

Repositório ISCTE-IUL

Deposited in *Repositório ISCTE-IUL*:

2023-10-03

Deposited version:

Accepted Version

Peer-review status of attached file:

Peer-reviewed

Citation for published item:

Correia, A., Moro, S. & Rita, P. (2023). The travel dream experience in pandemic times. *Anatolia*. 34 (3), 373-388

Further information on publisher's website:

[10.1080/13032917.2022.2041444](https://doi.org/10.1080/13032917.2022.2041444)

Publisher's copyright statement:

This is the peer reviewed version of the following article: Correia, A., Moro, S. & Rita, P. (2023). The travel dream experience in pandemic times. *Anatolia*. 34 (3), 373-388, which has been published in final form at <https://dx.doi.org/10.1080/13032917.2022.2041444>. This article may be used for non-commercial purposes in accordance with the Publisher's Terms and Conditions for self-archiving.

Use policy

Creative Commons CC BY 4.0

The full-text may be used and/or reproduced, and given to third parties in any format or medium, without prior permission or charge, for personal research or study, educational, or not-for-profit purposes provided that:

- a full bibliographic reference is made to the original source
- a link is made to the metadata record in the Repository
- the full-text is not changed in any way

The full-text must not be sold in any format or medium without the formal permission of the copyright holders.

The travel dream experience in pandemic times

Abstract

This study was developed to understand how tourists feel after dreamed travel experiences ended up cancelled. The orchestra model that considers experiences as an intermingled process was applied to analyse the negative feelings' tourists experienced during these pandemic times. Through web scraping, over 40 thousand comments from 600 threads discussing the pandemic impact on tourists' inability to concretize their dreams were extracted from the TripAdvisor forum. Those comments were subjected to data mining techniques, including the generation of topic modelling and analysis of sentiment scores across continents vis-à-vis reported cases and fatalities. Results suggest that despite the disillusion for not being able to travel tourists are comprehensive and mostly concerned with the health of their peers.

Keywords: coronavirus; travel dreams; pre-travel experience; orchestra model; data mining.

Introduction

Tourist behaviour is a complex interaction of many influencing elements that are represented in the orchestra model, from which the holidays' experiences is only one fraction of the overall tourism experience (Pearce and Wu, 2016). Tourism experience is made of three main stages: the pre-trip, the trip and the post trip (Correia, 2002). This research focus on the pre-trip experiences, stage where dreams and expectations are formed (Pearce, 2013), namely expectations that tourists are willing to confirm during the trip to remember later (Correia, 2002). The confirmation of their expectations shapes their behavioural intentions that are influenced by tourists' feelings, emotions, and attitudes before and during their holidays

(Sparks, 2007). The pandemic reduced the tourism experience to the pre-trip stage, most of the travels scheduled simply did not happen, due to the imposed travel restrictions.

The impacts of this crisis from both economic and social perspectives (Gössling et al., 2020) as well as emotional clues of airline cancellations leading to worry and angry emotions (Jiang et al., 2020) were brought to the discussion. In this vein, Kock, Nørfelt, Josiassen, Assaf and Tsionas (2020) added to the understanding of the relationship between the pandemic and tourists' psyche, by suggesting that ethnocentrism, xenophobia and crowdedness influences perceptions of contagion, whereas behavioural patterns of travellers, travel insurance and loyalty mitigate the perception of contagion and consequently the risk of travelling. It is also true that the way destinations and tourists deal with cancellations shape future behavioural intentions (Chew and Jahari, 2014).

Moreover, Ryan (2000) argued that rewarding and positive experiences are critical to tourism development, and there are very few studies about elicit emotions when the service fails (Nawijn & Biran, 2019). Accordingly, Larsen (2007) also argued that the assessment of tourists' experiences relates to what they remember and how they feel. In this case, whereby the experience stopped at the pre-trip, thorough research it is needed to understand how tourists deal with a tourism experience that ends at the dreaming (pre-trip) stage. This research focused on pre-trip stage assumes that dreaming and packaging for holidays is also an experience and this experience is hindered if at the end tourists are not able to travel and they face uncertainty about what to do, being this the underlining rationale for this research. Grounded in the orchestra model the conceptual model of this research is built on the assumption that experience is to be measured in a composite and integrated way where emotions change in different settings and over time (Pearce, 2013). This articulated way to measure experience resembles an orchestra where all the musicians play to a certain end (Pearce, 2013). The model was previously applied to study on-site experiences of Chinese

Millennials (Pearce, 2013), to measure paranormal tourism experiences (Pharino et al., 2018), and even to understand hospitality education (Pearce & Zare, 2017).

In understanding this pre-trip stage as an experience, this paper aims to understand how tourists react to cancellations or postponement of their holidays, considering the five components of the orchestra model proposed by Pearce (2011, 2013): sensory, affective, cognitive, behaviours and relationships. Since an optimistic perspective was adopted, the context of the cancelled tourism experiences was added in order to contribute to building knowledge on how tourism managers may respond to tourists in order to mitigate the evaluation they do of their impossibility to enter in the trip stage of their holidays, whereby their perceptions act as moderators for revamping tourism in those places. This facet is a field where a research gap is clearly identified (Ma et al., 2013). This research uses the comments left by tourists worldwide in TripAdvisor's forum, posts that truly exhibit evidence of feelings, emotions, cognition, and attitudes tourists verbalize about their planned tourism experiences. Additionally, this research brings some insightfully evidences of how tourists react to unexpected and unprecedented events being those results important to the development of scientific literature on the stage of dreaming and planning holidays.

