

# Measuring Tourists' Stress in Colombia

## Abstract

This research aims to examine vacationers' perceived stress in Colombia. Based on the literature review, the following dimensions are examined: (1) transportation at the destination –including the variables lack of control, insecurity, cleanness, noise, temperature and space; (2) the conditions of the accommodation –including the variables lack of sleep, insecurity, distance to sightseeing, cleanness and the perceived quality of the room, the services and the food; and (3) the behavior and culture of the locals at the destination –including the variables language proximity, insecurity, the way the locals prepare the good, litter and noise. A quantitative research was performed, based on 651 foreign travelers in the capital of Colombia. The results show that a second-order model, which includes nine factors and three dimensions, presents the highest goodness-of-fit indices. As a part of the conclusions, this paper presents the theoretical and managerial implications of the model obtained in this research to measure tourists' stress in Colombia.

**Keywords:** stress, transportation, accommodation, culture, Colombia

## 1. Introduction

While it has been established that taking a leisure trip provides opportunities for relaxation (Chen et al., 2016), traveling can also lead to stressful situations for some tourists (Huber et al., 2018; Mackenzie & Kerr, 2013). Due to this fact, some research has analyzed how travelers handle stress when they confront various demanding situations, challenges, or threatening occurrences during their trips (Iwasaki & Mannell, 2000; Iwasaki et al., 2006; Qian & Yarnal, 2011), but these studies did not examine the factors that cause stress among the tourists.

More recent research has examined the effect of travel stress on emotional and physical wellbeing (Sheppard & Williams, 2016), the effect of stress during serious (vs. casual) leisure trips (Kim & Lee, 2018), among elder tourists (Huber, 2019) and during the tour guide-clients' interaction (Mackenzie & Herr, 2013). However, these studies use one-dimensional scales to measure overall stress, and do not differentiate among different stressors to examine the construct.

Some authors have focused on specific dimensions to measure stress in the area of tourism (e.g., Chen, 2017; Gao & Kerstetter, 2018; Noser et al., 2014; Zehrer & Crofts, 2012). These authors covered a wide number of variables to measure stress before and during the holidays, in different environments and considering specific tourists' circumstances. These prior studies have shown the difficulty of trying to create a single model to measure overall travelers' stress. Therefore, further empirical evidences are needed to examine travelers' stress in different contexts and tourism destinations (Chen, 2017; Gao & Kerstetter, 2018). This need for research is based on the fact that "*Psychological outcomes like emotions and stress are overlooked in the tourism literature*" (Jordan et al., 2019, p. 213), and that the association and effects of many constructs and variables related to stress remain unknown (Jordan et al., 2019). Empirical research in the field of tourism is especially scarce in countries of Latin America, as in the case of Colombia (Bassols, 2016; Luna-Cortés, 2018).

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The present research aims to examine vacationers' perceived stress dimensions in Bogotá (Colombia), focusing on three important dimensions that tourists value at destination (Chen et al., 2016; Huber et al., 2018): (1) mobility and transportation; (2) accommodation; and (3) the culture and behavior of the locals. To achieve this research goal, the study reviews a wide range of literature, explores potential variables related to travelers' stress at destination, and proposes alternative structure models. During the literature review, the variables directly related to stress and the variables related to travelers' discomfort during vacation are examined, since some authors suggest that discomfort during the trip can lead to travelers' stress (e. g. Abenoza et al., 2017; Chica-Olmo et al., 2018; Efthymiou & Antoniou, 2017; Friman et al., 2018; Mouwen, 2017; Wong et al., 2017). The models are analyzed, firstly, including variables related to travelers' discomfort and, subsequently, only including the variables directly related to stress in the literature. Then, confirmatory factor analysis (CFA) is used, in order to check how well the proposed models fit vacation travelers' stress at destination. The results of the CFA provides information to verify the validity and reliability of the model.

## 2. Literature review

### 2.1. Travelers' stress and discomfort: Conceptualization and theoretical models

Vacation discomfort is a mental or physical sensation of hassle due to inconveniences during a trip, while stress is tourism is defined as an emotional factor that causes tension due to undesired elements during a trip (Schuster et al., 2006). Some previous research have considered discomfort as a concept that differs from stress (Iwasaki et al., 2006). However, the majority of authors have not differentiated between these two concepts in the literature when measuring the construct (Chan, 2017; Iwasaki et al., 2006; Legrain et al., 2015).

Both stress and discomfort can have negative impacts on travelers' well-being (Chen, 2017). Past stress-related theories have scrutinized a transactional process between an individual and the environment, and extensively investigated how people handle stress when they confront various demanding situations, challenges, or threatening occurrences (Akgunduz et al., 2016; Chen, 2017; Kalyar et al., 2019; Yavas et al., 2013).

Regarding the measurement of stress, recent research has specified the importance to distinguish between tourists' stress and stress perceived by other agents in the area of tourism, such as the stress perceived by locals due to impacts of tourism at destination (Moghal & O'Connell, 2018), due to cruise tourism development (Jordan & Vogt, 2017), or the stress suffered by service providers in the area of tourism (Lin & Ling, 2018). Therefore, different scales are needed to measure stress in different contexts in the tourism arena.

