

COPING STRATEGIES OF UNIVERSITY STUDENTS DURING SOCIAL ISOLATION FOR COVID-19 PANDEMIC IN BANGLADESH

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Abstract: *This paper identifies and analyses the university students' coping strategies due to social isolation during the COVID-19 pandemic. The research work undertakes three studies to empirically test and validate a multidimensional measure that can be used to identify ways university students have coped during the pandemic. The three-study process involves qualitative interviews to extend the issues identified within the literature, followed by two studies using principal component analysis and confirmatory factor analysis; each using separate samples (409 for study 1 and 346 for study 2), to test the reliability and validity of the proposed eight dimensional 26-item scale. Data from university students of Bangladesh was collected using a 5 point Likert scale. Data entry and analysis were done with the statistical software SPSS version 20. The article is unique as it has identified factors which are applicable to cope with the stress resulting out of social isolation during Covid-19 pandemic in Bangladesh. The factor study included factors and statements from numerous studies in addition to contributing few of its own. The study will benefit mental health practitioners, counselors and academicians to develop strategies by understanding students' perspective to intervene and guide them so as to enhance their mental health condition.*

Keywords: *Covid-19, Social isolation, University students, Coping strategies, Bangladesh*

1. INTRODUCTION

The COVID-19 pandemic and the social distancing measures disrupted the normal life for many people all at once. In Bangladesh, the first case of COVID-19 was detected on March 8, 2020. Since then many measures were taken which included closure of all educational institutes (schools, colleges and universities) on March 16, instructing the local administrations to stop political and religious rallies and social and cultural gatherings on March 19 and closure of all public and private offices from March 26 except for hospitals, kitchen markets, drug stores, and other emergency services. Moreover there have

also been continued restrictions placed on travel [1]. As the world is going through a severe health crisis caused by the spread of the highly contagious and often fatal COVID-19, extensive research is being done in various parts of the world. Studies so far on the pandemic can be differentiated by the focus of their research, viz medical issues [2-4], economic impact on the country [5-7] or emotional and psychological impact[8-13]. Literature on aspects of enforced quarantine situations suggests that the psychological impact of quarantine can cause low mood, insomnia, stress, anxiety, anger, irritability, emotional exhaustion, depression and post-traumatic stress symptoms [14]. The impact can be wide-ranging, substantial, and long lasting [15] and thus require proper initiatives to address the issues and help populations cope in the long run [15,16].

The youth constitute the majority of the population in Bangladesh, it is essential to provide continuous support to them. The disruption in daily routine and widespread outbreaks has led to adverse mental health consequences [17] especially for those who enjoy being out. Under the current global pandemic situation, Islam [18] suggested that university students in Bangladesh are experiencing an unparalleled growth of depression and anxiety compared to the earlier studies. To adapt with the situation, the students used different strategies to cope which could be either harmful or constructive to deal with the distress of social isolation. Coping strategies include specific efforts, both behavioral and psychological, that one employs to master, tolerate, reduce, or minimize stressful events. Standard measures of coping for unstandardized changes may have limited utility [19]. O'Driscoll & Cooper [20] suggested that there were no convincing evidence that current methods of assessing coping tap into behaviors which have a considerable impact on stress-related experiences. Thus the objective of the study is to identify the factors that are used by the youth for coping social isolation due to COVID-19.

2. LITERATURE REVIEW

The significant contributor to the study of coping, Richard Lazarus [21-25] defined coping as “constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person”. Theoreticians, clinicians, and researchers came with more positive approaches to coping with life stresses by recognize coping as a cognitive approach and a product of situational appraisal where coping responses were perceived *more* as fluid processes determined by the context of the situation [21,25]. These coping strategies were seen

by Lazarus and his colleagues as belonging to two broad categories, namely, problem focused coping strategies and emotion focused coping strategies. The former discusses reactions which would focus on solving the source of stress at hand whereas the latter approach dealt with responses which would lessen the emotional impact of a stressful situation [26]. Transactional theory of stress grounded the distinction between problem and emotion focused coping in the research by Lazarus and Folkman's [24]. They defined coping as constantly changing cognitive and behavioral efforts to manage specific external and/or internal situations deemed to exceed or overwhelm the individual's resources. Cox and Ferguson [27] argued that the Lazarus and Folkman's typology has demonstrated weak predictive power. Folkman [28], in his research stated that reducing coping to two categories of problem and emotion focused strategies tends to cover the rich variety of coping strategies that they incorporated. The main challenge is to find the critical number of types of strategies to evaluate and it needs creative solution to summarize coping patterns. Following this research, however, many other researchers proved that in order to deal with stress, there are many more reactions and coping strategies in addition to the very generically defined problem focused coping and emotion focused coping [29-33]. Additionally, a third broad coping mode was identified by others and was labeled avoidance coping [34-36].

