



SOCIAL ATTITUDE PROFILES AND ATTRIBUTION TYPES CONFRONTING PANDEMIC COVID-19

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ABSTRACT

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This study aimed to analyze the social processes confronted during the COVID-19 pandemic, arguing that social problems should be primarily analyzed to utilize public health policies. The theoretical framework concerns social attitudes of behavior, emotion, and cognition (BEC) and social attribution types of inner and outer crossed by temporal and permanent, as proposed by Weiner (1974). A quasi-experiment research design was processed using a questionnaire which included personal identities designed by between-subject of 221 people sampled, and items of social attitudes profiles and attribution types designed by within-subject of 27 conditions. Factor analysis expounded that all the items be grouped into 8 independent components that corresponded to the items constructed to be evaluated as a successful design. Analyzing within-subject variables, BEC of social attitudes as health, medical, faith, and risk and mental symptoms except that of political were highly negative skewed in distributions. Each of BEC was individualized to compose the related social attitudes. For attribution types, the permanent ones of personal, governmental, and religious, but not medical, were attributed to the epidemic. This study suggested that social attitudes of BEC were adapted to the pandemic and that attribution should be regarded primarily to make policies efficient for public health.

Contribution/Originality: The paper contributes the first analysis of theoretical frame which concerns social attitude profiles and social attributions types confronting the COVID-19 pandemic. The contribution of this study could guide paradigms concerned with social attitudes and attributions to ensure the efficiency of public health enhancement, attracting personal attention and efforts to counteract the pandemic.

1. INTRODUCTION

In 2020, the world was in a panic caused by COVID-19, which the WHO declared a pandemic on March 11th, 2020 [https 1].¹ The damages were comparable to the 2nd World War, insomuch as the disease had infected 11,125,245 people across 213 countries and territories, resulting in 528,204 deaths as on July 5th, 2020. Moreover, it is harder to estimate how much economic and social business loss was caused [https 2].² Worldwide, tears and

¹ <https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>.

² <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports>.

sweat were put into the pandemic problem to try and make a breakthrough and deliberate varieties of treatments available for social safety and wellbeing. Measures to cope up with serious problems were examined with the help of a variety of studies. Currently, research projects have primarily focused on the medical areas needed to develop vaccines and medicines (e.g., Mullard (2020)); personal health conditions, medical-social environments and on the economic-technological areas for national and international industries and markets (e.g., Nicola et al. (2020)). However, the streams of the above projects overlooked some indispensable issues related to the social processes which were involved in the deep levels to make complicated problems in the situation of the present pandemic. The social processes in the pandemic cover people's consciousness and behavior while struggling to survive serious threats insofar as the fundamental drive for preservation overrides the reciprocal drive for concept according to Fredrick Schiller (Patricia, 2007; Schiller, 1986). In cases where personal preservation is threatened, some aversive behaviors are activated (Azrin, Hutchinson, & Hake, 1967) to facilitate escape, avoidance, and aggression, accompanied by diverse negative emotions (Dinke, Kreamsreiter, Marten-Mittag, & Lahmann, 2014) to feel anxieties and fear, and grounded on more or less reasonable cognitions to conceive denial (Trunnell & Holt, 1974) and helplessness (Klein, Fencil-Morse, & Seligman, 1976). It is theorized that personal reactions to daily situations consist of a hierarchy composed of behavior, emotion, and cognition inasmuch as the behavior at the surface level is motivated by the emotion at the mediate level, which is reasoned by the cognition at the deep level. The hierarchic levels were proposed as the Behavior-Emotion-Cognition(BEC) model, which has been applied to analyze a variety of personal processes as labor types (Lee, Jeong, & Lee, 2017; Lee, Kim, & Lee, 2019) social efforts (Sohn, Lee, & Lee, 2018) and love types (Ju, Lee, & Lee, 2018; Ju, Li, & Lee, 2019).

The BEC levels in social attitudes are related to social attributions accompanied by various social interactions. It is propounded that the attributed causes contribute to the expressed behaviors, the felt emotion, and the reasoned cognitions specified to the perceived social events and situations. According to Weiner (1974), the attribution was theorized as the 2x2 types as temporal inner, temporal outer, permanent inner, and permanent outer. A social behavior or phenomenon was attributed to composites of the above types. When one faces a failure, one attributes the result to the outer causes, while for a success, the inner causes are attributed to the defending attribution (Weiner., 1985), in an attempt to avoid the responsibility of one's own failure and be proud of one's own success. It is also expounded that the temporal attribution can be changed and alleviated, but the permanent attribution can be fixed and persistent. The flexibility of the temporal-permanent attributions is demonstrated in religious processes. Humans are chained to religion more or less owing to their personal beliefs, whether they nest in theism or atheism, according to Nietzsche (Santaniello, 2007). It is inevitable that people in society attribute some social problems to religious processes more or less due to subscriptions to their faiths. While referring to Cho and Lee (2017), one of the three dimensions of religious beliefs concerned the attribution to the god's benediction and human achievement.