Zehrer and Crofts (2012) developed a stress model focused on travelers, and indicated several travel stressors. The study consisted of 110 USA residents who reported on taking a recent vacation. This research included three different constructs that influence the overall vacation stress. The constructs were named (1) pre-trip stressors, (2) travel stressors and (3) destination stressors. Based on a review of the literature, the authors included some items to measure these constructs. However, they did not include any item related to mobility or transportation at the destination. Regarding the rest of the items to measure stress at destination, the authors include accommodation, food, weather, recreation activities, interacting with different people at destination, hours of sight and commuting to sights. As part of the conclusions, the authors pointed out important limitations in their study, and explained that future research should include different constructs and associations.

Recent research has proven that the causes of stress can vary considerably from one tourist to another, and it depends on the context. Thus, it can be problematic to try to include all the facets (before, during and after the trip) in a single model. For example, the study by Gao and Kerstetter (2018) shows that some travelers affirmed to be stressed because they had to deal with work during their vacation; for others, the travel portion of their vacation was the primary cause of their individual stress; and some tourists thought that traveling in a group caused stress. The findings by Chen (2017) recognize six factors: travel arrangements, hotel/airline preferences, travel inconvenience, difficulty maintaining a healthy lifestyle, destination concerns, and work/personal life.

Considering the different facets and the great number of variables that can influence stress during vacation, it seems necessary to focus on determine factors to examine this construct. The primary goal of this research is to analyze the stress suffered by travelers in Colombia as a tourist destination. Therefore, the study focuses on factors that affect tourists' stress at destination. The conditions of the transportation and the accommodation are two main elements that affect tourists' perception and intentions at destination, such as tourists' satisfaction and intention to revisit (Chen et al., 2016; Huber et al., 2018; Pagliara et al., 2019). Apart from these two main elements, the research examines variables associated with culture, which can have an effect across the mentioned factors, since culture can explain the interaction of the tourists with locals and service providers during transportation, accommodation and other services at the destination (Okafor et al., 2018). The next sections of the literature review focus on these three elements.

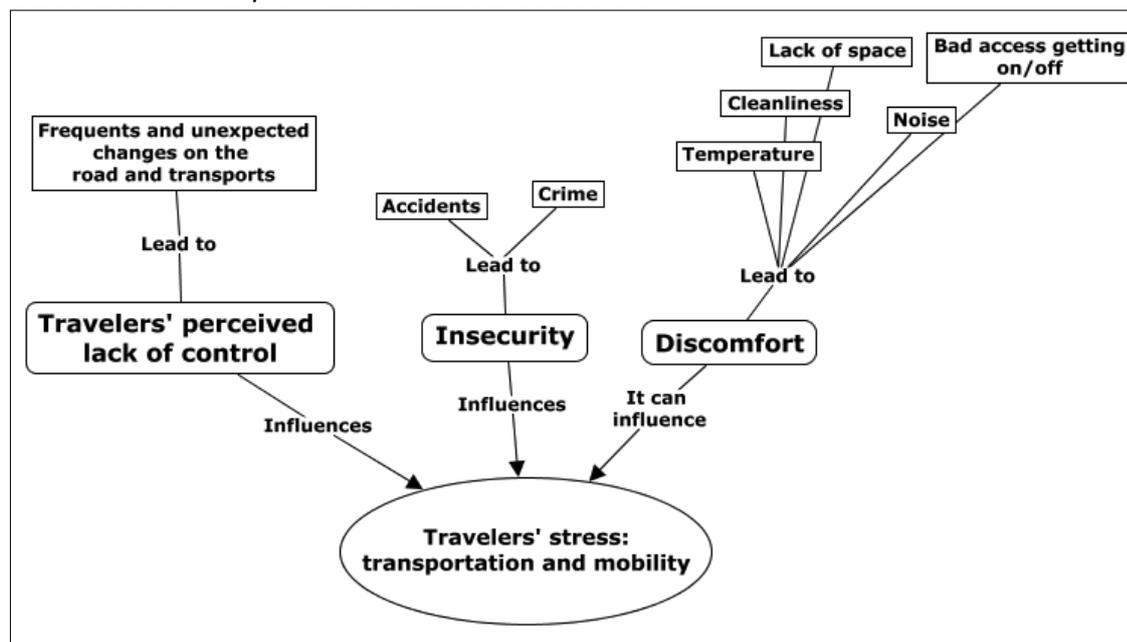
## 2.2. Mobility as a source of stress at the destination

Mobility at the destination is an important element that explains tourists' perception, behavior and intentions (Pagliara et al., 2019). Following Friman et al. (2017), traveling influences affective components, such as anger, stress and tension. This applies for travelers who use private or public transportation. Various studies have examined different transportations and its effects on stress (Huber et al., 2018; Legrain et al., 2015).

There is one major cause of stress when traveling: the measurement of control (Legrain et al., 2015). Control is linked to travel predictability. A trip is less predictable when the factors outside of a person's control occur. Without control, the travelers step out of their comfort zone, fall into new, temporary environments and find that they did not enjoy themselves during the trip (Gao & Kerstetter, 2018). When this occurs, travelers can be stressed and feel that the time away did not fulfill their positive affective expectations (Besser & Shackelford, 2007).

Figure 1 contains a graphic summary of the variables analyzed in different fields of study related to transportation that can affect travelers' stress:

**Figure 1**  
*Variables related to transportation that can influence travelers' stress*



Source: Own elaboration.