Taking the research on coping strategies forward, a paramount contribution is offered by Carver, Scheier & Weintraub [37]. The scale which Carver, Scheier & Weintraub eventually developed was named COPE, and was based on an extensive review of the available measures of coping and the previously developed models of behavioral self-regulation and the Lazarus model of stress were used as the benchmarks [38-40]. COPE has 13 conceptually different factors which are distinguished on the basis of their individual functionality. These factors are active coping, planning, suppression of competing activities, restraint coping, seeking social support for instrumental reasons, seeking social support for emotional reasons, positive reinterpretation & growth, acceptance, turning to religion, focus on & venting of emotions, denial, behavioral disengagement, mental disengagement and alcohol-drug disengagement.

Seclusion and social distancing due to COVID-19 can be correlated to feelings of loneliness, and make people experience other emotions like anger [16], and stress [41], especially as traditional social interaction tools don't work in these cases. The insecurity and resulting stress also may lead to feelings of melancholy, worry, fear, anger, annoyance, frustration, guilt, helplessness, and anxiety, as predicted by many experts [42-44],[16]. The overall unpredictability

of the situation accumulates, increasing the collective stress of the public [45], eventually causing higher levels of anxiety and depression [46]. To help with self-quarantine and mental issues, psychologists have come up with a number of strategies to cope through the ordeal, such as creating and following a routine, continuing with regular physical activities, engaging in creative pursuits, and limiting or monitoring consumption of social media content, maintaining mood and activity journals [47] and checking up on others.

Analyzing the psychological consequences of quarantines during the spread of Swine Flu, Johal [48] suggests measures such as increasing interpersonal communication with loved ones, reading newspapers, and watching television are effective towards fighting off feeling lonely and despaired. Other literature suggests that positive reframing of the situation is a successful strategy for people working in isolated, confined and extreme (ICE) settings [49,50] or in quarantine [51]. Furthermore Wood & Runger [51] have come up with many recommendations like “improving hygiene, healthy diet, exercising, sleeping, introspection, meditation, practicing minimalism, painting, composing, movement dancing, learning instruments, acquiring languages, knitting, gardening, cooking, reading books, listening songs, watching movies/serials, playing games and journaling the personal observation and experience during the period of coronavirus.”

Park & Park [52] also suggested similar streams of activities as per which acknowledging and expressing distress, keeping in touch with loved ones, and maintaining regular activities are some of the effective strategies to consciously follow during times of isolation and quarantines. Mukhtar [53] further validates this by pointing out that this situation can also be taken as an opportunity to work on one’s personal growth during this time, for example by acquiring skills. Also, all authors pertaining to their research findings have underscored the need for social connectivity as a very critical strategy in order to keep mental stress at bay [54, 55].

In a survey conducted from Wuhan and other effected areas during the early stages of the outbreak, Sweeny [56] discovered two main coping strategies employed; mindfulness and flow. It is imperative that people try to make regular plans for specific tasks with the intention to follow them rather than just making them for the sake of it [57]. Establishing a routine is beneficial in providing security and surety in an otherwise uncertain situation [58, 59]. To not get overwhelmed by the situation, Smith [58] suggested that the whole task be broken down into smaller ones, organized in terms of importance

and urgency, and then followed through. Other suggested strategies by ICE professionals include focusing on small achievements [60, 61], taking online courses and learning new skills [62, 63], avoiding conflict [64] and developing skills to live with other people harmoniously [65].

Dewe [66] identified work stress researcher's dependence on quantitative methodology as the problem. A number of researchers have confronted the appropriateness of the structured reality imposed by such methods. According to Van Maanen [67], qualitative methods add a richness and refinement which is not available to quantitative methods. Respective values of each methodology can be acknowledged by including both methodologies so that their individual strengths can be optimized.