Literature review

Tourist Behaviour is mostly related to living experiences, and this makes all the difference because as Pine and Gilmore (1999:3) advocate "experiences are as distinct from services, as services are from goods". An experience implies emotions and feelings, which are not of great importance in goods and that has attracted little attention from researchers of consumer behaviour literature so far, but it is a rather critical factor in the tourism field. Before travelling, people put great effort into collecting information about the tourist destination and day dream for weeks, months, even years, with their holidays and their travel experiences. Tourists plan in advance their travels and fantasise about their experiences just before leaving

home and during travelling because tourists interact with the destination in a mutual influence process which demands great involvement of the participant (Pearce, 2005). This interaction mechanism led to the adoption of the orchestra model.

The orchestra model considers several traits of tourist responses to the external stimulus of a tourist experience. The main idea of this model comprising five components (sensorial, affective, cognitive, behavioural, and relationship traits) is that all these components contribute simultaneously to tourists' responses (Pearce, 2011). The analogy with an orchestra comes to illustrate that all these five components moderate the assessment of tourists' experiences, with a harmonic intervention, where all the five components intervene in a very harmonic way. Even knowing that the cancellation or postponement of tourists' travels consist in a non-event, for the purpose of this research, we considered all the five dimensions of this model, as we assume that tourism experiences start long before the on-site experience and last long after the on-site experience is over (Pearce, 2005), being the pre-trip also an experience.

Sensory components

An individual perception is built from sensory experiences acquired through the five senses (i.e., vision, sound, scent, taste, and touch) (Oliveira et al., 2019), and tourist experiences need to be assessed by their senses. The literature has been fruitful regarding sensory experience in tourism, with empirical studies covering a wide range of environments and contexts (e.g., Agapito et al., 2014). Indeed, sensory marketing has been given increased attention in the last few years (e.g., Loureiro et al., 2013; Ali & Ahmed, 2019) since it is seen as marketing engaging consumers' senses and affecting their perception, judgment, as well as behaviour (Krishna, 2012).

Affective components

Affective components mostly rely on emotions. The endeavour to find emotion categories was kept throughout decades, with the first contribution being given by Russel (1980) who proposed a circumplex model of affects. Later, Gray, Watson, Payne, and Cooper (2001) showed that emotions, moods, and temperaments play an important role in all the events of our lives. The dimensional approach considers positive or negative valence as well as the intensity of emotions (Bagozzi & Pieters, 1998; Guerreiro et al., 2015) whereas the categorical approach describes emotions mostly based on the emotions wheel put forward by Plutchik (2001). More recently, Nawijn & Biran (2019) emphasized the importance of the negative emotions in tourism. Jiang et al. (2020) demonstrated that worry and anger moderate an unpleasant experience of flight cancellations as it happened during the pandemic. In this unprecedented time, it is assumed that the current context makes people more understanding (Knollenberg et al., 2021). Therefore, positive and negative emotions are expected to be found.

Cognitive elements

Cognition relates to knowledge and beliefs, comprising perceptions, thinking propositions, choice values, learning procedures, satisfaction and tourist personality (Chebat & Slusarczyk, 2005; Su & Hsu, 2013; Wu et al., 2014; Pina et al., 2019). Cognitive elements are frequently investigated together with affective components to understand each contribution to the formation of tourist destination image and preferences (e.g., Lin et al., 2007). Kock, Josiassen, and Assaf (2016) presented a model that correlates imagery with affect and destination image to explain tourists' behavioural intentions. In this particular case, cognitions relate with the beliefs and perceptions tourists formed about a destination based on the information they have previously collected about it.

Behavioural components

Behaviour relates to movement of tourists in space and time. In general, behavioural components explore what tourists do and how they interact with the situations offered at the destination (Poria et al., 2003).

Behaviour can be investigated as a consequence of tourist experience in a dynamic psychological process mediated by perceived value and satisfaction (Lin & Kuo, 2016), being influenced by creative tourists' experiences and associated memories which have shown good predictive power (Ali et al., 2016). Regarding the latter, antecedent factors of memorable tourism experience and their relationship to tourists' behavioural intentions have also been researched, specifically factors such as hedonism, local culture, involvement and knowledge (Coudounaris & Sthapit, 2017).

Relationships

Relations to be considered include the relationship among tourist companions, tourist providers, tourists with other tourists, and tourists interacting with local people. It is well known that if something goes wrong with friends or family during a tourism experience, tourists' perceptions will not be the same (Schmitt, 1999). Also, if the empathy a guest feels towards the host is not positive, his/her experience is perceived differently (Yüksel, & Yüksel, 2007).

The relationship between tourists and destination residents is also a fascinating one. Indeed, resident-tourist social interactions can be assessed to expand tourism value co-creation since both residents' life satisfaction as well as perceived economic and social-cultural benefits and costs brought to destinations by tourism development were found to impact on value co-creation with tourists (Lin et al., 2017). Moreover, hosts, residents and guests interactions were also revealed in recent research which measured the extent of human presence in travel photos shared in social media platforms by travellers (Nikjoo & Bakhshi, 2019). Interestingly,

only one-third of photos portraying human presence included residents, and solely ten per cent of all photos showed tourists and hosts beside each other.