The study by Lois et al. (2018) includes security as a variable related to travelers' emotional outcomes with the transport. The authors defined this variable as the perceptions and feelings of risk and harm. Security in this context can refer to the risk levels and vulnerability of public transport systems to experience crime, disorder incidents and accidents (Lois et al., 2018).

Finally, although not in the field of stress, but in the area of travelers' satisfaction, some authors include punctuality, cleanliness, space, access-getting on/off (Chica-Olmo et al., 2018), frequency (Mouwen, 2017), behavior of the employees, reliability, information simplicity and design (Efthymiou & Antoniou, 2017), aesthetics (Friman et al., 2018), network, easiness to purchase the service (Abenoza et al., 2017), seat availability and distance walking (Wong et al., 2017). These variables are associated with the travelers' comfort, which is a construct related to a mediator of impedance (Legrain et al., 2015). Discomfort from crowding has been associated with commuting stress, especially the stress associated with public transportation. Uncomfortable heat or noise can also be seen to cause of discomfort while traveling (Legrain et al., 2015).

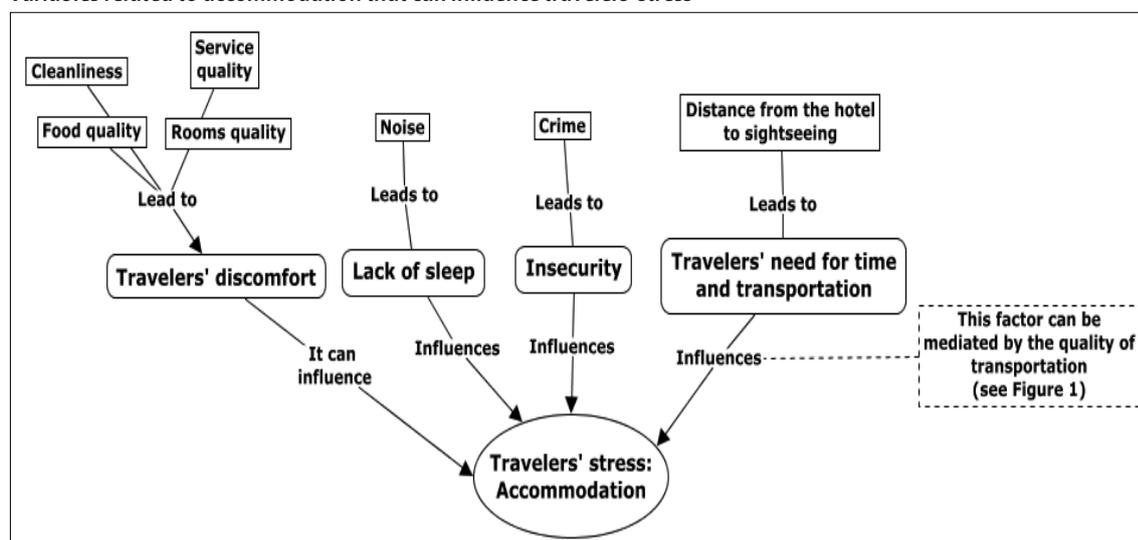
### 2.3. The condition of the accommodation as a source of stress at the destination

Various authors have analyzed the perception by tourists of different attributes of the accommodation (Akgunduz & Gürel, 2019; Zhou et al., 2014). Zhou et al. (2014) divided the characteristics of the accommodation in three levels: (1) room amenities, which includes size, cleanliness and welcoming extras; (2) hotel amenities, including availability of Wi-Fi, public facilities (lounge, lobby, pool and fitting center), dated level (old/new), noise level and entertainment facilities; and (3) food, including variety, quality, the dining environment and food service.

Radojevic et al. (2018) added that the cultural characteristics of people at the destination and the traveler's country of origin can moderate the perception by the tourists of the hotel services, mainly regarding the following attributes: location, cleanliness, rooms, service, sleep quality and price. In addition, Chen (2019) indicates that healthy menus, in-room amenities (i.e., technology, a temperature control panel, and quality of bedding and bath amenities), and convenience (i.e., distance to business sites/airport and hotel services) were considered important hotel attributes that help business travelers overcome travel-related stress.

Figure 2 contains a graphic summary of the variables analyzed in different fields of study related to accommodation that might affect the travelers' stress:

**Figure 2**  
Variables related to accommodation that can influence travelers' stress



Source: Own elaboration.

Among these attributes, and focusing on variables that directly affect travelers' stress, poor sleep is a travel-related stressor that concerns many tourists (Chen, 2017). The study by Ren et al. (2016) indicated that safety is an important factor to understand tourists' stress at the hotel, and Park et al. (2018) included the travel distance from the hotel to places of interests and activities.

Based on the conclusions of the study by Park et al. (2018), the location of the hotel and the transportation and mobility at destination are highly related. The distance of the hotel to places of interest necessarily influence the tourists' need for transportation, which has been reported as a possible cause of travelers' stress during the vacations (Gao & Kerstetter, 2018).

Following this previous studies, cleanness, service quality, rooms' quality and food quality have been analyzed in the studies of consumers' satisfaction (Zhou et al., 2014), while lack of sleep, insecurity and need for transportation is related in the study to more serious emotional out-comes (Chen, 2017; Gao & Kerstetter, 2018; Park et al., 2018).