This research was designed to analyze social processes in South Korea infected by the COVID-19 pandemic. First, it inquired how people in affected societies expressed behavior, felt emotion, and reasoned cognition as framed under BEC model. Second, it asked how they attributed the epidemic losses as typed by Weiner's theory. Third, it examined how the social process of the first and second was varied by personal identities and social attitudes. The personal identities of gender, age, and religion were designed as the between-subject variables. The BEC attitudes toward health, faith, politics, and medicine, which were designed as the within-subject variables, were analyzed by the between-subject variables. The items of the social attributions inquiring about what were caused by the losses of the pandemic were analyzed by the above BEC attitudes.

This research can contribute to policies of public health, and the findings of this research are invaluable if significant results are produced. Since the virus has many variations and is quick to mutate, allowing it to reappear and inflict serious losses of human life, it is vital to develop strategies to prevent spread of the pandemic. Of course, the development of medical strategies is urgently needed. However, the fundamental management of the social

processes suggested by this study should not be overlooked as this could contribute to making technical efforts to prevent or mitigate the pandemic more effectively.

2. METHOD

2.1. Sample Size

This sample size of the study comprised 223 participants, including 54 online (via Google survey form) and 169 offline in Jinju, South Korea, while 2 participants in online were excluded following non-agreement to respond to the questionnaire.

2.2. Experimental Material

The questionnaire constructed for this study included an introduction, items about participants' social identities, and questions on the social processes during the COVID-19 pandemic. The introduction explained the purpose of this study, and ensured their confidentiality and rights. The questions related to social identities included three items related to gender (Male or Female), age (10 year intervals), and religion (Buddhist, Christian, or Atheist). The questions on social processes comprised 27 items about (1) health attitudes, (2) medical attitudes, (3) political attitudes, (4) faith attitudes, (5) risk attitudes, (6) mental health symptoms, and (7) attributions of contagion. All items were rated on the Likert scale, from the lowest 1, to the highest 7. Each of the attitude (1), (2), (3), (4), and (5) comprised 3 items each corresponding to expressed behavior, felt emotion, and reasoned cognition. The symptoms (6) consisted of 4 items related to depression, fear, anger, and delusion. The attribution (7) was categorized by 8 items related to the temporal and permanent aspects of health, governmental, medical, and religious causes. The items of questioning attitudes consisted of how a participant committed to his or her attitude of the expressed behavior, felt emotion, and reasoned cognition as framed by Lee's BEC, as shown in the first paragraph in each subchapter of "Results and Discussion". The responses of 223 participants to the questionnaire were measured and presented through descriptive statistics, distribution, factor analysis, ANOVA, and regression. The statistical analysis was processed by SPSS (v. 21.0). The variables of sex, age and religion were designed as between-subjects, and social processes, such as health attitudes, political attitudes, medical attitudes, faith attitudes, risk attitudes, mental health symptoms, and social attribution, were designed as within-subjects. All within-subject variables were measured by rating from the lowest 1 to the highest 7.

This study constructed a questionnaire to manipulate and measure Independent Variable and Dependent Variable of social processes, not proposing a psychological test inevitable of high reliability. However, the questionnaire showed high reliability, as the social attitudes of 18 items consisting of health, political, medical, faith, and risk BEC resulted in Cronbach's alpha of 0.838, the mental health symptoms of 4 items in 0.896, and the social attribution of 8 items in 0.736.

2.3. Research Procedure

Three of the researchers of the current study met people for the offline survey, which consisted of 4 printed pages. For the online survey, people were invited through the Google survey link. Before the researchers asked participants to respond to the questionnaire, their consent was obtained. After giving the whole questionnaire, the participants were allowed first to read the introduction, and understand how to respond to the items of the questionnaire.