Several researchers [68-69], [37] developed coping scale for wide applicability while others have designed for specific types of stressful situations such as marriage, parenting, finance, and occupation [70-71]; chronic pain [72]; hazardous emergency work [73]; caregiving [74]; and sports injuries [75]. Some investigators have modified the Way of Coping Questionnaire (WCQ) by adding items which is relevant [76] or by dropping items that considered to be inappropriate for a particular stressor [77] in order to assess coping more accurately in a particular context. If strategies that may be relevant to multiple stressors are included in the scale then there is a possibility of producing an overly long scale and including items that are clearly irrelevant to some situations [78]. The research by Kato [79] identified that the studies involving college students mostly used the COPE scale where majority of the cases the researchers reconstructed the conceptual structure of the COPE, proposed by Carver [37]. More specifically, these studies formed new scales after conducting a factor analysis or had used only a selection of subscales of the COPE. Several studies have reported that many items within broadly applicable coping scales are not relevant for certain types of stressful episodes. Therefore, situation-specific coping scales that have been used more frequently than broadly applicable coping scales may be useful for specific stressors [79]. Carver [37], in their research also mentioned that there are too many different ways to deal with life's adversity which is difficult to measure all in one inventory.

Today's youth are facing multiple social realities than past generations, mainly due to shifts in parents' traditional roles. In particular, the increase in working mothers; the decline of the once-traditional joint family, with more married couples sharing a home; the economic downturn; a more sophisticated and demanding world impose novel forms of stress on youth. While it is

possible that some will respond to these challenges by selecting traditional stress-coping mechanisms like social support, religion, etc. [80, 81], many may choose mechanisms involving electronic media [82]. Therefore, an assessment scale that includes how youth use electronic media as a way to cope with stress is needed [83].

The existing literature in this field has highlighted the significance of the topic. Though there have been numerous similar researches, studies related to coping especially for youth under this new pandemic scenario are inadequate. This area needs attention as understanding the strategies can guide the policy makers and academicians to take proper measures to mitigate mental health problems of students during this pandemic. There have been very few studies attempted to investigate the coping strategies used by the university students under Covid-19 situation. It should be noted that since a global crisis of this magnitude hasn't been experienced before, the coping strategy of the same are yet to be understood and researched. This study pursues to identify and analyze the university students' coping strategies due to social isolation during the pandemic in Bangladesh. The next sections of this study deal with methodology, followed by data analysis and conclusion.

3. MATERIALS AND METHODS

In this research the data was collected through a well-structured questionnaire which was developed by reviewing related literature and focus group discussions rather than adopting validated scales in order to incorporate factors appropriate for the current distinctive situation. It is important to note that the usual traditional coping strategies in case of loneliness which result from illnesses, old age, or working in extreme and isolated locations might not work in this scenario as the magnitude of this catastrophe is unprecedented and its resultant impact on stress levels is bound to be different for every individual. Hence the decision to choose the scales empirically rather theoretically was taken in order to be able to sample widely and let the statistical tools guide in determining the important elements which were more relevant and applicable during the course of the pandemic.

In study 1, a pool of coping behavior statements which could be used as a result of stress from social isolation was generated and a total of 89 statements were gathered. The statements were reviewed by experts and also by a group of university students to ensure content validity. Based on the feedback, a few items were revised and some were eliminated which were

not theoretically relevant and were ambiguous. This review resulted in a final cross-sectional survey of 59 items which were used as measures to identify the coping strategies adopted by university students. The self-structured questionnaire was divided into two parts. The first part was designed to record the demographic information and the second part contained statements to identify each respondent's coping mechanism. The sampling technique for Study 1 was a convenience sample of academic experts and students through discussion and it was conducted in March 2020. In the next two studies (Study 2 & Study 3), the primary data from two separate independent samples were collected to certify the reliability and validity of the scale through assessment. For studies 2 and 3, a convenience sampling technique was followed focusing on responses from university students observing quarantine during the spread of the pandemic. All the statements in the questionnaire were closed-ended to be marked by the respondents. The study used a structured questionnaire using a 5 point Likert scale (1 = strongly disagree, and 5 = strongly agree) to collect data. The instrument was distributed online and was kept anonymous. The target group was tertiary level students and they were requested to share it with their friends and family members. Data entry and analysis were done with the statistical software SPSS version 20. Descriptive statistics were used to examine the demographic profile, Cronbach's alpha to measure reliability and Exploratory Factor Analysis to identify significant factors on coping strategies. The sampling process used in each study required to have broader representation of the targeted populations.