## 2.4. The culture of the locals at the destination as a source of the tourists' stress

According to Mackenzie and Kerr (2013), when tourists go to a destination where they have to experience differences regarding their culture and life, or situations they are not accustomed to live, they might be stressed. In the context of traveling, tourists must integrate into a culturally distinct environment in which they will react with different degrees of comfort and enthusiasm (Okafor et al., 2018).

The stress motivated by cultural differences can be based on external variables, such as the language, the communication, and the surroundings, as well as some affective or cognitive factors, such as poor stress management, identity confusion and prejudice (Goldstein & Keller, 2015). The present study focuses on the external variables that can cause stress when an individual travels to a destination with a different culture. Based on the literature review, three elements seem to be the most common cause of stress at destination due to cultural differences: language, perceived risk and food.

Language proximity has been reported as a variable that can affect tourists' emotional outcomes at the destination (Okafor et al., 2018). Thus, the possibility of the tourists to understand the locals and the service providers at the destination can influence stress.

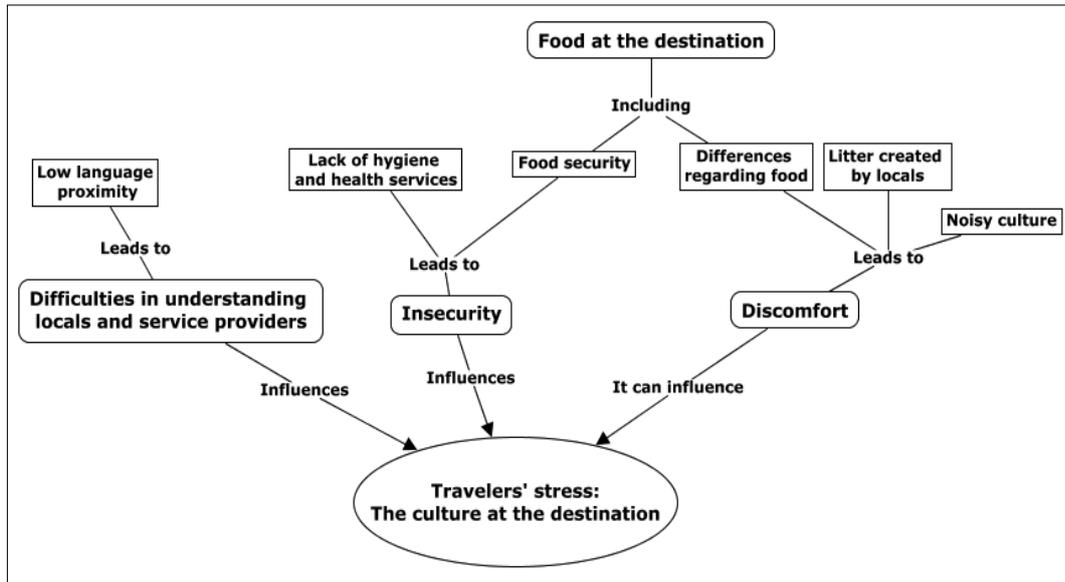
The health and hygiene perceived by the tourists at the destination can also influence tourists' emotional reaction (Jovanović et al., 2015), which means that the possibility of getting sick or feeling dirty might influence tourists' stress.

Furthermore, how and why every person obtains, processes, prepares, and eats their food depends on their culture. The food travelers acquire at the destination can affect the food security (Daskin, 2019). This means, people getting sick due to the food they ate at destination (Mackenzie & Kerr, 2013). Some tourists can get sick during the holidays due to the food they ate, or be scared to get ill, and this can be a cause of stress (Alonso et al., 2018).

Finally, the way people behave in a country can cause dissatisfaction among foreigners. For Schuster et al. (2006), litter and noise created by the locals can influence dissatisfaction perceived by some tourists. These last variables lead to travelers' discomfort, and not always lead to travelers' stress (Schuster et al., 2006). Some differences in the food, when not perceived as insecurity, can also lead to visitors' discomfort (Mackenzie & Kerr, 2013).

Figure 3 contains a graphic summary of the variables related to cultural differences that might affect the stress of the travelers:

**Figure 3**  
Variables related to the culture at destination that can influence travelers' stress



Source: Own elaboration.

## 2.5. Variables related to stress in Bogotá (Colombia)

Based on the variables that can influence traveler's stress at the destination, it can be established that the perception of crime can affect the consumer's perceived insecurity, especially in Colombia (Bassols, 2016; Luna-Cortés, 2018). The long-term conflicts lived in countries such as Colombia has influenced the perception of these tourism destinations, which has negatively affected the intention of many tourists to travel to these locations (Bassols, 2016). Colombia is still perceived by many European and USA consumers as a destination where tourists might be robbed, or suffer other bad consequences due to the levels of criminality (Luna-Cortés, 2018). Therefore, insecurity can be especially important in the present context of research.

Regarding the mobility at the destination, it has been reported that the quality of the public transports is lower in Colombia than in other regions, such as in Europe or in the USA (Hidalgo & Huizenga, 2013; Tei & Ferrari, 2018). As mentioned by Paget-Seekins and Tironi (2016), in Colombia, bus systems have poor regulations, which affect some factors as punctuality, organization and the quality of services. In addition, congestion can be observed very frequently on the roads of the big cities of South America (Hidalgo & Huizenga, 2013), and the quality of the infrastructure is also lower than in Europe and in North America (Tei & Ferrari, 2018). These factors are directly related to lack of control (Gao & Kerstetter, 2018). Therefore, perceived security and lack of control can be variables especially relevant to measure the tourists' stress due to transportation in Bogotá.

