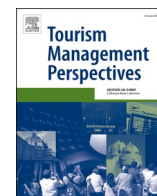




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The impact of boredom on the attitudes and behaviours of edutourists during the era of COVID-19 and the mediating role of psychological distress

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ABSTRACT

This research examined the effects of boredom on the attitudes and behaviours of international students and their indirect psychological impact during the COVID-19 pandemic. A partial least square method (PLS-SEM) was used to analyse the data taken from a sample of 260 students. As a result of this research, a significant negative effect of boredom on edutourists' attitudes as well as an insignificant positive effect on their behaviours was determined; furthermore, the students' attitudes did not affect their behaviours. A positive connection between boredom and psychological distress was significant. Additionally, results demonstrated that psychological distress did not mediate the aforementioned relationships. Nevertheless, the results of the multi-group analysis unearthed different responses among male and female students during the COVID-19. The study provides practical and theoretical implications, limitations, and areas for further research.

1. Introduction

The outbreak of COVID-19 has had multiple devastating effects on human lives and the world economy (Abdalla, Said, Ali, Ali, & Chen, 2021; Sharma, Thomas, & Paul, 2021; Sönmez, Apostolopoulos, Lemke, & Hsieh, Y. C. (Jerrie), 2020). The educational sector was affected as several international destinations sought out by students for study closed their universities to allow for social distancing and lockdown (Mishra, Gupta, & Shree, 2020; Palau, Fuentes, Mogas, & Cebrián, 2021). Even though the closure of the universities did effectively mitigate the impacts of COVID-19, it deprived these internationally-travelling students, or edutourists as they will be called throughout this paper, gathering and socializing privileges (Chen, 2020). As a result, edutourists, who remained in their dormitories and homes experienced boredom. Accordingly, data from several parts of the world indicated that the pandemic caused boredom (BRD) among people and students, in specific. In fact, a survey involving 2135 participants by the Chinese authority reported boredom as a leading emotional aspect experienced by the Chinese during the pandemic (Chao, Chen, Liu, Yang, & Hall, 2020). Likewise, more than 70% of participants investigated during the outbreak showed signs of significant psychological distress, the unpleasant feeling of low arousal a person can experience during a specific period and caused by external factors (Sundström, Hjelm-Lidholm, & Radon, 2019). Several studies demonstrate the negative sentiment of

edutourists' behaviours and experiences caused by boredom. Accordingly, the available data on boredom underscored its adverse outcomes (Banerjee & Rai, 2020) in the learning environment; boredom had been favourably correlated with low academic performance and studies termination. Thus, the empirical findings demonstrate that boredom can be a general condition displayed by edutourists of all ages, ethnicities, and educational levels (Tze, Daniels, & Klassen, 2016).

The advent of the Internet in the 1990s created avenues for e-education (Palvia et al., 2018). Some universities started designing their courses to teach online. Thus, online education is not a new phenomenon, it was a priority of universities in the pre-pandemic era (Allen & Seaman, 2015). Empirically, the available pre-pandemic data highlight that by 2016, the USA alone had already registered over 6 million students in online education (Palvia et al., 2018). Similar to the current situation, the pre-COVID online education was characterized by a lack of physical interaction among students. However, unlike the COVID-19 period, the pre-COVID era allowed for students to intermingle with their families and friends and did not result in boredom or psychological distress among e-learners.

Previous studies in edutourism have highlighted the impact of boredom on edutourists (Nett, Goetz, & Daniels, 2010; Nett, Goetz, & Hall, 2011; van Tilburg & Igou, 2017). For instance, Nett et al. (2010) came up with strategies for students to deal with boredom. Cognitive techniques, cognitive-avoidance strategy, and behavioural avoidance

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strategy are highly appropriate to help students reduce boredom. Furthermore, the methods assist edutourists in coping with boredom more openly with their instructors. On the other hand, [Nett et al. \(2011\)](#) estimated that continued research on boredom could improve intervention programs to help students deal with boredom more efficiently. Also, [van Tilburg and Igou \(2017\)](#) considered boredom an annoyance feeling that caused harmful effects; thus, boredom is a sentiment primarily associated with adverse outcomes.

Overall, the literature on edutourism has focused primarily on issues such as students' service quality, behavioural intention ([Rahimzhan, Avci, & Eluwole, 2020](#)), implementation intention and behavioural intention ([Seow & Choong, 2021](#)), attitudes towards university, word of mouth, satisfaction, and revisit intention ([Deyà-Tortella, Mendez-Duron, & Rejón-Guardia, 2021](#)). While these studies provide valuable insights and excessive contribution on boredom and edutourism yet, little has been done to deal with the effects of boredom on the attitude and behaviours of the edutourists. Therefore, using PLS-SEM and Multi-group Analysis (MGA), the present study develops a conceptual model to assess the direct impacts of boredom (BRD) on attitude (ATT) and behaviour (BVH) and its indirect effects through psychological distress (Psc). Thus, the present research examines the attitude and behaviour of edutourists towards online learning during the lockdown caused by COVID-19. Accordingly, the present study contains three main goals:

- i. examine the effect of boredom on edutourists' attitudes and behaviours,
- ii. scrutinize the mediating role of psychological distress on the relationship between boredom and (a) edutourist attitude and (b) edutourist behaviour, and
- iii. assess the different attitudinal and behavioural responses among female and male edutourists.

Therefore, the present study encompasses six sections. The first section, which is a comprehensive introduction to the topic, explains the background of the subject and its direction; the second section is a literature review that makes an in-depth critical examination of previous literature on edutourism, edutourists, boredom, psychological distress, attitude, and behaviour; the third section, is a theoretical framework and hypothesis development, presents a research model and the relationship between the variables that will be tested through data collected from edutourists; the fourth section is a methodology, some of the matters relating to the research philosophy, data collection, survey instruments, and strategy of analyses; the fifth section contains results and analysis, and the last one contains a discussion and conclusions.