3. RESULTS AND DISCUSSION

3.1. Distribution for Sex, Age and Religion

The between-subject variables were divided in Sex (Male, Female), Age (each class of 10 years from 10 years to 80 years), and Religion (Atheist, Buddhist, Christian, and Others). The distributions of participants were as

follows: (1) for sex, males numbered 89 (39.9%), and females numbered 134 (60.1 %); for age, the class of 10 years comprised 41 (18.4%), 20 years comprised 24 (10.8%), 30 years comprised 10 (4.5%), 40 years comprised 33 (14.8%), 50 years comprised 72 (32.3%), 60 years comprised 33 (14.8%), and 70 years comprised 10 (4.5%); for religion, Atheist comprised 71 (31.8%), Buddhist comprised 75 (33.6%) and Christian comprised 77 (34.5%).

The variable of sex had little influence on any social processes in the pandemic, except on political and risk attitudes. The variables of age influenced conspicuous political attitudes, medical attitudes, faith attitudes, risk attitudes, and mental health symptoms. The religious affiliation influence was trivial in almost all social processes, but it influenced faith attitudes, risk attitudes, and mental health symptoms, as expected. Therefore, all the between-subject variables had little influence on social attribution, which was only related to the within-subject variables.

3.2. Factor Analysis of the Items

The factor analysis aimed to find out the items in the questionnaire were that mutually independent. The factor analysis was processed by the extraction method of “Principal Component Analysis” and the rotation method of “Varimax with Kaiser Normalization”. The rotated component matrix is shown in Table 1. By KMO and Bartlett's test, the Kaiser–Meyer–Olkin measure of sampling adequacy = .788, and Bartlett's test of sphericity approx., $Chi\text{-square} = 3078.214$, $df = 351$, $p = 0.000$. Indexing Total Variance Explained in Rotation Sums of Squared Loadings, Cumulative % amounted to 72.597 with 8 components. The results showed that all items were grouped into 8 independent components, which corresponded to the items constructed, to be evaluated as a successful design. The factor analysis suggested that the analyses would be progressed by each component independently.

Table 1. Rotated component matrix ($N = 223$).

Item	Component							
	1	2	3	4	5	6	7	8
Health-Cognition	-0.017	0.079	0.046	0.120	0.067	0.839	0.125	0.064
Health-Emotion	-0.011	0.096	-0.038	0.062	0.021	0.818	0.062	0.051
Health-Behavior	0.166	0.055	0.025	0.196	0.049	0.752	0.012	0.079
Politic-Cognition	0.010	0.174	0.119	0.802	0.030	0.221	0.209	0.001
Politic-Emotion	-0.025	0.164	0.160	0.835	0.064	0.148	0.233	-0.006
Politic-Behavior	0.239	0.200	0.050	0.775	0.097	0.106	0.144	-0.013
Medical-Cognition	0.131	0.074	-0.005	0.362	0.055	0.258	0.614	0.153
Medical-Emotion	0.018	0.026	0.231	0.153	-0.088	0.043	0.819	0.200
Medical-Behavior	-0.037	0.044	0.329	0.322	0.060	0.052	0.686	0.054
Faith-Cognition	0.019	0.886	-0.068	0.214	0.097	0.049	0.038	0.034
Faith-Emotion	-0.021	0.916	-0.004	0.073	0.078	0.085	0.067	0.159
Faith-Behavior	0.057	0.883	-0.029	0.164	0.031	0.130	0.009	0.083
Risk-Cognition	0.108	0.157	0.096	-0.062	-0.051	0.043	0.129	0.752
Risk-Emotion	0.425	-0.058	-0.024	0.025	0.032	-0.033	0.011	0.711
Risk-Behavior	0.056	0.194	0.084	0.065	0.072	0.269	0.197	0.638
Depression	0.842	-0.060	0.075	0.053	0.032	0.019	-0.009	0.178
Fear	0.852	-0.037	0.081	0.056	0.062	0.077	-0.021	0.284
Anger	0.885	0.082	-0.020	0.042	0.143	-0.001	0.040	0.004
Delusion	0.815	0.073	-0.024	0.042	0.153	0.064	0.064	0.020
Personal Care	0.140	0.109	-0.053	-0.077	0.773	0.016	0.251	-0.0096
Personal Habit	0.253	0.111	0.157	0.053	0.574	0.113	0.186	-0.013
Governmental Policy	-0.052	-0.194	0.664	0.328	0.247	-0.078	0.039	0.134
Governmental System	0.056	-0.141	0.762	0.328	0.224	-0.039	-0.027	0.101
Medical Treatment	0.059	0.033	0.840	0.022	-0.067	0.012	0.209	0.033
Medical System	0.033	0.077	0.787	-0.103	-0.038	0.098	0.194	-0.022
Religious Convention	0.052	0.102	-0.055	0.153	0.786	0.053	-0.238	-0.021
Religious Fate	0.036	-0.070	0.172	0.080	0.759	0.007	-0.139	0.155