Colombia is especially famous for containing high levels of noise pollution, due to the traffic and to the culture (Casas-García et al., 2015). This can affect the lack of sleep at the hotel and, therefore, the tourists' stress (Radojevic et al., 2018).

Furthermore, Smith et al. (2017) indicated that lower levels of education, limited social capital, and lower GDP per capita explain the higher levels of food insecurity in Colombia than in other regions. These findings are supported by the study by Pérez-Escamilla et al. (2017). Thus, the quality of the food can be important to measure tourists' stress in Colombia (Alonso et al., 2018).

Finally, the level of English in Colombia, and South America in general, is still lower than other regions (Truscott, 2012), which can affect the language proximity perceived by non-Spanish-speaker tourists (Okafor et al., 2018).

All these variables are included in this research. They are analyzed and categorized into factors and difference dimensions, using the methodology explained in the following sections.

### 3. Methodology

#### 3.1. Data collection and sampling

In order to achieve the goal of the present study, a quantitative research was performed using a structured survey. The selection of the respondents was performed by a non-probability sampling trial, more specifically, a convenient sampling was used. The universe of the study was based on foreigner tourists who were having their vacations in Bogotá (Colombia). The surveys were obtained from March to August of 2018. The tourists were reached in the center of the city, while walking near some of the most famous sightseeing of Bogotá, such as the Gold Museum, *Iglesia de San Francisco*, *Iglesia de la Tercera* and *La Candelaria*.

The surveys were collected by a series of interviewers in the touristic areas of Bogotá. They administered the questionnaires individually, interacting directly with each tourist that participated in the study. The questions were asked by the interviewer in English. Subsequently, the answers by the participant were written in the questionnaire by the interviewers themselves.

First, the interviewers explained the purpose of the study, gave information about the institution that organized it and explained the study goals. Then, the tourists were asked if they were willing to participate in the study. If they wished to participate in the study, three filter questions were asked, to ensure that all the respondents were non-Spanish speaker foreigners, that they only used the legal public transportations to move in the city during their stay, and that they had stayed in a hotel during their visit. Given the goals of this research, these were preconditions to participate in the study. If some respondents did not meet these prerequisites, they could not continue compiling the survey, which included the measures of the variables examined in this research (see section 3.3. Measures) and the questions related to demographics.

Following this procedure, a pretest was conducted using convenience samples of 151 individuals, to check whether the measurement items showed internal consistency. The Cronbach's alpha values of the dimensions ranged higher than 0.80, which indicated internal consistency. Subsequently, 1.000 tourists were asked to answer the questionnaire. More than the 50% of the tourists who were asked accepted to participate in the study. As a result, 653 surveys were collected. Due to the absence of information in some questions of the questionnaire, 1 of these 653 surveys could not be considered for the analysis. Hence, 652 valid surveys were finally obtained.

#### 3.2. Measures

The measurement of stress in this research consists of 20 items. The questionnaire was accordingly developed. The participants answered every item on a 7-point Likert scale. Table 1 shows the items of the scale. As it can be observed in Table 1, from these 20 items, 9 items are based on the literature of travelers' stress, while 11 are based on the literature of satisfaction, which can affect tourists' discomfort, and it was proposed that discomfort could affect travelers' stress.

**Table 1**  
*Dimensions, variables and items on the scale*

Dimensions	Variables	Items
Transportation	Lack of control	<ul style="list-style-type: none"> <li>• There were too many and unexpected changes while traveling inside the city that I got stressed</li> </ul>
	Insecurity	<ul style="list-style-type: none"> <li>• I was scared that I could get robbed while using a transport in the city and that made me stressed</li> <li>• I felt that the quality of the transports and the way they drive could lead to an accident and that made me stressed</li> </ul>

**Table 1 (continued)**

Dimensions	Variables	Items
	Discomfort	<ul style="list-style-type: none"> <li>• The transports were not clean enough and that made me anxious and stressed</li> <li>• I felt the ambiance was too noise in the transports and that made me anxious and stressed</li> <li>• The temperature in the transports was not right and that made me anxious and stressed</li> <li>• There was not enough space to get on and off as well as inside the transports and that made me anxious and stressed</li> </ul>
Accommodation	Lack of sleep	<ul style="list-style-type: none"> <li>• I could not sleep well in the hotel and that made me tired and stressed</li> </ul>
	Insecurity	<ul style="list-style-type: none"> <li>• I felt stressed in the hotel because I did not feel secure enough</li> </ul>
	Distance	<ul style="list-style-type: none"> <li>• The distance from the hotel to tourist sightseeing was too long, which made me stressed</li> </ul>
	Discomfort	<ul style="list-style-type: none"> <li>• The quality of the room was so poor that made anxious and stressed</li> <li>• The quality of the service at the hotel was so poor that made anxious and stressed</li> <li>• The hotel was not clean enough and that made me stressed while being there</li> <li>• The quality of the food at the hotel was so poor that made anxious and stressed</li> </ul>
The culture at the destination	Language proximity	<ul style="list-style-type: none"> <li>• It made me stressed not to be able to communicate with locals and service providers at the destination</li> </ul>
	Insecurity	<ul style="list-style-type: none"> <li>• I felt anxious due to the lack of hygiene on the street and other places like restaurants</li> <li>• I was scared that I could get robbed by some locals and that made me stressed</li> </ul>
	Discomfort	<ul style="list-style-type: none"> <li>• The big difference in the way the locals prepare and present the food made me stressed</li> <li>• The litter created by locals made me stressed</li> <li>• The noise created by locals made me stressed</li> </ul>

Source: Own elaboration.