Applications of orchestra model

This model was applied in different settings and contexts, for instance, within Chinesees visiting Italy (Pearce, Wu, De Carlo and Rossi, 2013; Pearce and Wu, 2016; Wu and Pearce, 2016), within paranormal experiences (Pharino, Pearce and Pryce, 2018), to name a few.

Those applications revealed that the five components mingled those experiences. For example, the most important component of the model within chinese tourists visiting Italy are behavioural and cognitions (Pearce, Wu, De Carlo and Rossi, 2013; Pearce and Wu, 2016; Wu and Pearce, 2016). Whereas Paranormal experiences in Indonesia were mostly driven by affective sensations and emotions, behavioural and cognitive components were not so important as they did not totally understand the unusual experience (Pharino, Pearce and Pryce, 2018). Relationships in particular the travel party were important in both settings.

These applications of the orchestra model suggest that emotions, sensory, behaviours, cognitions and relationships all mattered to explain those experiences with sligth differences. This means that the orchestra model already used in other studies provides the most complete framework to understand a tourism experience that is not tangiblized with the on-site experience. Figure 1 illustrates the orchestra model adapted to this context.

Please insert figure 1 around here

Methodology

The undertaken procedure adopted secondary data collected from social media. Some of the advantages of such an information source include the large volume of usually available data, and the fact that it does not require the active participation of individuals. TripAdvisor is one of the most recognized and appreciated online review platforms within the tourism and

hospitality industries (Oriade & Robinson, 2019). However, online reviews are typically written about past experiences, whereas this study focuses on travellers who were not allowed to travel due to the pandemic crisis. Besides online reviews, TripAdvisor also makes a forum available to its users for the discussion of topics considered relevant by travellers.

Specifically, TripAdvisor forum has different forum topics according to the desired destination, enabling to use the corresponding discussions as proxies of travellers' perceptions about each destination. Recently, few researchers have already paved the way in using the TripAdvisor forum (e.g., Oriade & Robinson, 2019). Given the worldwide impact of the coronavirus pandemic in travelling activities, a large number of concerned travellers have already discussed the situation on TripAdvisor's forum. Thus, TripAdvisor was chosen as the data source for gathering concerned tourists' opinions. The large number of comments required an automated process to retrieve them efficiently. Web scraping consists in mimicking a user's behaviour in crawling over web pages through a computer program and gathering all the needed data (Johnson et al., 2012). It has recently been adopted by several researchers within the tourism and hospitality domains, who stress the advantage of collecting a large dataset in a short period of time (Moro et al., 2019). We chose the "rvest" package from the R statistical tool because it is open source and has high flexibility to retrieve web page elements provided by the R scripting language. The search page of the forum was queried for coronavirus related words (i.e., "corona virus", "coronavirus", "covid"). This procedure enabled the retrieval of a total of 600 threads which were starting specifically to discuss the subject, containing comments published between January 20 and May 6, 2020. Since the comments were extracted from a travel-related forum, published after the COVID-19 outbreak emerged, and contained an identifiable COVID-related word, we deemed those comments as relevant for our analysis. Further, for each of the 600 threads, the process went

through all the pages of the comments within each thread and collected all comments. The result consisted in a dataset with a total of 40,143 comments.

Based on the comments, we needed to make sense of the users' lexica. Thus, the next step consisted in extracting all relevant words within the scope of the six components adapted from Pearce's orchestra model. First, we performed part-of-speech tagging using the "openNLP" R package, which enables the classification of each word within a sentence according to its function. We discarded words that were meaningless when isolated by themselves, such as pronouns and adverbs, and retained only nouns (which represented elements/concepts), verbs (actions/intentions), and adjectives (emotions). Then, we applied lemmatization through the "textstem" R package, which consists in reducing words to a common meaningful root (e.g., "travelling" to "travel"). Finally, all the 37,643 words from the set were transformed to lower case in order to enable direct comparison with the comments.

In the second step, the goal was to obtain a pruned set of the most frequent words used in the written comments (using the "tm" R package). Thus, lemmatization was applied to all words within comments, and the text was transformed to lower case for a direct matching with the set of 37,643 words. Additionally, given the size of the initial document-term matrix (37,643 words \times 40,143 comments), we performed term sparsity reduction, i.e., by removing all words that occurred infrequently within the set of comments. Such step enabled us to obtain a frequency table with all words occurring 20 or more times (20+) in all comments.

Next, all the 3,152 words satisfying the 20+ criterium were classified according to one of the six components, five from the Pearce model (i.e., sensory, affective, cognitive, behavioural, and relationship), and context that derives from the actual situation, as previously clarified, or none, if the word was not related to any of the components. Finally, the topics were computed through topic modelling (Aggarwal & Gour, 2020). Thus, first, the dictionary composed of

the 3,152 previously identified relevant words and their corresponding dimensions were applied, by replacing all words occurring in the comments by the corresponding dimension. A total of 971 comments not matching any dimension were discarded (40,143–39,172). Finally, the topic model was computed using the Latent Dirichlet Allocation (LDA) algorithm, which has been successfully applied in textual data collected from social media in tourism contexts (e.g., Guo et al., 2017). We adopted the “topicmodels” R package for computing the topics. The LDA algorithm aims at computing the distance of each comment to each considered term (β distribution), and to each topic (α distribution). Since the number of topics is an input to LDA, we performed a set of iterations to tune such parameter using the “ldatuning” package from R, which led to a tuned number of six topics. Following the approach by Calheiros et al. (2017), we considered the comment which was associated with the topic it matched best. For the terms (or dimensions, in our case), we considered all of them since the goal of the study was to analyse how the different conceptual dimensions were aggregated per topic. Thus, the β distribution enabled to validate how closely related was each dimension to a given topic.