2. Literature review

2.1. State of boredom

Boredom is a feeling of low arousal and negative emotions connected with a negative attitude towards an action ([Eastwood, Frischen, Fenske, & Smilek, 2012](#)). It is a useful emotional defence that may safeguard one against the feeling of having no meaning ([Barbalet, 1999](#)). Boredom leads to unpleasant feelings limiting effective engagement in a task. Boredom can lead to decreasing physical activity, cause a person self-doubt, lead to complacency, and alter his/her sense of time ([Line & Hanks, 2019](#)). Moreover, it is identified as an individual's unwanted experience of having an unfulfilled desire to be engaged in a comforting environment and leads to feelings of being stuck in an undesirable and unimportant present ([Fahlman, Mercer-Lynn, Flora, & Eastwood, 2013](#)). Furthermore, boredom was one of several significant effects of the recent COVID-19 pandemic.

The study of boredom dates back about three decades ago. Most of the studies focus on evaluating the impact of general boredom on students' behaviours. As such, research focusing specifically on academic boredom has received more attention recently ([Tze, Klassen, Daniels, Li,](#)

[& Zhang, 2013](#)). [Pekrun, Goetz, Titz, and Perry \(2002\)](#) connect students' feelings of boredom to academic learning, classroom instruction, and success. Furthermore, the data from medical experts disclosed the pandemic's role in boredom, namely that when the former increases, the latter also increases. Thus, boredom has a significant impact on behaviour ([Laato, Islam, Farooq, & Dhir, 2020](#)); nevertheless, social isolation and distancing have been viewed as effective ways to slow transmission during pandemics ([Shin & Kang, 2020](#)).

Recent studies demonstrate the positive association between social isolation and boredom ([Banerjee & Rai, 2020](#); [Chen, 2020](#)). In fact, the minimal social interaction imposed by a lockdown affected mental and psychological well-being, leading to a different level of negative mental stress ([Brooks et al., 2020](#)). Other unfavourable outcomes of the phenomenon include depression, eating disorders, and aggression. In a nutshell, boredom caused unpleasant experiences and undesired emotions that affected the daily life of edutourists ([van Tilburg & Igou, 2017](#)).

Nevertheless, boredom is also a facet of modern life, especially in highly organized and advanced western economies in which people separate their leisure time and working time. One can argue that leisure time is perceived as an active and productive block of time while boredom, permeating the human psyche, can be perceived as wasted time because it lacks satisfying activity. [Johnsen \(2016,p.1405\)](#) argues that "even if people may always have been bored, 'boredom' is not a universal feature of human existence. Rather it is a culturally and historically contingent construct that arises in Western culture along with the management and organization of time, which time is of the essence, obviously, is also the subject of the modern work organization." Stated differently, time, whether leisure time or working time, has become a 'human resource', which – like time itself – during the 19th century became a commodity of the production process ([Johnsen, 2016,p.1408](#)). The Covid-19 has intensified the situation among the students by adding concern about families, difficulties with online courses, and financial concerns ([Pat-Horenczyk et al., 2021](#)).

2.2. Psychological distress

Psychological distress refers to disagreeable emotions, mood, or feelings influencing people's work ([Piccoli & De Witte, 2015](#)). The pandemic is associated with recent increases in psychological distress worldwide ([Hasan & Bao, 2020](#)). As such, one's perceptions of the effects of COVID-19 have an impact on both positive or negative sentiment ([Han, Lee, Kim, & Ryu, 2020](#)). Furthermore, psychological distress is connected to edutourists' negative views of their living environment and shapes how they react to other people. Other researchers have examined the link between distance and interactive education and their effects on edutourists' psychological distress ([Han et al., 2020](#)). The closure of educational institutions dramatically affected student psychology, especially those away from their families ([Hasan & Bao, 2020](#)). Studies have underscored the relationship between pandemic knowledge and psychological distress and discomfort ([Juan et al., 2020](#)). In fact, it has been shown that a lack of enjoyment in classrooms significantly contributed to a student's level of psychological distress ([Dewaele, Magdalena, & Saito, 2019](#)).

Student psychology during the COVID-19 pandemic depended heavily on the change in their usual daily routine during that challenging period. The closure of universities left students desperate due to the complete change in their social life. A survey conducted by [Aristovnik, Keržič, Ravšelj, Tomažević, and Umek \(2020\)](#) at the advent of COVID-19 has revealed that students worldwide communicate with their families online at least once a day. These frequent communications were of considerable psychological help for them.

Institutional closure prompted the search for an alternative solution to education by taking online classes. [Cao et al. \(2020\)](#) conducted a study and found that about 25% of students were experiencing psychological distress caused by long-distance learning. Presumably, the

insufficient teaching techniques by some instructors and students' inability to adequately cope with online education were partial causes of psychological problems, especially since both students' and instructors' awareness and technological skill determine the success of online education (Hasan & Bao, 2020). Thus, the lack of the two aforementioned aspects would degrade lecturers' performance, prompting negative attitudes towards online learning behaviours. Accordingly, online learning during the pandemic has been a significant predictor of psychological distress (Rohman, Marji, & R. M., & Nurhadi, D., 2020).

2.3. Edutourists' attitudes

Attitude is defined as the subjective view of an individual and how one perceives and regulates his/ her behaviours (Xu & Fox, 2014). Studies have identified attitude as an essential element that positively or negatively influences an individual towards assessing a specific phenomenon (Ajzen, 1985). Furthermore, the formation of attitude lasts longer, and once moulded, it often acts as a sensitive predictor of a person's actions (Bae & Chang, 2020). Moreover, the Edutourists' attitudes towards online education and the educational destination of choice by the edutourist were important factors influencing edutourists' decisions to travel during the virus outbreak (Hasan & Bao, 2020). In fact, the coronavirus had a massive impact on people (Gössling, Scott, & Hall, 2020); including students, instructors, and higher education institutions worldwide.