The grouping of variables by factors analyzed the variables factor wise. The health cognition, the health emotion, and the health behavior were set as the 6th factor; the political cognition, the political emotion, and the political behavior as the 4th factor; the medical cognition, the medical emotion, and the medical behavior as the 7th factor; the faith cognition, the faith emotion, and the faith behavior as the 2nd factor; the risk cognition, the risk emotion, and the risk behavior as the 8th factor; the depression, the fear, the anger, and the delusion as the 1st factor; the personal care, the personal habit, the religious convention, and the religious fate as the 5th factor; and the governmental policy, the governmental system, the medical treatment, and the medical system as the 3rd factor.

3.3. Social Attitudes

Social attitudes in this study have been classified into 6 divisions: BEC of health, political, medical, faith, risk, and mental health symptoms. Each attitude was analyzed by within-subject of BEC and by between-subject of sex, age, and religion in ANOVA.

3.3.1. Health Attitudes

The variables of health attitude consisted of questions and responses such as “How much do you know about your health?” for cognition; “How much do you feel reliable on your health?” for emotion; and “How much do you keep exercise for your health?” for behavior. The distributions of the health BEC were all skewed to negative for the cognition as $-.472$, for emotion as $-.416$, and for behavior as $-.433$, suggesting that they were higher distributed at all of BEC, each of which was little differentiated, shown as $Mean = 4.821$, $SD = 1.246$ for the health cognition, $Mean = 4.740$, $SD = 1.264$ for the emotion, and $Mean = 4.857$, $SD = 1.262$ for the behavior.

3.3.2. Political Attitudes

The variable of political attitudes consisted of questions and responses such as “How much do you know about your favorite political party?” for cognition; “How much do you feel reliable on your favorite political party?” for emotion; and “How much do you take part in your favorite political party?” for behavior. The distributions of the political attitudes were all skewed to positive for cognition as $.033$, for emotion as $.123$, and for behavior as $.643$, suggesting that they were less distributed across BEC, each of which was differentiated. The main effect of BEC on the political attitudes was significant, $F = 86.866$, $df = 2/444$, $MSe = .823$, $p = .000$, shown as $Mean = 3.771$, $SD = 1.668$ for political cognition, $Mean = 3.650$, $SD = 1.683$ for emotion, and $Mean = 2.735$, $SD = 1.660$ for behavior, suggesting that the political behavior was lower than cognition and emotion.

The main effect of sex on the political BEC was significant, with no interaction between them, $F = 7.395$, $df = 1/221$, $MSe = 6.532$, $p = .007$, suggesting that the political attitudes of BEC were higher for males than females. The main effect of age on political BEC was significant, with no interaction between them, $F = 3.507$, $df = 6/216$, $MSe = 6.293$, $p = .002$, suggesting that the political BEC was higher in the elder years.

3.3.3. Medical Attitudes

The variables of medical attitudes consisted of questions and responses such as “How much do you know about the medical situations during the pandemic?” for cognition; “How much do you feel reliable on the medical treatments for the pandemic?” for emotion; and “How much do you support medical policy on the pandemic?” for behavior. The distribution of the medical BEC were all skewed to negative for the cognition as $-.209$, for emotion as $-.503$, and for behavior as $-.334$, suggesting that they were higher distributed at all of BEC, each of which was differentiated. The main effect of BEC on the medical attitudes was significant as $F = 21.441$, $df = 2/444$, $MSe = .874$, $p = .000$, shown as $Mean = 4.300$, $SD = 1.313$ for medical cognition, $Mean = 4.861$, $SD = 1.340$ for emotion, and $Mean = 4.709$, $SD = 1.417$ for behavior, suggesting that the medical emotion and behavior were higher than cognition.

3.3.4. Faith Attitudes

The variables of faith attitudes consisted of questions and responses such as “How much do you think about your religious internalization?” for cognition; “How much do you feel in your religious faith?” for emotion; and “How much do you engage in your religious activity?” for behavior. The distributions of the faith BEC were all skewed to negative for the cognition as -0.468 , for emotion as -0.385 , and for behavior as -0.050 , suggesting that they were more highly distributed at all of BEC, each of which was differentiated. The main effect of BEC on faith attitudes was significant as $F = 27.573$, $df = 2/444$, $MSe = .820$, $p = .000$, shown as $Mean = 4.408$, $SD = 1.821$ for faith cognition, $Mean = 4.489$, $SD = 1.933$ for emotion, and $Mean = 3.901$, $SD = 2.107$ for behavior, suggesting that the faith cognition and emotion were higher than the behavior which might be suppressed.