Results

First, we began by characterising the pruned set of 39,172 comments. Threads are attributed to forum topics on the TripAdvisor forum, which are directly related to travel destinations. The total of 600 threads was linked to destinations in 84 different countries in the six continents. Also, a total of 1,778 comments were within threads not linked to any particular place; instead, those were related to broad subjects such as “air travel”, “timeshare vacation rentals”, and “senior travel”, among others. We computed the sentiment score for every comment using the “sentimentr” R package, and also the comments’ word length. Table 1 shows the distribution of comments per continent, as well as statistics regarding word length

and sentiment score. The large standard deviation values for both metrics denoted a heterogeneity among the comments for all continents.

Please insert table 1

To better understand the evolution of the pandemic from the eyes of potential travellers, we plotted the sentiment score per day together with the reported numbers of daily new cases and new fatalities (ECDC, 2020). Figure 2 show the evolution per continent (except for Antarctica, which is not permanently habited and has not recorded any positive COVID-19 case so far). As expected, as the numbers of daily positive cases and fatalities increased, the sentiment score tended to lower within the next few days, while the opposite effect was also observed.

Sentiment Scores by Continent

Please insert figure 2

In **Africa** (Figure 2) it seems that sentiment score volatility started long before the beginning of new cases in this continent and was kept very pronounced along the following months.

Since the first confirmed case in Africa took place on February 25, 2020, that volatility of the sentiment score is likely to have been caused by news coming from Asia and Europe.

In the **Americas** (Figure 2), uncertainty started long before the beginning of the appearance of cases, probably influenced by the news that came from Asia. When the cases started to grow, sentiment scores were more stable, perhaps due to downplaying effect exerted by governments.

In **Asia** (Figure 2) sentiment scores were volatile in February, and in April and May fear started to grow again as the number of cases increased worldwide. Asia was the first epicentre of the COVID-19 crisis as the disease spread from the city of Wuhan to the whole of China and some neighbouring countries, such as South Korea. Having failed to contain the crisis at a regional level, both local and world health authorities witnessed the disease spreading

globally, with the World Health Organization (WHO) declaring the situation as a global pandemic on March 11, 2020.

The sentiment score in **Europe** (Figure 2) followed the tendency of the other continents with considerable variations in February and April as the cases started to increase.

Finally, in **Oceania** (Figure 2) despite the fact that fatalities were stable along the three months, the sentiment scores varied according to the number of cases registered, suggesting that fear was very present.

As of October 2020, the highest number of cumulative cases have taken place in the Americas (48.5%) followed by Asia (31.4%) and then Europe (15.8%). However, in terms of deaths, the Americas (55.1%) have more than half worldwide, followed by Europe (21.8%) and Asia (19.5%). On average it seems that this pandemic situation was perceived long before the cases started to increase mostly because of the news. Uncertainty and volatility pave population feelings.

Topic Modelling

Topic modelling was applied to the whole set of comments and then applied to each of the continents, in order to understand which topics and components were cross-cutting the perceptions of non-experience in each of the continents. This analysis offers a homogenized understanding as well as a heterogenized one. Figure 3 shows the homogenized perceptions of tourists non-experience across the globe. The topics depicted suggested that tourists' perceptions of non-experience could be grouped in six topics.

Please insert figure 3 around here

Topic 1 relates to relationships and affective components. Relevant comments to illustrate are: *“Honestly, that latest update is what makes me nervous about keeping my trip on the 20th as this travel could potentiate symptoms of COVID-19 in my family”*. *“This thread has become tediously pointless. If they decide to refund or allow changes then that will be a nice*

thing for them to do... ”. The comments show that affective (nervous, tedious) and relationships (family, relation with the hosts) components were mixed, tourists assumed that it was impossible to travel, mostly because they want to protect the others but they are expecting that some action from the tour operators, basically to refund or postponed, even if they recognize this was an exceptional situation.

Tourists’ posts grouped in **Topic 2** focused on the contextual setting emphasizing to where and when they were planning to travel. The following are illustrative comments: *“I’m flying over next Saturday 15th I have all my fingers and toes crossed that everything will be ok”*; *“I am still looking forward to arriving on Saturday in Aruba !!! If I end up staying because of all this I can’t think of a better place to be stuck! ”*. Some of the comments aside from the hope of being able to travel soon related to the evolution of the pandemic, the need for quarantine and the outbreak and lockdown demanded by the situation. These results suggest that tourists were still willing to travel but somewhat accommodated with the situation.