The pandemic caused higher learning institutions worldwide to close their campuses to allow for social distancing that noticeably affected students' attitudes (Toquero, 2020). Due to pandemic uncertainty, educational institutions, including schools, colleges, and universities, immediately embraced online learning for students of all academic fields, and this choice caused a great deal of boredom among students (Kaur, Kumar, & Kaushal, 2021). This embracing of online education posed a challenge to students (Hasan & Bao, 2020). Furthermore, most instructors and students were not ready to deal with online education. Because of some flaws, several criticisms have been raised against online education by a considerable number of international students (Chen et al., 2020). According to Roth et al. (2020), during video learning amid the COVID-19, students earned lower grades, which prompted dissatisfaction among the majority of them (Droit-Volet et al., 2020). Nevertheless, Lancaster and Cotarlan (2021) reported better results among some students during the pandemic.

Lee, Koh, Lai, and Hwang (2020) reported that a significant number of students faced psychological problems during the pandemic. Despite these many problems, 83% of those learners could not get any psychological assistance to cope with a highly negative attitude. Also, experimental research revealed an elevated level of boredom among students with an ensuing demand for material to adjust their behaviours during the outbreak (Geana, Wilson, Daw, & Cohen, 2015).

2.4. Edutourist behaviours

The advent of COVID-19 most definitely had an impact on edutourist's behaviours. Indeed, Edutourists' risk behaviours varied based on complex psychological characteristics, cultures, and lifestyles (Reisinger & Mavondo, 2005). Presumably, students experienced high anxiety during the COVID-19 pandemic (Brooks et al., 2020). Equally, students experienced severe negative emotional behaviours such as uncertainty, doubt of academic year loss, the fear of being separated from their loved ones, and resulting stress, especially among the international students. These negative emotional and behavioural responses produced anxiety responses, like feelings of fear, sadness, and nervousness, which affected their enthusiasm for studying. (Brooks et al., 2020). Online education, in particular, fuelled stress among edutourists due to the absence of interactions among them; after all, students had to work from their homes due to the strict prohibitions against classroom study.

Previous studies highlighted the effects of a pandemic on student

behaviours (Akdeniz et al., 2020; Carpenter, Witherby, & Tauber, 2020). Akdeniz et al. (2020) reviewed the negative consequences experienced by university students exposed to unproductive online teaching approaches (Carpenter et al., 2020). Furthermore, the pandemic was linked with individual behavioural change (Laato et al., 2020). In Turkey, where social isolation was very high, people experienced protective behaviours. As such, 38% of Turkish students worried about their health; 44% stated that they had a moderate fear level. Also, 88% were anxious about their relatives contracting the coronavirus (Ahorsu et al., 2020). In addition, Cornine (2020) revealed students' behavioural changes due to pandemics.

2.5. A theoretical framework and hypothesis development

The present study makes use of by the arousal theory (AT) (Reisenzein, 2017) and the theory of planned behaviour (TPB) (Ajzen, 1985). First developed by Berlyne (1960), the arousal theory, also known as activating theory, focuses on the relationship between the environmental cue and how the former triggers the individual emotional reactions. The theory states that people need external activities and inspiration to make their bodies feel comfortable (Reisenzein, 2017). It also stipulates that when the magnitude of arousal is minimal, people are comforted. However, as the degree of arousal escalates, people are depressed. Based on this theory, we argue that the increase of boredom during the pandemic lockdown triggered psychological distress among students. The literature has confirmed that the coronavirus outbreak caused significant boredom among students, and the former was aroused (Chao et al., 2020).

In addition to the theory of arousal, the theory of planned behaviour (TPB) posits that attitude determines people behaviours. The attitude is the outcome of social constructions and social fabrics (Ajzen, 1985). The theory has a multipurpose function as it has been employed in many disciplines such as marketing, tourism, and medicine (Ferdous, 2010). This study by Ferdous (2010) applied TPB and suggested that during the COVID-19, edutourists' attitudes were a significant predictor of students' behaviours towards online learning.

2.5.1. Boredom → Edutourist attitude → Edutourist behaviours

Arousal theory suggests that when arousal is higher, people tend to be distressed, and while it is lower, they are comforted. The COVID-19 imposed a lockdown, a measure taken to prevent people from spreading disease (Uğur & Akbıyık, 2020). As such, the lockdown and social distancing created boredom among edutourists due to lack of action. Students had to remain in their homes and dormitories. Social interaction was minimal or completely absent. Previous literature involved boredom in many adverse psychological outcomes (Children and structured holiday camping: Processes and perceived outcomes, 2020). Indeed, trait boredom was associated with psychological difficulties. Nevertheless, some recent studies suggested that boredom constituted a pivotal signal to change behaviours by encouraging individuals to find a more satisfying situation (Line & Hanks, 2019). In the lockdown context, one may wonder what influence this feeling of boredom had on developing prosocial behaviours or compliance with the containment situation in the short- or long-term (Droit-Volet et al., 2020). Based on the discussion, we argue the following hypotheses:

H1. : Boredom affects negatively on the attitudes of edutourists, and.

H2. : Boredom affects the behaviours of edutourists negatively.

2.5.2. Edutourist attitude → Edutourist behaviours

The theory of planned behaviours suggests that attitude is the primary determinant of people behaviour (Ajzen, 1985). COVID-19 had an impact on online education worldwide. Following several governments' lockdowns, students had to practice social distancing and isolate themselves from social interaction. Therefore, many of the international students experienced boredom, which ultimately affected their attitudes

and behaviours. As a result, their attitude towards online education changed and influenced their actions towards the same. It is suggested that an increase in boredom had considerable effects on individual attitudes that negatively affected people’s behaviours (Line & Hanks, 2019). The attitude of the edutourist towards travel, or edutourism, had much to do with whether he/she evaluated edutourism positively or negatively (Heesup Han, 2020). Based on the above arguments, we draw the following hypothesis:

H3. : Attitude has a significant favourable influence on students’ behaviours.