The main effect of religion on faith BEC was significant, $F = 60.036$, $df = 2/220$, $MSe = 6.432$, $p = .000$, and the interaction between them was significant, $F = 3.363$, $df = 4/440$, $MSe = .803$, $p = .010$. For faith cognition, Atheists marked $Mean = 3.183$, $SD = 1.807$, Buddhists $Mean = 4.427$, $SD = 1.397$, and Christians $Mean = 5.520$, $SD = 1.456$; for the emotion, Atheists marked $Mean = 3.085$, $SD = 1.895$, Buddhists $Mean = 4.573$, $SD = 1.416$, and Christians $Mean = 5.701$, $SD = 1.522$; and for the behavior, Atheists marked $Mean = 2.437$, $SD = 1.857$, Buddhists $Mean = 3.747$, $SD = 1.603$, and Christians $Mean = 5.403$, $SD = 1.726$. The faith BEC was ordered generally as the low level for Atheists, the middle level for Buddhists, and the high level for Christians, but for the faith behavior Christians boosted much higher than Buddhists and Atheists.

3.3.5. Risk Attitudes

The variables of risk attitudes consisted of questions and responses such as “How much do you know about danger of contagion?” for cognition, “How much do you feel anxiety for contagion?” for emotion, and “How much do you cope counter to contagion?” for behavior. The distributions of the risk BEC were all skewed to high negative for cognition as -0.625 , for emotion as -0.418 , and for the behavior as -0.285 , suggesting that they were more highly distributed at all BECs, each of which was differentiated. The main effect of BEC on risk attitudes was significant as $F = 33.572$, $df = 2/444$, $MSe = 1.235$, $p = .000$, shown as $Mean = 5.453$, $SD = 1.368$ for the risk cognition, $Mean = 4.596$, $SD = 1.585$ for emotion, and $Mean = 5.112$, $SD = 1.245$ for behavior, suggesting that risk cognition and behavior were higher than emotion which might be suppressed. The main effect of sex on the risk of BEC was significant, with no interaction between them, $F = 11.273$, $df = 1/221$, $MSe = 3.310$, $p = .001$, shown for males, $Mean = 4.764$, $SD = 1.464$, and females, $Mean = 5.246$, $SD = 1.323$, suggesting that males were more resistant to contagion risk than females.

The main effect of age on the risk of BEC was significant, with no interaction between them, $F = 2.655$, $df = 6/216$, $MSe = 3.315$, $p = .017$, suggesting that the risk of BEC was higher in elderly individuals. The main effect of religions on the risk of BEC was significant, $F = 60.056$, $df = 2/220$, $MSe = 3.312$, $p = .003$, suggesting that the risk of BEC was ordered as the low level for Atheists, the middle level for Christians, and the high level for Buddhists, and further that religions made risk attitudes more sensitive across BEC to the risk of the pandemic compared to Atheists.

3.3.6. Mental Symptoms

The variables of mental health symptoms consisted of items of depression, fear, anger, and delusion, asked by questions such as “How much do you feel depression in social derivation?” “How much do you feel fear in social derivation?” “How much do you feel anger in social derivation?” and “How much do you feel delusion in social derivation?” The distributions of the symptoms were a little skewed to negative as -0.166 for the depression, as -0.141 for fear, as -0.096 for anger, and as -0.045 for delusion, suggesting that they were slightly higher distributed at all, each of which was differentiated. The main effect of the symptoms was significant, $F = 14.656$, $df = 3/666$, $MSe = 0.874$, $p = .000$, shown as $Mean = 3.870$, $SD = 1.692$ for depression, $Mean = 3.830$, $SD = 1.596$ for fear, $Mean =$

3.955, $SD = 1.721$ for anger, and $Mean = 3.417$, $SD = 1.628$ for delusion, suggesting that delusion was lower than the other three symptoms, but all scores were below 4, rated from 1 to 7, with a moderately skewed distribution.

The main effect of age on symptoms was significant, $F = 3.665$, $df = 6/216$, $MSe = 7.833$, $p = .002$, and the interaction between age and symptoms was significant, $F = 1.687$, $df = 18/648$, $MSe = 0.858$, $p = .037$, suggesting that the older age was associated with higher symptoms for all but delusion. The main effect of the religions was significant, $F = 5.405$, $df = 2/220$, $MSe = 8.077$, $p = 0.005$, suggesting that Buddhism was much higher and Christianity lower across all mental symptoms. It suggested that the Christians were immunized strongly, but the Buddhists were more susceptible to mental symptoms.