### 3.3. Participants characteristics

At the end of the questionnaire, the respondents gave information about their gender, age, country of origin, study level, marital status and the job situation. According to this information, 49% of the respondents were men and 51% were women. The age of the tourists varied considerably, but 48% of the respondent belonged to the Generation Y (also known as Millennials, born between 1980 and 2000) and 52% belonged to the Generation X (born between 1965 and 1980). Regarding the country of origin, 43% of the sample came from the United State of America, 20% from Italy, 15% from France, 11% other countries of Europe (Germany, Portugal, Greece and the UK), and 11% were from other countries (Japan, Australia and Canada).

When it comes to the marital status, 48% of the respondents were married, 39% were not married but had a boyfriend or a girlfriend, and 13% of them were single. More than the 95% of the sample who either was married or had a boyfriend/girlfriend traveled with their partner on this trip. Regarding the study level, the 67% of the sample were undergraduate, 17% had finished high school and 16% had only finished primary school. Only the 11% of the sample was unemployed.

All participants traveled to Bogotá by plane from their countries and all of them used some public transportation more than once during their stay in the city. It is important to notice that there is no metro in Bogotá. The only mass transport in the city is called "*Transmilenio*", and although it has private roads, which no other vehicle can use, they share all intersections with the rest of the vehicles and it is extremely crowded.

Finally, none of the tourists who participated in the study was robbed or suffered any type of crime or accident during their stay in Bogotá –nor did anyone with whom they were sharing the trip–. This can be important, since the security is measured in the present research as part of travelers' stress. Thus, the possibility of suffering crime or an accident is based on perception, and not on experience of direct assault.

### 3.4. Data analysis

Different factor models were examined in the following section, based on the variables identified during literature review. CFA was conducted to examine the results, using the covariance matrix and maximum likelihood estimation, with AMOS of SPSS.

The primary analyses focused on the goodness-of-fit indices of the models. Chi-Squared test, RMSEA, GFI and AGFI were examined during the analysis of the results. In order to accept good fit, these indices should be higher than a series of values recommended in the literature (Kline, 2005): NFI > 0.90; NNFI > 0.90; CFI > 0.90; IFI > 0.90; GFI > 0.90; AGFI > 0.90; RMSEA < 0.05: good fit; from 0.05 to 0.08: acceptable; > 0.08: poor fit. Once the most appropriate structure was verified, the reliability and the validity of the instrument was analyzed.

## 4. Results

### 4.1. Goodness-of-fit indices for alternative models

As it can be observed in Table 2, none of the models presented acceptable goodness-of-fit indices when including all the variables considered during the literature review. This is when the variables associated in the literature with travelers stress and the variables associated with discomfort are all included.

**Table 2**  
*Goodness-of-fit indices for alternative models: Including the variables related to DISCOMFORT*

Goodness-of-fit indices	First-order uncorrelated factor model	First order correlated factors	Second order
Chi-square	916.129	688.908	688.908
Degrees of freedom (df)	170	167	167
Normed fit index (NFI)	0.614	0.710	0.710
Comparative fit index (CFI)	0.658	0.761	0.761
Incremental Fit Index (IFI)	0.661	0.763	0.763
Goodness-of-fit index (GFI)	0.605	0.650	0.650
Adjusted goodness-of-fit index (AGFI)	0.512	0.560	0.560
Root mean square error of approximation (RMSEA)	0.171	0.144	0.144

Source: Own elaboration.

As shown in Table 3, the goodness-of-fit indices improve considerably when only the variables associated with travelers' stress (not discomfort) are included. That is, when the model focuses on lack of control and perceived insecurity for traveling and mobility; lack of sleep, perceived insecurity and distance from the hotel to tourist sightseeing for accommodation; and the language proximity and perceived risk due to the culture of the locals at the destination. Among the proposed models, the first-order correlated factors model equals the second-order model, and both present higher perceived goodness-of-fit indices than the first-order uncorrelated factor model.

**Table 3**  
*Goodness-of-fit indices for alternative models: Not including the variables related to DISCOMFORT*

Goodness-of-fit indices	First-order uncorrelated factor model	First-order correlated factors	Second-order
Chi-square	139,643	46.059	46.059
Degrees of freedom (df)	27	24	24
Normed fit index (NFI)	0.828	0.943	0.943
Comparative fit index (CFI)	0.855	0.972	0.972
Incremental fit index (IFI)	0.857	0.972	0.972
Goodness-of-fit index (GFI)	0.844	0.942	0.942
Adjusted goodness-of-fit index (AGFI)	0.740	0.892	0.892
Root mean square error of approximation (RMSEA)	0.167	0.078	0.078

Source: Own elaboration.

## 4.2. Measurement model validation

This section presents the analysis of reliability, convergent validity and discriminant validity of the scales used in the study. The results are shown in Table 6. The first columns indicate the factor loading of every item and the T-value also regarding every item. The three last columns of Table 4 show the Cronbach's alpha of every scale, the composed reliability index and average variance extracted.