2.5.3. Boredom → psychological distress

According to the arousal theory, an individual’s excitement or depression is determined by the magnitude of arousal one receives (Reisenzein, 2017). As such, when the level of arousal escalates, people feel depressed and bored. On the other hand, the lower the arousal level, the more relaxed the people become (Reisenzein, 2017). In this study, COVID-19 as an arousing element has caused numerous negative factors such as lockdown and social distancing. Students restricted to interact had to remain in their rooms and houses without seeing their friends and colleagues. As a result, these students experienced boredom, which eventually affected their psychological emotions. Previous literature has underscored boredom’s effects on psychological distress during the COVID-19 epidemic (Chao et al., 2020). Thus, we conclude with the following hypothesis:

H4. : Boredom has a positive relationship with psychological distress.

2.5.4. Psychological distress → edutourist attitudes → edutourist behaviours

Based on the arousal theory (Reisenzein, 2017), the COVID-19 pandemic aggravated the boredom among students at higher learning institutions. The boredom evoked their psychological emotions to the extent of making them distressed. Therefore, psychological distress was considered a meaningful mediator between boredom and international students’ attitudes and behaviours. Students experienced anxiety and loneliness, even while still required to meet their educational responsibilities. Previous studies have highlighted the relationship between psychological distress and people attitudes and behaviours during the pandemic (Han et al., 2020). Therefore, based on the above theoretical underpinnings (TPB) and the findings of the previous research, we formally hypothesize that:

H5. : psychological distress harms edutourist attitude, and.

H6. : psychological distress harms edutourist behaviours.

Fig. 1 represents the conceptual framework for this study.

3. Methodology

3.1. The measurements

3.1.1. Measures

This study adopted measures from previous studies. All measurements were of the first order and ranked according to the 5 Likert scale (1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, 5 = strongly agree). The instrument included five sections with four latent variables: boredom, psychological distress, attitude, and behaviours(See Table 1). The last part included the demographic profile of the respondents. Firstly, based on the study by Chao et al. (2020), measures for boredom were adopted. Secondly, psychological distress was assumed from Hasan and Bao (2020). Thirdly, measures for attitude were adopted from the study of Bae and Chang (2020). Finally, the behaviours were adopted from Neuburger and Egger (2020). See Appendix A. for the survey questionnaire.

3.2. Participations and procedure

A study of edutourism was conducted in Cyprus during the COVID-19 pandemic. The data were collected from 260 international students composing 44 different nationalities studying under various faculties at the Eastern Mediterranean University. Before distributing a questionnaire to the students, two highly qualified academicians were consulted to assess its objectivity and statistical worth. Based on the recommendations from the experts, the survey was modified. Consequently, a pilot study with 20 questions was conducted to establish the questionnaire’s reliability by assessing Cronbach alpha and the loading factors. The results of the pilot test led to the modifications of some indicators. A final field survey was distributed to the students using the snowball sampling procedure. The sampling technique was preferred because students were in lockdown, so the researcher could not know their locations. Out of 290, 276 questionnaires were completed and returned. After cleaning the data, only 260 surveys were found to be usable for this study. Additionally, as the study aimed to collect the response from

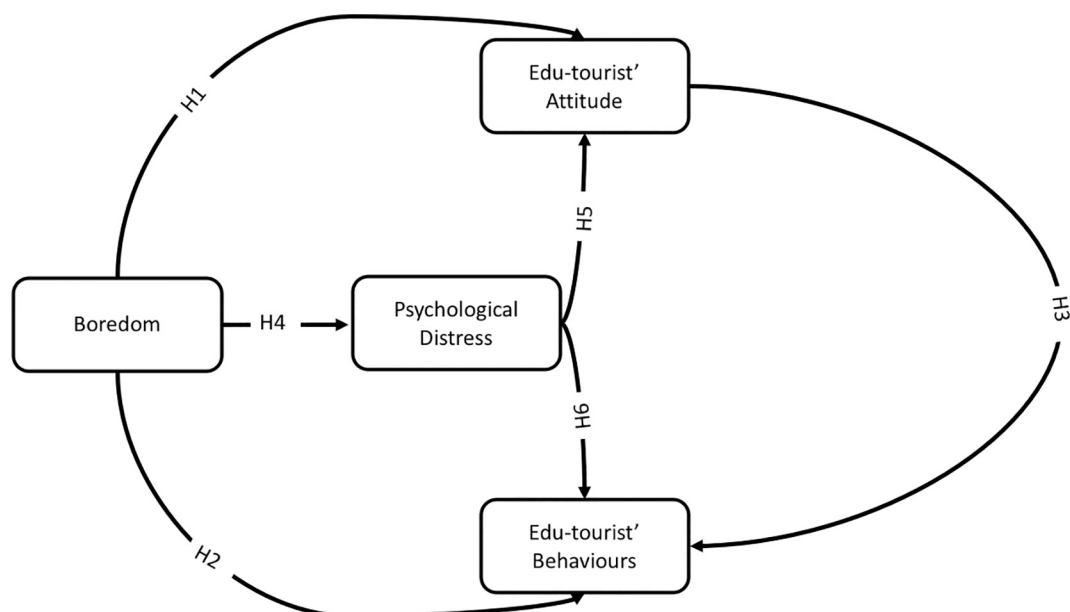


Fig. 1. Conceptual model.

Table 1
Measure of constructs.

| Construct | Abbreviation | Items |
|-------------------------------|--------------|---|
| Boredom (BRD) | BRD1 | Often, I find myself at loose ends, not knowing what to do |
| | BRD2 | Many of the things I do are repetitive and monotonous |
| | BRD3 | Much of the time, I just sit around doing nothing |
| Psychological distress (Psyc) | Psyc1 | I often feel tired out for no good reason |
| | Psyc2 | I often feel nervous |
| | Psyc3 | I often feel so nervous that nothing could calm me down |
| | Psyc4 | I often feel hopeless |
| | Psyc5 | I often feel restless or fidgety |
| | Psyc6 | I often feel so restless that I could not sit alone |
| | Psyc7 | I often feel depressed |
| | Psyc8 | I often feel that everything is not an effort |
| | Psyc9 | I often feel so sad that nothing could cheer me up |
| | Psyc10 | I often feel worthless |
| Edutourist attitude (ATT) | ATT1 | Online education is useful |
| | ATT2 | Online education is valuable |
| | ATT3 | Online education is beneficial |
| | ATT4 | Online education is attractive |
| Edutourist behaviours (BHV) | BHV1 | My learning behaviours are likely to change due to coronavirus |
| | BHV2 | If I study in another country, it depends on how the media is reporting about that country |
| | BHV3 | Currently, I would prefer to study in countries with reported cases of coronavirus |
| | BHV4 | Currently, I would prefer to cancel my studies in countries with no reported cases of coronavirus |
| | BHV5 | Currently, I would avoid studying outside |
| | BHV6 | Currently, I would avoid face to face studies |
| | BHV7 | I would avoid any contact with other students in my university |

edutourists only, the survey included one screening question to determine their qualification. As a result, the responses from students from Cyprus were not counted in this study.