Topic 3 combines context with behavioural attitudes. Behavioural attitudes can be split in two main streams: cancel or postpone their holidays, being these behaviours mostly influenced by the place to where they were planning to travel. An illustrative comment under this topic is: *“We cancelled our reservations for our mid-April trip this morning. Beyond the risk of air travel, you have people pouring into Aruba from all over the world. Aruba will be there in 2021 and beyond. Why takes this risk?”*

“I don't consider myself a paranoid person at all and to be honest I've been known to push myself to limits on occasion, but I have a trip planned in early April and I'm going to postpone”. These results suggest that the place to where they were travelling moderates their behaviour of postponed or cancelled to deal with the fear and uncertainty they are facing.

Topic 4 combines cognitive components with relationships, suggesting that the safety of their travel companions was of utmost importance. The words listed in this topic show that tourists

used all the social networks they could handle to be informed about the evolution of the pandemic, but they were still waiting for informative prospects from the destinations. The following comments underscore those findings: *“We are following the posts in Facebook and Instagram to an informed decision.”*; *“We cannot travel with a young child due to the virus situation. Have you been advised, officially, not to travel?”*

Topic 5 groups affective and sensorial components suggesting that what tourists felt was very important to understand their non-experience. The comments on this topic suggest dichotomic feelings: on the one hand, tourists were panicking, anxious and scared; on the other hand, they felt blessed for not being symptomatic, happy and wishful of being able to travel in the near future. Faith and relieved as well as freedom and confidence were also some of the words most used by tourists to characterize this situation.

These comments emphasize this dichotomy of feelings: *“I have faith in the government here to do some effective to protect against the virus”*; *“I am feeling a bit uncertain– I am getting into a panic mode.”*

Topic 6 combines behavioural with affective components to a lesser extent, suggesting that in this group tourist perceptions related mostly with the care the destinations provided them during this pandemic. Illustrative comments are: *“Closure ... of an event ... should mean that refunds will follow at the company's earliest possible date... But may not. We are living in extraordinary times.”*

Topics by Continent

Topic modelling was also performed on each of the continents under analysis (Tables 2). For each topic, the β distribution value is shown per component, with a lower β denoting a stronger relation of the component to the topic.

Please insert table 2

In **Africa**, the most important topics were topics 1, 2, and 3 with 25%, 18% and 17% of the posts. Topic 1 grouped posts that mixed the importance of the cognitive ($\beta = 0.5$) and relationship ($\beta = 0.93$) components, whereas topic 2 grouped mostly posts associated with the affective ($\beta = 0.06$) component. One example emerging from topic 2 is a post denoting that the non-experience has “... *gone from a dream into a nightmare*”, which reveals the uncertainty within the affective component associated to COVID-19. In turn, topic 3 grouped behavioural ($\beta = 0.01$) related posts. The non-experience in Africa seemed to be very pondered in some extent with a great emphasis on affective, behavioural and cognitive components.

In the **Americas**, topics 1, 2 and 4 absorbed the highest number of posts, 25%, 20%, and 16%, respectively. Topic 1 is entirely related to the COVID-19 context (perfect β of 0). Topic 2 grouped affective posts ($\beta = 0.29$) while topic 3 aggregates the behavioural ($\beta=0.85$) and affective ($\beta=0.98$) components, suggesting the affective component triggered by the non-experience is leading to affective expressions towards the situation. For example (from topic 2), one user states that “*The spread of the virus is bad news... need to ask for refund...*”. This is a situation that shows the negative feelings towards the pandemic is leading to subsequent actions from non-travellers, such as asking for a refund.

In **Asia**, topics 1, 2 and 3 absorbed the highest number of posts, 24%, 19% and 18%, respectively. Topics 2 and 3 are both mostly associated with the pandemic context ($\beta=0.33$ and 0.0, respectively), although topic 2 also emphasizes the relationship component ($\beta=1.27$). This relevance of the context component is related to the coronavirus first spread more steeply in Asia (specifically, in China). The following post, where a traveller is concerned with Visa free transit, is an example of topic 2: “*Does anyone know how the corona virus is affecting the 24 hours visa free transit in PEK airport?*”. The remaining topics address the components of cognition ($\beta=0.21$ for topic 1), affective ($\beta=0.27$ for topic 4), and behavioural (for both

topics 5 and 6). These results suggested that tourists planning to travel to Asia perceived their non-experience more as individual instruments than as an orchestra.

In **Europe**, topics 1, 2, 3, and 4 contained most of the posts with 21%, 18%, 17%, and 16%, respectively. Topic 1 shows evidence of an orchestra where most components play a significant role, with β s from 1.00 to 1.85 for relationship, affective, sensory, and behavioural components. Some examples of posts associated with topic 1 include Italy as a destination, where the disease caused havoc in the first place, such as the following: *“Because no one can come in and this is a dramatic thing for the person dying. They die alone”*. As for the key context component, it clearly emerges in topics 3 and 6. This is a result similar to Asia, providing evidence that there is a significant fraction of posts that are solely related to concerns regarding the pandemic, not focusing on the non-experience in itself.

Oceania, given as a worldwide reference in beating coronavirus, presented three topics that comprised most of the posts, topics 1,3, and 2 with a quota of 22%, 19%, and 17%, respectively. While the context component is also salient in two topics (3, with $\beta=0.00$, and 5, with $\beta=0.66$), topic 5 suggests that such context is leading to specific actions, such as cancellations and refund requests. This is a result aligned with the one obtained for America. The posts gathered in these topics (e.g., *“A bit of Deja vu? You said it!”* for topic 3) provide evidence that the relevance of context is leveraged because the disease spread first in Asia, and then in Europe (in both the context component was clearly salient in two topics), while in America the outbreak occurred latter, giving time for prospective (non-)travellers to take actions (behavioural component), with the same occurring in Oceania, which was more successful in slowing the disease spreading.