**Table 4**  
*Reliability and convergent validity*

Factor	Indicator	Load	Robust t	Cronbach's $\alpha$	CR	AVE
Transportation	Transport1 ( <i>Lack of control</i> )	0.95**	16.589	0.896	0.90	0.78
	Transport2 ( <i>Insecurity</i> )	0.84**	15.352			
	Transport3 ( <i>Insecurity</i> )	0.82**	13.997			
Accommodation	Accommodation1 ( <i>Lack of sleep</i> )	0.80**	11.056	0.893	0.89	0.85
	Accommodation2 ( <i>Insecurity</i> )	0.92**	12.649			
	Accommodation3 ( <i>Distance</i> )	0.84**	11.778			
Culture	Culture1 ( <i>Language proximity</i> )	0.64**	5.356	0.749	0.75	0.60
	Culture2 ( <i>Insecurity</i> )	0.80**	5.476			
	Culture3 ( <i>Insecurity</i> )	0.68**	6.160			

Source: Own elaboration.

As it can be seen in the final part of Table 4, the convergent validity is demonstrated, since all the items were found to have significant factor loadings over 0.60 (Nunnally & Bernstein, 1994). All Cronbach's alphas were above the recommended value of 0.70 (Nunnally & Bernstein, 1994). The composed reliability is also observed in Table 4 and, for all values, these indexes were over the recommended 0.70 (Fornell & Larcker, 1981). Finally, the average variance extracted (AVE) values were over 0.50 (Fornell & Larcker, 1981). This information indicates that the reliability and the convergent validity of the scales can be accepted.

Subsequently, Table 5 shows the two methods used to measure the discriminant validity of the scales. As it can be observed, none of the 95% confidence intervals for correlation estimations between the pairs of factors contained the value "1" (Anderson & Gerbing, 1988). Secondly, the table shows how the variance shared between each pair of constructs (squared correlation) was below the corresponding variance extracted indexes (Fornell & Larcker, 1981). This means that discriminant validity can be accepted.

**Table 5**  
*Discriminant validity*

	Transport	Accommodation	Culture
Transport	<b>0.78</b>	(0.20-0.48)	(0.11-0.43)
Accommodation	0.12	<b>0.85</b>	(0.54-0.89)
Culture	0.07	0.51	<b>0.60</b>

Source: Own elaboration.

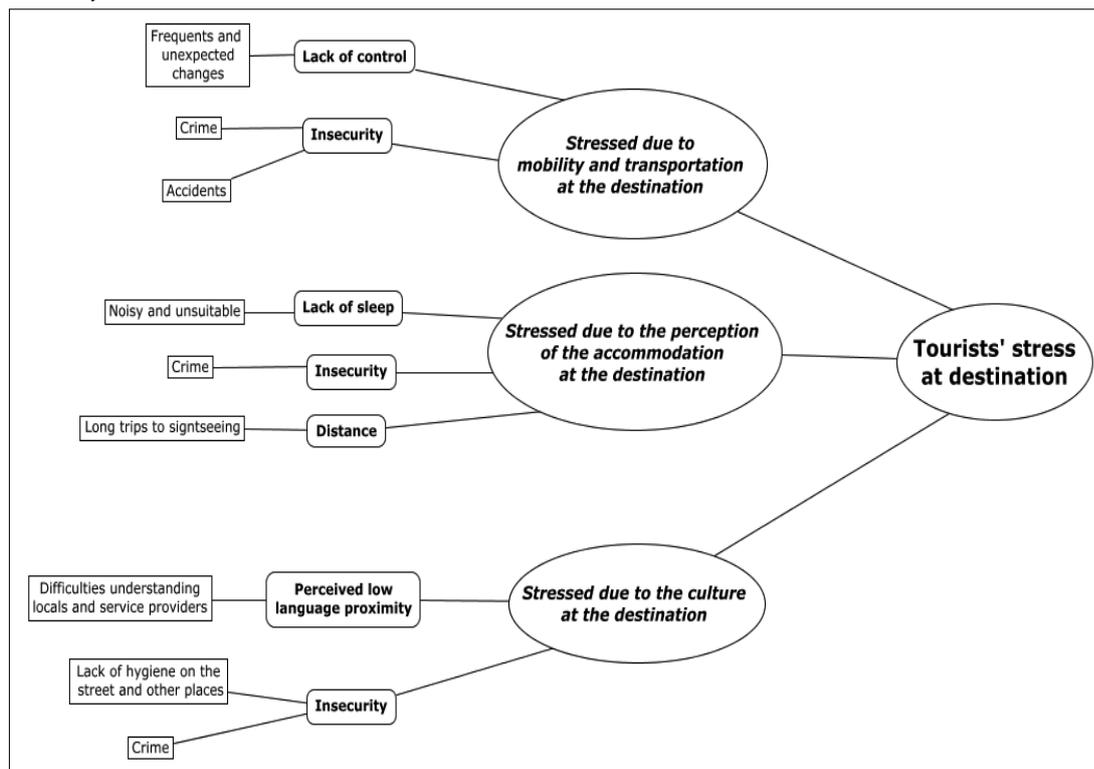
## 5. Conclusions

The present research examined three dimensions that can affect travelers' stress during their trip to Bogotá: transportation, accommodation and culture. Based on the results of the present research, it can be established that the lack of control, due to frequent and unexpected changes on the road can affect stress. Also, the perceived risk or insecurity, due to possible accidents on the road and the possibility to get robbed while traveling, were the variables related to travelers' stress due to transportation and mobility at the destination.