4. RESULTS

The demographic profiles of the respondents from both the studies are summarized in Table 1. In study 2 the sample size was 409 (received from April 13-26, 2020) and for study 3 it was 346 (received from July 15-30, 2020). The demographic profile is quite similar in both of the studies. Majority of the respondents were males (60.4 % and 68.2% respectively), stayed in urban areas with their family members. The average family size was 3-4 members (50.1% and 52.3 % respectively)

4.1. Study 2: Exploratory Factor Analysis

Two indicators were examined to assess the appropriateness of the sample for conducting exploratory factor analysis. The Kaiser Meyer-Olkin measure of sampling adequacy index was .823 and Bartlett's test of sphericity was significant, i.e., $p < .0001$, indicating that the sample and correlation matrix

Table 1
Demographic profile of the two survey samples

Study	Sample frame & number of respondents	Gender		Area		Living Arrangement			Current family member				
		M (%)	F (%)	Rural (%)	Urban (%)	Alone (%)	With Family (%)	With friends (%)	0 (%)	1-2 (%)	3-4 (%)	5-6 (%)	<7 (%)
Study 2	Convenience (n=409)	60.4	39.6	22.2	77.8	3.2	94.6	2.2	1.7	12.5	50.1	28.1	7.6
Study 3	Convenience (n=346)	68.2	31.8	28.3	71.7	2.3	95.1	2.6	0.6	11	52.3	28	8.1

were appropriate for the analysis [84]. The responses consisted of 59 items after conducting focus group discussions and literature reviews. The study used Principal Axis Factoring (PAF) to identify factors. Factor solutions were determined based on eigenvalues of 1.0 or greater, factor loadings of .50 or greater and simple structure [85]. Results indicated 8 factors with eigenvalues of 1.0 or greater (utilizing the Kaiser rule). During the analysis, varimax orthogonal rotation was conducted and produced the clearest factor structure. Thirty three items were dropped due to low factor loadings or dual-loading. These procedures resulted in a 26-item instrument that accounted for 64.757% of the variance.

The first factor consisted of 7 items, accounted for 22.306% of the variance, and was labelled *destructive coping* strategy. It contained items that measured the degree of negative emotional expressions by the students which included yelling, blaming, rude behaviour, refusing to obey, destroying, eating more and taking stress as a method to cope. The second factor included 3 items, accounted for 17.229% of the variance, and was labelled as the *focus on academic activities*. It contained items that reflected the degree to which a student was concentrating on assignments, subjects and duration of time dedicating for studies. The third factor contained 3 items, accounted for 9.488% of the variance and was labelled as *turning to religion*. It included items that indicated the respondents' increasing involvement in religious practices. This factor included items such as getting comfort by praying, believing in God and an increase in praying. The fourth factor had 3 items, accounted for 6.997% of the variance, and was declared as *planning*. It included planning for the worst situation and understanding of self and situation as a coping strategy. The fifth factor *mental disengagement* had 3 items, accounted for 5.097% of the variance. It measured the degree of involvement of students in activities like listening to music, watching movies, social media and the like that would distract them from the situation as a coping strategy. The sixth factor accounted for 4.945% of the variance, named *positive reinterpretation* and assessed the degree of students' positive mind-set towards the situation through positive view point of life, situation and the effort to relax or staying calm. The seventh factor accounted for 4.603% of the variance and was named as *focus on physical activity* that consisted of 2 items. The factor is indicated by the degree of students' involvement in physical and relaxation exercises. The eighth factor had 2 items, accounted for 3.862% of the variance, and was labelled as *focus on hobby*. The factor contained items that measure the degree of students' concentration on their hobbies which was indicated through time spent for hobbies and taking

Table 2
Items that have been assessed in Study 1, Study 2 and Study 3 for measuring coping behaviour of students

