistic Regression Analysis of CBR vs. LSB inferred that the higher the CBR Factor Score, the higher the LSB Factor Point Score is. Those who tend to access, consume, and share astrology-related content tend to have a higher level of susceptibility to the Barnum effect.

Lastly, for the association between SL and LSB, the Ordinal Logistic Regression Analysis of Demographics and SL vs. LSB indicated that the higher the SL Factor Scores, the higher the LSB Factor Point Score will be. The more stressed a person is based on stress level assessment, the more susceptible to the Barnum effect.

Overall, the higher the SL and the higher the CBR, the higher the LSB. Hence, in this period of the pandemic, females are more susceptible to higher levels of Barnum Effect as they consume higher levels of Astrology-related information triggered by higher levels of stress due to high level of uncertainty and low level of control to the current situation.

Acknowledgments

With immense gratitude, the researchers would like to thank the following for their continuous support and guidance throughout the making of this research. Without them, the researchers would not have adequately executed their plans and aspirations for the study.

Firstly, to the Divine God for granting them strength, energy, wisdom, and intelligence throughout the making of this study. Despite the challenges, the researchers were able to surpass them because of Him.

Deepest thanks shall be given to their families and friends as well, who had been their fount of strength and forbearance. Without their effort, faith, and support, this would not have been seamless and convenient.

To Dr. Myla Arcinas, the researchers' dearest adviser, her expertise and proficiency in the behavioral sciences enabled the researchers to coagulate their interests and ideas into a formal inquiry. Without her efforts to go the extra mile in attending to the researchers' concerns and doubts, the paper's fundamentals and weaknesses would not have been made clear. Her endless support and guidance paved the way for the research paper's full potential and publication.

Gratitude must also be given to Mr. Jon Karl Estanislao, a statistician and a friend of a researcher, who contributed and guided the members with the correct methods of data handling and analysis.

The researchers are also greatly indebted to Mr. Christian Gopez, the Humanities and Social Sciences strand's research coordinator, for providing never-ending support and guidance as well as all necessary materials, forms, library research training, means in acquiring research funds, and the like.

To Mr. Jose Ma. Arcadio Malbarosa, their Practical Research 2 mentor, for illustrating

key concepts and foundations of an inquiry. Such knowledge helped them research with a strong background. To Mr. Lambert Yancy Garganta, their homeroom adviser, for contributing to their research processes. He extended his support and assistance by forwarding the researchers' concerns to their respective research coordinator, and mentor.

Lastly, but never the least, the group wishes to thank every member of De La Salle University-Integrated School Manila's academic community in upholding a conducive and healthy learning environment for the students, providing access to multiple academic journals, providing funds to be used for research endeavors, and guiding the researchers throughout the making of this study. Because of them, the proponents were able to secure the safety and formality of their research while retaining qualities of ethicality, organization, scholarliness, and relevance.

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