The common method variance was assessed. As such, following the recommendations by Podsakoff, MacKenzie, Lee, and Podsakoff (2003), both procedural and statistical remedies to overcome the threats of common method bias in our data set were considered. First, our questionnaires had information such as “this study is voluntary so that you may withdraw from it any time,” the anonymity of the respondents is assured”. Moreover, some of the items were negatively worded, and the study’s objective was hidden as a technique to ensure psychological separation (Podsakoff, MacKenzie, & Podsakoff, 2012).

In addition to the procedural remedies, statistical remedies were also established. As such, Harman’s single factor using Pearson correlation with varimax was undertaken. The results of Harman’s test demonstrated only 36.494% of the total variance, which was lower than the 50% required to confirm that our data was suffering from the problem of the common method variance (Podsakoff et al., 2003). Therefore, the results of the test confirmed that our study did not have a severe problem of common method bias.

4. Results

4.1. Respondents’ characteristics

The study presents several demographic characteristics of the respondents including age, education level, gender, residence, nationality, and marital status. Accordingly, the study sample included 260

respondents, out of whom 116 (44.6%) were female and 144 (55.4%) were male respondents (edutourists). Among these, 178 (68.5%) were less than 25 years old, 72 (25.7%) were between 25 and 34 years old, and 10 (3.8%) respondents were between 35 and 45 years old. There was no respondent older than 45 years old. In terms of education, 136 (52.3%) respondents were undergraduate students and 72 (27.7%) respondents were postgraduate students. As for residency, 136 (52.3%) were living at home, 108 (41.5%) were living in a dormitory, and 16 (6.2%) were living in other places. The married status of the participants was as follows: 243 (93.5%) were single, and 17 (6.5%) were married. As mentioned above, 44 nationalities were represented, including Nigerians, Iranians, Moroccan, Palestinians, Turkish Egyptians, Jordanians, Syrians, Zimbabwean, Cameroonians, to mention only a few. Tables 2 and 3 show the demographic characteristics of the respondents.

4.2. Measurement model

As demonstrated in Table 5, the assessment of the measurement model was conducted by using the partial least square (PLS-SEM). First, the relationship between the focal variables and their related items was assessed. PLS was selected because of its high capacity to analyse a small sample size and the abnormally distributed data. Next, the validity of the items was measured using the Cronbach alfa, whereby, after dropping off some indicators, the Cronbach alfa of the remaining constructs was greater than 0.70; therefore, the validity of the instruments was confirmed by using the Cronbach alpha. Then, the convergent validity was established using both factor loadings and the average variance extracted (AVE) of the constructs (Ghobehei, Sadeghvaziri, Ebrahimi, & Afshar Bakeshloo, 2019). Next, all items with the factor loading below the level of 0.50 were deleted (Hair, Sarstedt, Ringle, & Gudergan, 2017). Thereafter, the discriminant validity was evaluated using the Fornell and Lacker criterion, where the square root of AVE was greater than the correlations of the constructs (Fornell & Larcker, 1981). Then this was corroborated by the hetero-trait-mono-trait ratio (HTMT), where the results showed all ratios to be less than one at a 97.5% confidence interval (Risher & Hair, 2017). Table 4 demonstrates the discriminant validity.

4.3. Structural model and hypothesis testing

In assessing our model, the path coefficients and their significance values and R² values were used. The model fit was evaluated using SRMR, which was found to be 0.066, below the cut of the level of less than 0.080 (Hair et al., 2017; Hair, Howard, & Nitzl, 2020). Next, we conducted a blindfolding analysis to assess the predictive capacity of our model. The value of Stone Gaesser’s (Q²) of all predicted variables in the

Table 2
Respondents’ profile (n = 260).

| | Frequency % | Percentage |
|-----------------------|-------------|------------|
| Age | | |
| Less than 25 | 178 | 68.5 |
| 26 and older | 82 | 29.5 |
| Gender | | |
| Male | 144 | 55.4 |
| Female | 116 | 44.6 |
| Marital status | | |
| Single | 243 | 93.5 |
| Married | 17 | 6.5 |
| Education | | |
| Undergraduate | 188 | 72.3 |
| Postgraduate & above | 72 | 27.7 |
| Residence | | |
| Home | 136 | 52.3 |
| Dormitory | 108 | 41.5 |
| Other places | 16 | 6.2 |

Table 3
Respondent's nationalities.