Conclusions and implications

The Covid-19 pandemic has severely impacted tourism activity in our planet. This manuscript reported the results of a study focused on understanding the impact of coronavirus on non-tourism experience using the orchestra model, a model designed to assess experiences mixing attitudes, emotions, cognitions, relationships and contexts. This model was chosen to allow this mixture of components, and because the preparation of the travel is also an experience that needs to be explain. Comments shared by tourists on the TripAdvisor forum discussing the pandemic situation impacting their travel were analysed using data mining techniques. Through web scraping, more than 40 thousand comments in 600 threads were extracted using “corona virus” OR “coronavirus” OR “covid” in the search query. This plan was followed by a word selection procedure involving a total of seven steps leading to the setup of a frequency table including over 3 thousand words which occurred twenty or more times in all comments. Next, topic modelling was performed to classify those words according to one of six components, five from the orchestra model (sensory, affective, cognitive, behavioural, and relationship) and context.

The comments were linked to each continent with most of them referring to the Americas, Europe, and Asia, respectively. Sentiment scores were computed and plotted together with the number of the cases as well as deaths taking place on a daily basis for each of the continents. This exercise allowed the observation of a decrease in sentiment scores whenever reported numbers of new cases and fatalities were increasing and vice versa. However, timewise sentiment scores showed some misalignment between continents. For instance, Africa started to present sentiment score volatility way before the first cases reported in this continent since it witnessed the epicenter taking place in Asia and moving to Europe before it was struck by it. The Americas also showed a pattern closer to Africa. Asia was the continent where sentiments started with the onset of the virus epidemic, later turned to pandemic across the globe.

Six topics were unveiled by applying topic modelling to the entire set of comments as well as applied to each of the continents and components with the aim of understanding perceptions of tourist non-experience. Whereas topic 2 only singled out context, topics 4 and 6 focused on two components with the former strongly emphasizing cognition and the latter behaviour elements. Both topics 3 and 5 addressed three components but whereas the first focal point was context and behaviour, the second was based on affection and somewhat in sensory elements as well. Finally, topic 1 spread throughout four of the six components with the clear top three being relationship, affective and behavioural.

From a geographical perspective, Africa showed topics 1, 2, and 3 predominating (60 per cent) with affective and sensory components being underlined. This pattern of dominant topics was interestingly similar to Asia (61 per cent). In the Americas, 61 per cent of the posts were related to topics 1, 2 and 4 whereas in Europe four different topics (1, 2, 3 and 4) played a primary role (72 per cent). Last, Oceania had three chief topics (1,2, and 3) accounting for 58 per cent of the posts.

Considering the orchestra model as our research framework (Figure 1), it is appropriate to look at some key findings regarding each experience element as well as what are their relationships among the five elements. Thus, in summarizing our finding and reflect on our contribution to the orchestra model of tourist experience, we analysed the position of each component in the topics generated for the five continents (Tables 2 to 6). First, two components are given significant more prominence overall, specifically the behavioural and affective dimensions (average of 2.6 and 2.7 positions, respectively), followed by the cognitive (3.6) and relationship (3.7) ones, and lastly by the sensory dimension (4.7). Second, when addressing each of the continents, Asia clearly leads in the cognitive component (3.0) versus the worst performer, Europe (4.2), whereas the latter region emphasizes more the

sensory element (4.0 vis-à-vis 5.3 for the Americas) which in turn stresses the affective element.

There are several contributions of this research. First, at the theoretical level this research brought to the analysis a very important stage of tourist experience: the dreaming and planning stage, where tourists experience the highest levels of uncertainty due the number of decisions they have to make. Second, and still at the theoretical level, the mixed effect orchestra model are of utmost importance as any decision would be taken out of an intermingled of factors. Methodological speaking, topic modelling and data mining are the future of tourism research. Surveys and questionnaires have a number of limitations that these techniques do not have. Furthermore, the TripAdvisor forum shows a great increase of stories shared during this pandemic which suggests that tourists were willing to share their cancellations and uncertainty fears, stories that they were willing to verbalize as they did, with some of the collected sentences actually showing the richness of the analysis done along this research. Additionally, at the empirical level, this study shows to the industry that there is a consensual understanding that reimbursements for all the situations are unfeasible which is important and brings some solace to the industry. Postponements, updated information and some care with the tourists are avenues to reinforce the engagement of the tourists with the place and to ensure their return. Furthermore, the declarations of the tourists suggest how they need to proceed, and this is clearly a matter of updated information. Empirically speaking, tourism businesses and destination marketing organizations could benefit from this research in guiding them when setting up communication marketing strategies and in conveying messages tailored to the identified results. Future research could delve into specific findings on a country level basis to map out derived knowledge from generating markets and tourist destinations.