<i>Construct</i>	<i>Measurement Item</i>	<i>Source</i>	<i>Study 2 PAF loading (n= 409)</i>	<i>Study 3 CFA loading (n= 346)</i>
Destructive coping (Cronbach's $\alpha = 0.885$; CR= 0.899; AVE=0.6)	1	I yell, scream, or get angry	Hernandez, et al (2010). Carver, et al. (1989)	0.824
	2	I am blaming someone for causing this problem	Hernandez, et al (2010).	0.787
	3	I refuse to obey elders	Hernandez, et al (2010).	0.776
	4	I am behaving rudely with others	Hernandez, et al (2010). Carver, et al. (1989)	0.764
	5	I am destroying/breaking things to express my frustration	Hernandez, et al (2010).	0.718
	6	I am taking unnecessary stress	Study 1	0.642
	7	I am eating more junk/unhealthy food	Hernandez, et al (2010).	0.550
Focus on Academic Activity (Cronbach's $\alpha = 0.924$; CR= 0.902; AVE= 0.754)	1	I am trying to organize my study load/ assignments for different subjects	Study 1	0.912
	2	I am giving more time for studying each of my subjects	Study 1	0.874
	3	I am focusing on completing homework/ assignments	Hernandez, et al (2010).	0.793

<i>Construct</i>		<i>Measurement Item</i>	<i>Source</i>	<i>Study 2 PAF loading (n= 409)</i>	<i>Study 3 CFA loading (n= 346)</i>
Turning to Religion (Cronbach's α =0.874 ; CR= 0.903; AVE= 0.756)	1	I am receiving comfort from praying	Rokach, A. (2005) Carver, et al. (1989)	0.886	0.873
	2	I have increased praying	Rokach, A. (2005) Hernandez, et al (2010). Carver, et al. (1989)	0.737	0.861
	3	I trust that God will solve this problem	Rokach, A. (2005) Hernandez, et al (2010). Carver, et al. (1989)	0.728	0.875
Planning (Cronbach's α =0.822 ; CR= 0.792; AVE= 0.562)	1	I am planning what to do in the worst situation	Study 1	0.812	0.67
	2	I am trying to understand myself better	Study 1	0.707	0.864
	3	I am trying to deeply understand the situation	Hernandez, et al (2010).	0.665	0.701
Mental Disengagement (Cronbach's α =0.773 ; CR= 0.809; AVE= 0.68)	1	I am listening to music to pass my time	Study 1	0.814	0.781
	2	I am watching movies/series to pass my time	Hernandez, et al (2010).	0.703	0.864
	3	I am spending a lot of time on social media	Study 1	0.587	0.56
Positive Reinterpretation (Cronbach's α =0.768; CR= 0.802; AVE= 0.576)	1	I am focusing on what is good in my life	Hernandez, et al (2010).	0.743	0.856
	2	I am trying to see the positive side of the situation	Hernandez, et al (2010).	0.686	0.687
	3	I try to relax or calm down	Hernandez, et al (2010).	0.557	0.724

<i>Construct</i>		<i>Measurement Item</i>	<i>Source</i>	<i>Study 2 PAF loading (n= 409)</i>	<i>Study 3 CFA loading (n= 346)</i>
Focus on Physical Activity (Cronbach's α =0.832 ; CR= 0.847; AVE=0.738)	1	I am doing relaxation exercises/ meditation/ yoga	Study 1	0.89	0.739
	2	I am doing a physical activity (walking/ exercise)	Hernandez, et al (2010).	0.684	0.963
Focus on Hobby (Cronbach's α =0.848 ; CR= 0.836; AVE= 0.718)	1	I am taking up a new hobby	Rokach, A. (2005)	0.846	0.858
	2	I am spending more time for my hobbies	Study 1	0.707	0.835

Note: CR Composite Reliability; AVE Average Variance Extracted; PAF Principal Axis Factoring; CFA Confirmatory Factor Analysis.

up a new pastime to deal with the situation. The reliability of each set of items was measured using Cronbach's alpha. The Cronbach's alpha ranged between 0.768 and 0.924, exceeding the suggested cut-off value of 0.70 [86].

Table 3 presented the correlation between constructs. The correlations varied from 0.03 to 0.39, with no pair of measures exceeding the value of 0.60. This suggests no severe multicollinearity problems among research variables [87].