3.3.7. Review of the Social Attitudes

A total of 5 kinds of social attitudes and 3 dimensions of BEC were mutually analyzed by ANOVA, as shown in Figure 1. Overall, the comparison showed that health, medical, and risk attitudes were higher leveled than political and faith attitudes. The main effect of social attitudes was significant, $F = 27.923$, $df = 2/444$, $MSe = 0.896$, $p = 0.000$. Additionally, cognition (C) and emotion (E) were more highly leveled than behavior (B). The main effect of BEC was significant, $F = 70.189$, $df = 4/888$, $MSe = 4.015$, $p = 0.000$. BEC were not differentiated in their health, medical, and risk attitudes, compared to political and medical attitudes. The interaction of social attitudes and BEC was significant, $F = 36.433$, $df = 8/1776$, $MSe = .897$, $p = 0.000$. The overall comparison of the social BEC suggested that the social attitudes were differentiated in each activation level to counter the crisis of the pandemic, and as observed by Lee et al., the BEC were not synchronized but individualized to compose an attitude to social situations.

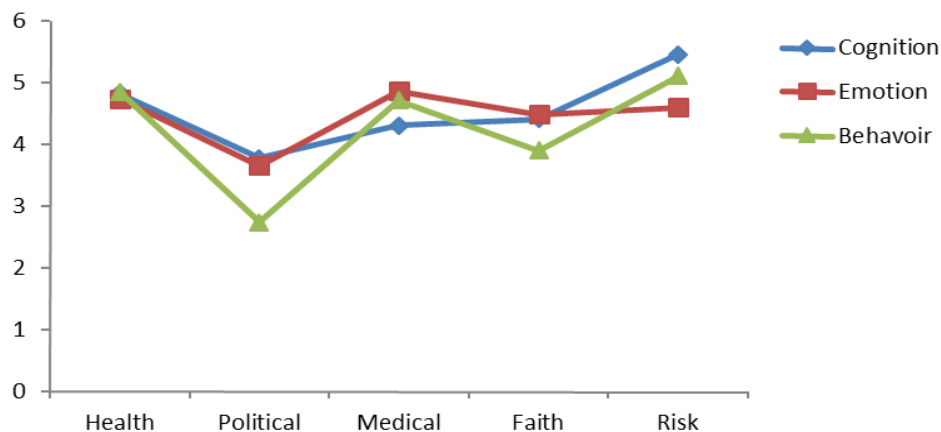


Figure 1. 5 kinds of social attitudes and 3 dimensions of BEC ($N = 223$).

3.4. Social Attribution for Pandemic

The social attribution questioned what people thought were the causes of the problems from the pandemic. The attributions were categorized to the personal temporal-permanent, the political temporal-permanent, the medical temporal-permanent, and the religious temporal-permanent, so that the personal attribution was regarded as inner and the others as outer attribution.

3.4.1. Personal Temporal-Permanent

The variables of personal temporal-permanent consisted of questions for the temporal attribution such as “How much do you think the problems are caused by current personal carelessness?” and for the permanent attribution “How much do you think the problems are caused by unhealthy personal habits?” The distributions were all skewed

to negative as -0.248 for personal-temporal, $Mean = 4.256$, $SD = 1.794$, and -0.166 for personal-permanent, $Mean = 4.121$, $SD = 1.318$, suggesting that they were not attributed to the pandemic.

3.4.2. Governmental Temporal-Permanent

The variables of governmental temporal-permanent consisted of questions for temporal attribution such as “How much do you think the problems are caused by the current policy of government?” and for the permanent attribution “How much do you think the problems are caused by the mal-system of government?” The distributions were all skewed to negative as -0.506 for the governmental temporal and as -0.236 for the governmental permanent, suggesting that they were not attributed to. The main effect of the governmental temporal-permanent policy was significant, $F = 5.385$, $df = 1/222$, $MSe = 0.734$, $p = 0.010$, and as $Mean = 4.498$, $SD = 1.613$ for the government temporal policy and as $Mean = 4.309$, $SD = 1.530$ for the government permanent policy, suggesting that the governmental current policy was exempted more from the government system. The main effect of age on governmental attribution was significant without an interaction between them, $F = 3.389$, $df = 6/216$, $MSe = 3.954$, $p = 0.003$, suggesting that the older the respondent was, the greater the governmental attribution was exempted.

The main effect of religions on governmental attribution was significant without an interaction between them, $F = 6.861$, $df = 2/220$, $MSe = 3.998$, $p = 0.001$, suggesting that the Atheist was the highest in exemption of governmental attribution, the Buddhist was the next and the Christian was the lowest.