References

- Agapito, D., Valle, P., & Mendes, J. (2014). The sensory dimension of tourist experiences: Capturing meaningful sensory-informed themes in Southwest Portugal. *Tourism Management*, 42, 224-237. DOI: 10.1016/j.tourman.2013.11.011
- Ali, E.H.M., & Ahmed, M.O. (2019). Sensory Marketing and its Effect on Hotel Market-Share: Perception of Hotel Customers. *Journal of Tourism and Hospitality Management*, 7(1), 116-126. DOI:10.15640/jthm.v7n1a12
- Ali, F., Ryu, K., & Hussain, K. (2016). Influence of experiences on memories, satisfaction and behavioral intentions: A study of creative tourism. *Journal of Travel & Tourism Marketing*, 33(1), 85-100. DOI:10.1080/10548408.2015.1038418
- Aggarwal, S., & Gour, A. (2020). Peeking inside the minds of tourists using a novel web analytics approach. *Journal of Hospitality and Tourism Management*, 45, 580-591. DOI:10.1016/j.jhtm.2020.10.009
- Bagozzi, R.P., & Pieters, R. (1998). Goal-directed emotions. *Cognition & Emotion*, 12(1), 1-26. DOI:10.1080/026999398379754
- Calheiros, A.C., Moro, S., & Rita, P. (2017). Sentiment classification of consumer-generated online reviews using topic modeling. *Journal of Hospitality Marketing & Management*, 26(7), 675-693. DOI:10.1080/19368623.2017.1310075
- Chebat, J.C., & Slusarczyk, W. (2005). How emotions mediate the effects of perceived justice on loyalty in service recovery situations: an empirical study. *Journal of Business Research*, 58(5), 664-673. DOI:10.1016/j.jbusres.2003.09.005
- Chew, E.Y.T., & Jahari, S.A. (2014). Destination image as a mediator between perceived risks and revisit intention: A case of post-disaster Japan. *Tourism Management*, 40, 382-393. DOI:10.1016/j.tourman.2013.07.008
- Coudounaris, D.N., & Sthapit, E. (2017). Antecedents of memorable tourism experience related to behavioral intentions. *Psychology & Marketing*, 34(12), 1084-1093. DOI:10.1002/mar.21048
- Correia, A. (2002). How do tourists choose? A conceptual framework. *Tourism(Zagreb)*, 50(1), 21-29.
- ECDC (2020) European Centre for Disease Prevention and Control. European Union: <https://www.ecdc.europa.eu/en>
- Gössling, S., Scott, D., & Hall, C.M. (2020). Pandemics, tourism and global change: a rapid assessment of COVID-19. *Journal of Sustainable Tourism*, 29(1), 1-20. DOI:10.1080/09669582.2020.1758708
- Gray, E.K., Watson, D., Payne, R., & Cooper, C. (2001). Emotion, mood, and temperament: Similarities, differences, and a synthesis. *Emotions at work: Theory, research and applications for management*, 21-43.
- Guerreiro, J., Rita, P., & Trigueiros, D. (2015). Attention, emotions and cause-related marketing effectiveness. *European Journal of Marketing*, 49 (11/12), 1728-1750. DOI:10.1108/EJM-09-2014-0543
- Guo, Y., Barnes, S.J., & Jia, Q. (2017). Mining meaning from online ratings and reviews: Tourist satisfaction analysis using latent Dirichlet allocation. *Tourism Management*, 59, 467-483. DOI:10.1016/j.tourman.2016.09.009
- Jiang, Y., Li, S., Huang, J., & Scott, N. (2020). Worry and anger from flight delay: Antecedents and consequences. *International Journal of Tourism Research*, 22(3), 289-302. DOI:10.1002/jtr.2334
- Johnson, P.A., Sieber, R.E., Magnien, N., & Ariwi, J. (2012). Automated web harvesting to collect and analyse user-generated content for tourism. *Current Issues in Tourism*, 15(3), 293-299. DOI:10.1080/13683500.2011.555528