| S/N | Nationality | Frequency | Per cent | S/N | Nationality | Frequency | Per cent |
|-----|-------------|-----------|----------|-----|---------------|-----------|----------|
| 1 | Nigerian | 35 | 13.5 | 23 | Lesotho | 3 | 1.2 |
| 2 | Iranian | 23 | 8.8 | 24 | Saudi Arabian | 2 | 0.8 |
| 3 | Moroccan | 22 | 8.5 | 25 | Ghanaian | 2 | 0.8 |
| 4 | Palestinian | 19 | 7.3 | 26 | Russian | 2 | 0.8 |
| 5 | Turkish | 18 | 6.9 | 27 | Sudanese | 2 | 0.8 |
| 6 | Egyptian | 14 | 5.4 | 28 | Algerian | 2 | 0.8 |
| 7 | Jordanian | 14 | 5.4 | 29 | Swaziland | 2 | 0.8 |
| 8 | Syrian | 11 | 4.2 | 30 | Sierra Leone | 2 | 0.8 |
| 9 | Zimbabwean | 9 | 3.5 | 31 | Eritrean | 2 | 0.8 |
| 10 | Cameroonian | 8 | 3.1 | 32 | Pakistani | 2 | 0.8 |
| 11 | Lebanese | 6 | 2.3 | 33 | South African | 2 | 0.8 |
| 12 | Yemen | 6 | 2.3 | 34 | Malawian | 2 | 0.8 |
| 13 | Iraqi | 6 | 2.3 | 35 | Bengali | 2 | 0.8 |
| 14 | Libyan | 6 | 2.3 | 36 | Kyrgyzstan | 2 | 0.8 |
| 15 | Chadian | 4 | 1.5 | 37 | Indonesian | 1 | 0.4 |
| 16 | Zambian | 4 | 1.5 | 38 | French | 1 | 0.4 |
| 17 | Malian | 3 | 1.2 | 39 | Chinese | 1 | 0.4 |
| 18 | Kazakh | 3 | 1.2 | 40 | Botswanan | 1 | 0.4 |
| 19 | Somalian | 3 | 1.2 | 41 | Congolese | 1 | 0.4 |
| 20 | Tanzanian | 3 | 1.2 | 42 | Afghan | 1 | 0.4 |
| 21 | Tunisian | 3 | 1.2 | 43 | Togolese | 1 | 0.4 |
| 22 | Kenyan | 3 | 1.2 | 44 | Rwandans | 1 | 0.4 |

Table 4
Assessment of discriminant validity.

| | Boredom | Edutourist attitude | Edutourist behaviour | Psychological distress |
|--|--------------|---------------------|----------------------|------------------------|
| The square root of the AVE | 0.792 | | | |
| Boredom | | | | |
| Edutourist attitude | -0.257 | 0.879 | | |
| Edutourist behaviour | 0.201 | 0.050 | 0.788 | |
| Psychological distress | 0.608 | -0.184 | 0.268 | 0.793 |
| The hetero-trait-mono-trait ratio (HTMT) | | | | |
| Boredom | | | | |
| Edutourist attitude | 0.316 | | | |
| Edutourist behaviour | 0.241 | 0.163 | | |
| Psychological distress | 0.731 | 0.203 | 0.270 | |

model was greater than 0: ATT = 0.048, BHV = 0.046, and Pscy = 0.228, which confirmed the accurate predictive capacity of the data not used in the model (Hair et al., 2020). Finally, using a subsample of 5000, Bootstrapping was undertaken to assess the results of the structural and hypothesis tests. Bootstrapping was selected to deal with the fact that the original data did not conform to a normal distribution of data (Xu & Fox, 2014). Table 6 highlights the results.

The bootstrapping test of the hypothesis found BRD to have significant adverse effects on ATT with $\beta = -0.230$ and $p = 0.009$; therefore, the H1 was accepted. The results hypothesis H2 demonstrated no significant impact by BRD on BHV with $\beta = 0.086$ and $p = 0.498$; therefore, H2 was rejected. H3 found an insignificant effect by ATT on BHV with $\beta = 0.115$ and $p = 0.424$; therefore, H3 was also rejected. The final hypothesis, H4, revealed a significant positive impact by BRD on Pscy with $\beta = 0.608$ and $p = 0.000$; therefore, H4 was also rejected.

A mediation effect was assessed by running a bootstrapping of 5000 subsamples—the assessment was made on path coefficients, T values, and their respective significances in direct and indirect relationships. Following the suggestion by Zhao, Lynch, and Chen (2010), we considered both direct and indirect effects in assessing the mediation. The analysis of the hypothesis path coefficient and their respective

significance are shown in Table 6. Also, the mediation results showed that psychological distress does not mediate either the link between boredom and edutourist attitude or between boredom and edutourist behaviour.

4.4. The multi-group analysis

The multi-group analysis was run to examine different responses of COVID19 among international students. Gender was considered as a crucial categorical variance to assess the different reactions among the edutourists. Therefore, the study data were divided into two groups; the first group was gender, including Male (144) and female (116). Before running MGA, we established a measurement invariance (MICOM) (Henseler, Ringle, & Sarstedt, 2016). The MICOM encompassed three steps conducted sequentially, where each step had specific requirements to move to the next step.

At the first step, configurational invariance was analyzed. The former was critical to interpret the homogeneous parameterization and its estimation. As such, the measurement model, structural model, and the algorithm of the investigated models had to match the integrity of the different groups and study sample. As demonstrated in Table 8, the results of the measurement and structural models and employed algorithms met the above-required criteria to allow us to move to the next level.

At the second step, we assessed compositional invariance (C). The former refers to a coefficient of indicator evenness. A MICOM procedure using 5000 permutations through PLS-SEM was conducted. As shown in Table 7, the value scores (C) were close to 1, which confirmed the compositional invariance. Likewise, the results of the compositional invariance implied that the variances occurred in all constructs of our model. The third step involved the assessment of the equality between the composite mean values and the variance. The permutation test results in the third step demonstrated the presence of evenness patterns between the variance and the mean for some of the constructs (see Table 7).