In addition, the lack of sleep in the hotel, the insecurity felt while staying in it and the distance to sight-seeing were the variables that formed the construct related to travelers' stress due to the conditions of the

accommodation. Finally, the lack of language proximity, hygiene and insecurity were the variables that formed the construct related to travelers' stress due to the culture of the locals at the destination. Figure 4 presents the set of variables that were finally confirmed to measure travelers' stress in Bogotá:

**Figure 4**  
**Summary of variables related to travelers' stress in South America**



Source: Own elaboration.

This research has some limitations. The scope of this study is narrow. First of all, because the findings of this study are limited to the geographical where the research took place. Therefore, these findings cannot be extrapolated to any type of destination. For example, while the perception of crime can be a stressor in Colombia, this variable might be less relevant in other destinations, such as European countries. Thus, future research should consider the stressors for tourists during vacations in other destinations.

Also, the study did not consider the type of tourism experience sought by each specific traveler (cultural, adventure, dark tourism, etc.). There could be some variables that affect tourism stress in connection with the type of tourism experience sought in Colombia. This fact can open interesting lines of research.

All participants were having their vacations in Bogotá. It would be interesting to examine if the variables analyzed in the present research, and the results obtained, are similar in other countries and cities of South America. In addition, no differences were measured regarding the country of origin of the tourists. Perhaps, tourists from Europe could feel more stressed due to some factors than USA travelers and vice-versa.

Finally, the study did not connect stress with other constructs, such as tourists' satisfaction, revisit intention, intention of WOM or intention to created content in social media. The examination of these relationships would add information for the analysis of stress felt by tourists in Colombia.

## 6. Theoretical and managerial implications

When comparing the results of the present research with previous empirical models that measure travelers' stress, a series of theoretical contributions are observed. First, the model by Zehrer and Crofts (2012) did not include transportation as a source of stress. In addition, this prior research used a sample of US individuals who come back from different destinations to measure three facets of the trip (before traveling, at destination, and post-trip stressors). These facts were indicated as limitations in their research. The present study focused on one facet (stress at the destination), it used a larger sample, and the fieldwork was performed at destination while the tourists were having their vacations.

Other previous studies that measured travelers' stress, using a similar method as the one performed in the present research, did not include transportation or culture (Chen, 2017; Gao & Kerstetter, 2018; Noser et al., 2014). Thus, the present research adds new knowledge to the literature on stress among travelers, including these important elements.

In addition, this research includes an important variable that has been overlooked in previous studies: insecurity (Lois et al., 2018). The research by Lois et al. (2018) measured this variable. The authors indicated that insecurity among travelers is related to crime, disorder incidents and accidents. However, when the authors examined this construct in their study, they measured overall perceived security ("*you feel secure in the transfer and waiting areas during the day, evening/night*"). The results of the present research show that the perception of insecurity in Bogotá can be measured based on (1) the possibility to experience crime and (2) the possibility to suffer an accident while traveling. Therefore, the present research adds new findings regarding the measurement of security by travelers in foreign countries, which might be an important variable in future studies.

Regarding the importance of the examined variables for the tourism in Colombia, tourism companies and public institutions should consider the influence of the perceived crime among foreign travelers. This seems to be a problem that tourists observe when walking on the street, using a public transportation and while staying in a hotel. Thus, institutions and companies should improve the image of the country, and reduce the possibility of crime directed to tourists, who can benefit the tourism industry, inject capital in the nation and create positive WOM, face to face or on the internet.

The conditions of the roads and the traffic can lead to the perception of lack of control and the possibility to suffer accidents. Thus, improving the quality of the roads and the driving by locals and service providers will not only create a benefit for the city in general, but it will offer a more pleasant tourism experience to foreign travelers.

Regarding the accommodation, one of the major factors that affects visitors' stress is the lack of sleep due to noises in places near the hotel. Therefore, some hospitality brands in Colombia can focus their competitive advantage on the promise of a quiet stay, especially at night, for foreigner visitors. This factor could be regulated internally by a policy in the hotel, directed to the employees' behavior. In addition, hotel brands that intend to expand in Colombia need to consider the location of the hotel, avoiding to construct in areas in the city that are noisier.

In addition, companies that offer services to foreigners need to be especially careful with the hygiene. Foreign visitors can talk badly about the brands, and the destination, if they feel the ambiance was dirty, since this is a factor that influences their perceived stress.

All these factors can be especially stressful for foreigners if they are not capable to communicate properly with the service providers. They will not be able to ask for a service that covers their needs if they are not understood when they make their requests, and they might not be able to complain about some of the factors that make them unsatisfied or stressed. The incapacity to communicate with locals in Colombia can be particularly stressful for foreign visitors when they have serious demands. For example, when they suffer an accident at

the destination, when they get ill, or if they get lost. Thus, it is important that companies that offer services to foreigners (hotels, restaurants, some well-positioned franchises, etc.) include among the staff people who speaks English, which will surely help to improve the tourism experience of foreign visitors in this country.

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