4.2. Study 3: Confirmative Factor Analysis

4.2.1. Reliability assessment and construct validation

Study 3 was done on 270 students to assess the reliability and validity of the refined scale. In this study, Confirmative Factor Analysis (CFA) was performed to evaluate the dimensionality of latent variable using AMOS 20.0. The statistics were satisfactory and after eliminating two items, the scale was confirmed having eight dimensions.

4.2.2. Dimensionality and reliability

The fit statistics were satisfactory ($\chi^2(df=222) = 389.087$, $p = 0.000$, CFI = 0.956, TLI = 0.946, RMSEA = 0.053, SRMR = 0.0553) and confirmed the dimensionality of the 24-item (see Table 2), eight-dimension scale. Composite reliability (CR) and average variance extracted (AVE) were estimated for each of the eight dimensions. The computed CR for each scale is greater than 0.70 and the AVE for each construct is greater than 0.50, indicating the scale's good reliability [88].

4.2.3. Construct validity

Factor loadings of all 24 items were statistically significant and were 0.6 or above, confirming their convergent validity. Discriminant validity was assessed using Fornell and Larcker's [89] criterion, where the square root of each construct's AVE was greater than its highest correlation with any other construct.

5. DISCUSSION

The analysis has indicated a clear factor structure with eight factors (destructive coping, focus on academic activity, turning to religion, planning, mental disengagement, positive reinterpretation, focus on physical activity, and focus on hobby) which will be valuable for identifying rich quantitative and qualitative

Table 3
Factor Correlation Matrix

	1	2	3	4	5	6	7	8
1								
2	-.064							
3	-.102	.273**						
4	.036	.228**	.311**					
5	.152**	.075	.225**	.385**				
6	-.188**	.231**	.470**	.328**	.205**			
7	.045	.399**	.262**	.272**	.148**	.237**		
8	.059	.387**	.213**	.327**	.297**	.295**	.391**	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 4
Discriminant Validity of Study 3

	1	2	3	4	5	6	7	8
1 Destructive coping	0.774							
2 Focus on Academic Activity	-0.086	0.868						
3 Turning to Religion	-0.274	0.602	0.87					
4 Planning	-0.006	0.518	0.554	0.75				
5 Mental Disengagement	0.103	0.268	0.284	0.624	0.825			
6 Positive Reinterpretation	-0.29	0.58	0.75	0.674	0.393	0.759		
7 Focus on Physical Activity	-0.087	0.474	0.529	0.41	0.182	0.48	0.859	
8 Focus on Hobby	0.04	0.505	0.42	0.553	0.489	0.525	0.38	0.847

Note: Bolded diagonal values represent squared root of AVE values, and off-diagonal values represent the correlations of each construct with other constructs

information about the nature of the coping strategies used. Although some of the factors identified were mentioned in the earlier studies, this study has added to the literature by providing a clear structure to indicate the applicability of the factors in the current scenario. In addition to accumulating factors and statements from different studies, this study contributes its own grouping and identifies statements that have not been incorporated under a factor earlier. It must be mentioned here that this research is unique considering the current pandemic situation under which it was investigated as well as the target population it focused. The reliable estimates have found to be exceeded than the previously reviewed measures.

The findings of this research will highly benefit mental health practitioners, counselors and academicians to develop strategies to understand students' perspective to intervene and guide them so as to enhance their mental health condition. Youth suffering from distress, anxiety, depression, or other problems during the pandemic can be counseled regarding spirituality, power of positivity and the families can be engaged more to help them cope with the situation. Practitioners might also identify and caution against destructive coping styles. Continuing with the regular academic activities might also be an effective strategy to divert the minds of the students from the worrying updates of the current situation. Facilitating the target group with recreational opportunities and/or avenues to pursue their creative aspirations can help them survive better. Lastly, the youth can be encouraged to do activities to enhance their physical fitness and mental wellbeing through TV programs or online videos.

6. CONCLUSIONS

This study though offered promising results, did have its limitations. As the data was collected through an online survey, the sample size though sufficient, did not have enough participation from people who had limited internet access. It can also be argued here that the ability of the eight factors which are indeed important classifications is not sufficient to represent all of the coping behaviors used by youth during the pandemic. There is a potential for a future study through conducting a regression analysis in order to determine the impact of the factors.

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