Finally, the MGA was conducted (see Table 8). The path coefficients, t-value, and their respective significances using p-values were assessed. Male versus female students were compared. Thus, the comparison in gender suggested that psychological distress in male students positively affected their behaviours with a p-value equal to 0.009; for the female students, the psychological distress had an insignificant negative impact with $p = 0.757$. The female attitude had a positive impact on behaviours

Table 5
Measurement model.

| Composite indicator | Loading | | | Chronbach's alpha | | | Composite reliability | | | AVE | | |
|------------------------|---------|-------|-------|-------------------|-------|-------|-----------------------|-------|-------|-------|-------|-------|
| | All | Fe | Ma | All | Fe | Ma | All | Fe | Ma | All | Fe | Ma |
| Boredom | | | | 0.709 | 0.750 | 0.672 | 0.834 | 0.856 | 0.815 | 0.627 | 0.665 | 0.596 |
| BRD1 | 0.836 | 0.832 | 0.838 | | | | | | | | | |
| BRD2 | 0.732 | 0.781 | 0.692 | | | | | | | | | |
| BRD3 | 0.805 | 0.831 | 0.779 | | | | | | | | | |
| Attitude | | | | 0.855 | 0.852 | 0.859 | 0.911 | 0.910 | 0.913 | 0.773 | 0.771 | 0.778 |
| ATT1 | 0.897 | 0.892 | 0.877 | | | | | | | | | |
| ATT3 | 0.915 | 0.886 | 0.930 | | | | | | | | | |
| ATT4 | 0.823 | 0.856 | 0.835 | | | | | | | | | |
| Behaviour | | | | 0.750 | 0.810 | 0.703 | 0.824 | 0.844 | 0.733 | 0.622 | 0.649 | 0.519 |
| BHV5 | 0.869 | 0.659 | 0.876 | | | | | | | | | |
| BHV6 | 0.529 | 0.970 | 0.263 | | | | | | | | | |
| BHV7 | 0.911 | 0.755 | 0.849 | | | | | | | | | |
| Psychological distress | | | | 0.915 | 0.919 | 0.906 | 0.931 | 0.934 | 0.924 | 0.629 | 0.642 | 0.604 |
| Psyc2 | 0.730 | 0.738 | 0.747 | | | | | | | | | |
| Psyc3 | 0.747 | 0.786 | 0.779 | | | | | | | | | |
| Psyc4 | 0.788 | 0.869 | 0.820 | | | | | | | | | |
| Psyc5 | 0.852 | 0.765 | 0.690 | | | | | | | | | |
| Psyc7 | 0.735 | 0.870 | 0.843 | | | | | | | | | |
| Psyc8 | 0.861 | 0.851 | 0.796 | | | | | | | | | |
| Psyc9 | 0.823 | 0.811 | 0.791 | | | | | | | | | |
| Psyc10 | 0.799 | 0.702 | 0.743 | | | | | | | | | |

Fe, females; Ma, males; AVE, average variance extracted.

Table 6
Path Coefficients of direct and indirect effects.

| | β | t-value | p-value | Significance |
|-------------------------|---------|---------|---------|--------------|
| Direct effects | | | | |
| H1 BRD- > ATT | -0.230 | 2.610 | 0.009 | YES |
| H2 BRD- > BHV | 0.086 | 1.678 | 0.498 | NO |
| H3 ATT- > BHV | 0.115 | 0.799 | 0.424 | NO |
| H4 BRD- > Pscy | 0.608 | 14.235 | 0.000 | YES |
| Indirect effects | | | | |
| H5 BRD- > Pscy- > ATT | -0.027 | 0.508 | 0.611 | NO |
| H6 BRD- > Pscy- > BHV | 0.144 | 1.556 | 0.120 | NO |

with $p = 0.019$, while male students had an insignificant impact with $p = 0.884$. However, the impact of boredom on psychological distress was positive significant among both male and female students with $p = 0.000$. Moreover, boredom had an insignificant positive impact on edutourists' behaviours among male ($p = 0.729$) and female ($p = 0.278$) students. Likewise, boredom had a negligible negative effect on the attitude of both genders with $p = 0.106$ for females and $p = 0.067$ for males. All results are summarized in Table 6.

5. Discussion and conclusion

Institutions of higher learning were among the many sectors heavily affected by the coronavirus pandemic. Both local and international students were impacted. As such, the present study sought to examine the direct effects of boredom on edutourists' attitudes and behaviours

Table 7
Results of invariance measurement testing using permutation.

| LVs | Step1 COIN | Step2 | | | Step3 | | | Full MI | | |
|------|---------------|-----------------------------|--------|-----|----------------------------------|-----------------|-----|---------|-----------------|------|
| | | Compositional invariance | C | | Equal mean values Equal variance | | | Diff | Cis | |
| | | | | | Diff. | Cis | | | | Diff |
| BRD | Yes | 0.998 | 0.990 | Yes | 0.267 | [-0.237, 0.244] | No | -0.002 | [-0.269, 0.265] | Yes |
| ATT | Yes | 0.997 | 0.983 | Yes | -0.006 | [-0.245, 0.242] | Yes | -0.003 | [-0.249, 0.240] | Yes |
| BHV | Yes | 0.591 | -0.043 | Yes | -0.068 | [-0.248, 0.237] | Yes | -0.001 | [-0.287, 0.273] | Yes |
| Pscy | Yes | 0.998 | 0.998 | Yes | 0.369 | [-0.244, 0.241] | No | -0.002 | [-0.273, 0.263] | Yes |

BRD, boredom; ATT, attitude; BHV, behaviour; Pscy, psychological distress; C, correlation values; Diff, difference; Cis, confidence intervals; MI, measurement invariance; COIN, configural invariance; LVs, latent variables.

Table 8
The Multi-group analysis.

| Paths | Females | | | Males | | |
|--------------|---------|---------|--------------|--------|---------|--------------|
| | Beta | T Value | Significance | Beta | T Value | Significance |
| BRD -> ATT | -0.209 | 1.615 | 0.106 | -0.221 | 1.835 | 0.067 |
| BRD-> BHV | 0.209 | 1.085 | 0.278 | 0.049 | 0.347 | 0.729 |
| BRD -> Psysc | 0.645 | 10.407 | 0.000 | 0.571 | 9.422 | 0.000 |
| ATT -> BHV | 0.319 | 2.337 | 0.019 | -0.022 | 0.145 | 0.884 |
| Physc -> ATT | -0.043 | 0.344 | 0.731 | -0.086 | 0.682 | 0.495 |
| Physc -> BHV | -0.075 | 0.309 | 0.757 | 0.360 | 2.621 | 0.009 |

The mediation analysis results highlighted that psychological distress mediated neither the association between boredom and attitude nor between boredom and behaviours. As we have seen previously, the link between psychological distress and attitude and association with behaviours was insignificant because attitude remained the same. Furthermore, studies have demonstrated that psychological distress did not mediate relationships with constructs that represent adverse outcomes. As such, the findings here comply with those in the study by [Anasori, Bayighomog, De Vita, and Altinay \(2021\)](#), where the association between workplace ostracism and work engagement was not mediated.