3.4.3. Medical Temporal-Permanent

The variables of medical temporal-permanent consisted of questions for the temporal attribution such as “How much do you think the problems caused by the current maltreatment of medical institutes?” and for the permanent attribution “How much do you think the problems are caused by the mal-system of medical institutes?” The distributions were all skewed to negative as -0.368 for the medical temporal $Mean = 4.744$, $SD = 1.330$, and as -0.578, for the medical permanent $Mean = 4.749$, $SD = 1.395$, suggesting that they were not attributed to the pandemic.

3.4.4. Religious Temporal-Permanent

The variables of religious temporal-permanent consisted of questions as for the temporal attribution such as “How much do you think the problems are caused by the current rites of religious doctrine?” and for the permanent attribution “How much do you think the problems are caused by the fate of religious doctrine?” The distributions were bimodal skewed as 0.069, a little positive for the religious temporal, and as -0.156, a little negative for the religious permanent, suggesting that they were ambivalent, so to imply that the religious faith was not attributed to but the religious rites were a little attributed to. The main effect of religious temporal-permanent was significant, $F = 13.042$, $df = 1/222$, $MSe = 1.337$, $p = 0.010$, and $Mean = 3.734$, $SD = 1.809$ for religious temporal and $Mean = 4.131$, $SD = 1.655$ for religious permanent.

3.4.5. Review of the above Attribution Types

The above results analyzed by each item related to the social attribution inquired a further analysis arranged by general types of attribution as Inner/Outer x Temporal/Permanent. For the personal temporal $Mean = 4.256$, $SD = 1.794$; for the personal permanent $Mean = 4.121$, $SD = 1.318$; for the governmental temporal $Mean = 4.498$, $SD = 1.613$; for the governmental permanent $Mean = 4.309$, $SD = 1.530$; for the medical temporal $Mean = 4.744$, $SD = 1.330$; for the medical permanent $Mean = 4.749$, $SD = 1.395$; for the religious temporal $Mean = 3.734$, $SD = 1.809$; and for the religious permanent $Mean = 4.131$, $SD = 1.655$. The higher the rating scores, the more exempted the responsibility.

The main effect of the attribution variables (4 items as listed in the questionnaire) was significant, $F = 18.305$, $df = 3/663$, $MSe = 2.851$, $p = .000$, and the interaction of the attribution variables and the temporal-permanent types was significant, $F = 7.333$, $df = 3/663$, $MSe = 1.058$, $p = 0.000$. Commenting further on the trends of the attribution types, the inner type was defined by the personal attribution as $Mean = 4.198$, $SD = 1.322$ was leveled dissimilar to the outer one defined by the governmental, medical and religious ones as $Mean = 4.360$, $SD = 0.997$. The temporal attribution as $Mean = 4.295$, $SD = 1.167$ was leveled similar to the permanent attribution as $Mean = 4.263$, $SD = .983$. The inspection of Inner-Outer types expounded that the personal causes and religious ones were also accused of the pandemic compared to the governmental and medical ones.

Of the private causes, religious causes were more serious than personal causes, and among the public causes, governmental causes were more serious than medical causes. The inspection of temporal-permanent types expounded that the permanent causes of governmental, religious, and personal causes, except for medical causes, were more accused than temporal causes. The details of the pattern showed that the religious causes were troublesome, the medical causes were well practiced, and the problems were serious in private and permanent health habits and religious faith. Rather, the little differences between the inner and the outer and between the temporal and the permanent were impressive so to comment that the crisis in emergence of the serious pandemic could rule out all variation of attribution.

Table 2. Multi-variables regression for the attribution types ($N = 223$).

Dependent variables	Model	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>Sig.</i>
		<i>B</i>	<i>Std. Error</i>	<i>Beta</i>		
Personal Carelessness	Anger	0.323	0.116	0.310	2.788	0.006
	Delusion	0.211	0.107	0.192	1.983	0.049
Government current policy	Medical-Behavior	0.328	0.102	0.288	3.226	0.001
	Anger	-0.198	0.096	-0.211	-2.057	0.041
Government security system	Medical-Behavior	0.333	0.097	0.308	3.422	0.001
Medical tech- system	Medical-Behavior	0.184	0.095	0.187	1.939	0.054
Medical current treatment	Medical-Behavior	0.253	0.085	0.270	2.970	0.003
	Faith-Cognition	-0.203	0.093	-0.278	-2.196	0.029
Religious convention	Medical-Emotion	-0.518	0.132	-0.0383	-3.939	0.000
Religious fate	Medical-Emotion	-0.272	0.126	-0.221	-2.163	0.032

3.5. Multi-Variables Regression for the Attribution Types

This design had many within-subject variables as defined above. Among them, the variables related to the social attribution as personal, governmental, medical, and religious by temporal and permanent were targeted to be dependent variables in regression. Other variables such as health, political, medical, and religious BEC, and mental health symptoms were manipulated as independent variables. The analysis of the linear regression was expected to ensure what contributed to the social attribution in the pandemic.