Moreover, the results of the multi-group analysis disclosed different responses among male and female students. While psychological distress positively affected the behaviours of male students, it had an insignificant impact on female students. It implies that male students' psychological distress during the COVID-19 triggered their behaviours towards e-learning. These results conformed with those of [Rodríguez-Besteiro, Tornero-Aguilera, Fernández-Lucas, and Clemente-Suárez \(2021\)](#), suggesting that female students perceptions of danger to COVID-19 were higher than those of male students; therefore, they put more effort into online studying than their homologous male students. Likewise, psychological distress seemed to positively affect male edutourist behaviours, while it had an insignificant negative effect on female students' behaviours. Equally, the female attitude during the COVID-19 was positively associated with their behaviours, while male students had negligible adverse outcomes. Implying that female edutourists have a high endurance level, boredom motivated them to pursue more online education. Nevertheless, the impact of boredom on psychological distress was similar among both males and female students. As such, boredom had a positive effect on psychological distress among both genders. This result was supported by [Rodríguez, Litt, and Stewart \(2020\)](#), who found the COVID-19-related psychological distress to impact both males and females. Moreover, boredom had an insignificant positive impact on edutourists' behaviours among both male and female students.

5.1. Theoretical implications

Our study makes multiple contributions to the present theory. Firstly, the study extends knowledge to the theory of planned behaviours, which maintains that attitude affects people's behaviours ([Ajzen, 1985](#)). Secondly, as the present study's findings did not significantly affect the attitude on behaviours of the students, they fault the general assumptions of the theory. Accordingly, our study's main contribution is

that the attitude's effect on behaviours depends mainly on the circumstances. This conforms with the results from [Norman, Cooper, Norman, and Cooper \(2011\)](#), in which it is argued that a person's attitude may hardly predict their behaviour in unstable contexts such as in pandemics. Thus, in the context of the COVID-19 pandemic, boredom among edutourists affected the attitudes of female students differently than that of their male counterparts. These results extend the TPB theory ([Ajzen, 1985](#)) by providing new theoretical insight on the impact of attitude on behaviour based on gender.

Secondly, the findings of this study extend the use of the arousal theory in the context of COVID-19 and edutourism. As boredom had a significant positive relationship towards psychological distress and edutourists' attitudes, one may consider boredom a situational state triggering negative emotions among higher learning institutions. Thus, our study extends its contribution to the arousal theory ([Reisenzein, 2017](#)) in the context of higher learning institutions and students. COVID-19, which can be seen as an external stimulus, is consistent with the arousal theory's tenets suggesting the environmental cue as an important trigger, leading to response through the organism. Our findings align with [Li J. et al. \(2020\)](#), who revealed that Chinese people's social interactions during the COVID-19 pandemic were minimal.

5.2. Practical implication

In addition to theoretical implications, the current study has multiple implications, practical implications for the educational institutions' policymakers, specifically universities whose stakeholders are international students. This study has three implications: firstly, different students' treatment based on their gender; secondly, the need by university policymakers to protect students from the contamination of the pandemic; thirdly, educational organizations should be prepared for unanticipated situations such as Covid-19, by providing means, and tools to overcome boredom among students in a confined environment. For instance, universities could provide online yoga classes and virtual sports to minimize the adverse effects of boredom ([Fitzgerald, Stride, & Drury, 2020; Hayes, 2020](#)).

Notwithstanding considerable research conducted in higher learning institutions, the impact of boredom on edutourist attitude and behaviour in the context of a pandemic such as COVID-19 has received little attention among the decision and policymakers in the learning institutions. Thus, this study's findings will help the decisionmakers in universities tailor their treatment to students during the pandemics and other disasters, which will lead to the implementation of online education (e-learning). Based on the present study's findings, the university officials will now know the different responses between the students based on their gender. They now understand the gender-based different attitudinal and behavioural responses during the pandemic outbreak. The policymakers will also understand which aspects affect each gender and find the potential mechanism of dealing with them.

Despite the government restrictions during the COVID-19 outbreak, students did not take them seriously. As the findings from the link between attitude and behaviours underscored, generally, the edutourists did not change their behaviours; they visited their friends and colleagues for discussions and other social interactions. Although these interactions were helpful for them to cope with online education, one may not compromise the pandemic's danger for their health and wellbeing. However, the individual group analysis from MGA discovered that female student changed their behaviours. This implies that female students were more compliant with social distancing rules and regulations than male students. For these reasons, the university policymakers could see the need to strengthen their rules and regulations to protect all students from potential infection which would aggravate the pandemic. More specifically, universities need to pay special attention to male edutourists.

5.3. Limitation and future studies

Despite numerous contributions, our study is not without limitations. Firstly, the samples of our research were collected somewhat subjectively from a specific target population of edutourists. Therefore, further research could be conducted longitudinally to substantiate the findings of this study. Another limitation was the sample size of only 260, and the study's conduct at institutions of higher learning. Further studies could replicate the examination using a large sample size and use other sectors such as hotels and restaurants to validate the present research findings. Besides, as the present study had only four variables, further analysis could apply more variables to include moderating control variables.

Contributions

- Fatima zahrae Afellat: Writing- Original draft preparation; Data collection; conceptualization and Creation of models, Development or design of methodology.
- Moh'd Juma Abdalla: Development, or design of methodology; Application of statistical, computational, or mathematical techniques for analysing and synthesizing the study data.
- Habib Alipour: Ideas; Supervision, Conceptualization; Reviewing and editing.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.tmp.2021.100885>.

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