Table 2 indicates that both the temporal and permanent attributions of the government and medical care were contributed positively by medical behavior. Both the temporal and permanent attributions of religion were

contributed negatively by the medical belief of emotion. It also showed that personal carelessness was accelerated by higher anger and delusion and was not affected by any other variables. Current medical treatment was not accused when faith was internalized, and the government current policy was accused when anger was higher.

4. CONCLUSION AND RECOMMENDATIONS

This study concerned the social processes confronting the COVID-19 pandemic in 2020 in South Korea. The method tooled a constructed questionnaire, designed in such a way that social processes were defined as a variety of attitudes which consisted of health BEC (Behavior-Emotion-Cognition as proposed by Lee et al. (2017)), medical BEC, political BEC, faith BEC, risk BEC, and the mental symptoms as depression, fear, anger, and delusion, and social attributions as personal, governmental, medical, and religious, crossed by temporal and permanent (which were further reorganized as the inner and outer types crossed by the temporal and permanent as proposed by Weiner (1974)).

Expounding the influences of the personal identities defined as between-subject variables of sex, age, and religion on social processes were mostly trivial, but the sex and age variables were differentiated in political attitudes and risk attitudes, suggesting that males and elderly individuals were more conscious of politics and patient with risks. As expected, religions were related to faith attitudes, the pattern of which was conspicuous as ordered at the low level for Atheists, the middle for Buddhists, and the high level for Christians, supporting Cho and Lee's (2017) analysis of distances among Atheists, Buddhists, and Christians. Religions were negatively related to risk attitudes, suggesting that the theists (Buddhist and Christian) were more impatient with risk attitudes than Atheists. However, when inspecting mental health symptoms, Christians showed high levels of immunity. The social attributions were not related to the personal identity variables, especially the religious affiliations, which were expected to have some influence.

Factor analysis expounded that all the items were grouped into the 8 independent components that correspond to items constructed to be evaluated as a successful design and to require analysis of the item by item for the independent components. The distributions of health BEC, medical BEC, faith BEC, risk BEC, and mental health symptoms were all skewed to negative, showing that they were highly distributed in significance of each ANOVA to suggest that the medical attitudes were preparatory high facing the pandemic. The mental health symptoms associated with social risk were high in seriousness and have also been reported in many studies (Dinke et al., 2014). However, the distributions of political BEC were all skewed to positive, showing that political behavior was low leveled, in significance of ANOVA to suggest that the political behavior was suppressed in expression. The overall comparison of the social BEC suggested that the social attitudes were differentiated at each activation level to counter the crisis of the pandemic. As proposed by Lee et al. (2017) and tested by others, the BEC was not synchronized but individualized to compose an attitude toward social situations.

Looking into the attribution types as Inner/Outer x Temporal/Permanent, in the inspection of Inner-Outer types expounded that the personal causes and religious ones were also accused of the pandemic compared to the governmental and medical ones. Of the private causes, religious causes were more serious than personal causes, and of the public causes, governmental causes were more serious than medical causes. The inspection of temporal-permanent types expounded that the permanent causes of governmental, religious, and personal causes, except for medical causes, were more accused than temporal causes. The details of the pattern showed that the religious causes were troublesome, and the medical were well adapted, and that the problems were caused by private and permanent health habits and religious fate.

The contribution of this study could guide paradigms concerned with social attitude profiles and attribution types to ensure the efficiency of public health programs, attracting personal attention and efforts to counteract the pandemic. The data and conclusion could be used for governmental authorities and medical systems to make policies for public health. The limitation of this study was at first that the sample was composed in a country, South

Korea and in the month of May 2020, during the pandemic period. This was done to limit the data generalization, however, the main variables of concern were manipulated within subjects. Second, the questionnaires comprised primary variables of social processes judged by the authors, so they did not include a sufficient number of variables that would be designed in future research. Hopefully, future projects of research would be required to sample from other countries and in different time frames, and construct a greater variety of questionnaires to analyze the wide scope of social processes regarding the pandemic.

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