- Knollenberg, W., McGehee, N.G., Perdue, R.R., & Andereck, K.L. (2021). We're All in This Together: Understanding How Tourism Advocates Build Relationships across the Tourism Industry. *Journal of Travel Research*, 60(2), 235-250. DOI:10.1177/0047287520906216
- Kock, F., Josiassen, A., & Assaf, A.G. (2016). Advancing destination image: The destination content model. *Annals of Tourism Research*, 61, 28-44. DOI:10.1016/j.annals.2016.07.003
- Kock, F., Nørfelt, A., Josiassen, A., Assaf, A.G., & Tsionas, M.G. (2020). Understanding the COVID-19 tourist psyche: The evolutionary tourism paradigm. *Annals of Tourism Research*, 85, 1-13, DOI:10.1016/j.annals.2020.103053.
- Krishna, A. (2012). An integrative review of sensory marketing: Engaging the senses to affect perception, judgment and behavior. *Journal of Consumer Psychology*, 22(3), 332-351. DOI:10.1016/j.jcps.2011.08.003
- Lin, C.H., Morais, D.B., Kerstetter, D.L., & Hou, J.S. (2007). Examining the role of cognitive and affective image in predicting choice across natural, developed, and theme-park destinations. *Journal of Travel Research*, 46(2), 183-194. DOI:10.1177/0047287506304049
- Loureiro, S.M.C., Almeida, M., & Rita, P. (2013). The effect of atmospheric cues and involvement on pleasure and relaxation: The spa hotel context. *International Journal of Hospitality Management*, 35, 35-43. DOI:10.1016/j.ijhm.2013.04.011
- Ma, Gao, J., Scott, N., & Ding, P. (2013). Customer delight from theme park experiences: The antecedents of delight based on cognitive appraisal theory. *Annals of Tourism Research*, 42, 359-381. DOI:10.1016/j.annals.2013.02.018
- Moro, S., Batista, F., Rita, P., Oliveira, C., & Ribeiro, R. (2019). Are the States United? An analysis of US hotels' offers through TripAdvisor's eyes. *Journal of Hospitality & Tourism Research*, 43(7), 1112-1129. DOI:10.1177/1096348019854793
- Nawijn, J., & Biran, A. (2019). Negative emotions in tourism: A meaningful analysis. *Current Issues in Tourism*, 22(19), 2386-2398. DOI:10.1080/13683500.2018.1451495
- Nikjoo, A., & Bakhshi, H. (2019). The presence of tourists and residents in shared travel photos. *Tourism Management*, 70, 89-98. DOI:10.1016/j.tourman.2018.08.005
- Oliveira, C., Brochado, A., Moro, S., & Rita, P. (2019). Consumer perception of tourist experience through online reviews. *Worldwide Hospitality and Tourism Themes*, 11(6), 696-717. DOI:10.1108/WHATT-09-2019-0052
- Oriade, A., & Robinson, P. (2019). Prosuming tourist information: Asking questions on TripAdvisor. *International Journal of Tourism Research*, 21(1), 134-143. DOI:10.1002/jtr.2247
- Pearce, P.L. (2005). *Tourist behaviour: Themes and conceptual schemes (Vol. 27)*. Clevedon, New Zealand; Buffalo, NY:: Channel View Publications.
- Pearce, P.L. (2011). *Tourist behaviour and the contemporary world*. Bristol, United Kingdom; Buffalo, NY:: Channel View Publications.
- Pearce, P.L. (2013). *The social psychology of tourist behaviour: International series in experimental social psychology (Vol. 3)*. Elsevier.
- Pearce, P. L., & Wu, M. Y. (2016). Chinese tourists' on-site experience in Florence: applying the orchestra model. *Chinese Outbound Tourism*, 2, 199-217.
- Pearce, P.L., Wu, M.-Y., De Carlo, M., & Rossi, A. (2013). Contemporary experiences of Chinese tourists in Italy: An on-site analysis in Milan. *Tourism Management Perspectives*, 7, 34-37. DOI:10.1016/j.tmp.2013.04.001
- Pearce, P.L., & Zare, S. (2017). The orchestra model as the basis for teaching tourism experience design. *Journal of Hospitality and Tourism Management*, 30, 55-64. DOI:10.1016/j.jhtm.2017.01.004
- Pine, B.J., Pine, J., & Gilmore, J.H. (1999). *The experience economy: work is theatre & every business a stage*. Harvard Business Press.

- Pharino, C., Pearce, P., & Pryce, J. (2018). Paranormal tourism: Assessing tourists' onsite experiences. *Tourism Management Perspectives*, 28, 20-28. DOI:10.1016/j.tmp.2018.06.003
- Pina, L.S., Loureiro, S.M.C., Rita, P., Sarmento, E.M., Bilro, R.G., & Guerreiro, J. (2019). Analyzing consumer-brand engagement through appreciative listening on social network platforms. *Journal of Promotion Management*, 25(3), 304-313.
- Plutchik, R. (2001). The nature of emotions: Human emotions have deep evolutionary roots, a fact that may explain their complexity and provide tools for clinical practice. *American Scientist*, 89(4), 344-350.
- Poria, Y., Butler, R., & Airey, D. (2003). The core of heritage tourism. *Annals of Tourism Research*, 30(1), 238-254. DOI:10.1016/S0160-7383(02)00064-6
- Russel, J.A. (1980) A circumplex model of affect. *Journal of Personality Social Psychology*, 39,1161–1178.
- Ryan, C. (2000). Tourist experiences, phenomenographic analysis, post-positivism and neural network software. *International Journal of Tourism Research*, 2(2), 119-131.
- Schmitt, B. (1999). *Experiential Marketing*. New York: The Free Press
- Sparks, B. (2007). Planning a wine tourism vacation? Factors that help to predict tourist behavioural intentions. *Tourism Management*, 28(5), 1180-1192. DOI:10.1016/j.tourman.2006.11.003
- Su, L., & Hsu, M.K. (2013). Service fairness, consumption emotions, satisfaction, and behavioral intentions: The experience of Chinese heritage tourists. *Journal of Travel & Tourism Marketing*, 30(8), 786-805. DOI:10.1080/10548408.2013.835228
- Wu, M.Y., & Pearce, P.L. (2016). Italian cathedrals and Chinese tourists. In *The World Meets Asian Tourists*. Emerald Group Publishing Limited.
- Wu, M.Y., Wall, G., & Pearce, P.L. (2014). Shopping experiences: international tourists in Beijing's silk market. *Tourism Management*, 41, 96-106. DOI:10.1016/j.tourman.2013.09.010
- Yüksel, A., & Yüksel, F. (2007). Shopping risk perceptions: Effects on tourists' emotions, satisfaction and expressed loyalty intentions. *Tourism Management*, 28(3), 703-713. DOI:10.1016/j.tourman.2006.04.025

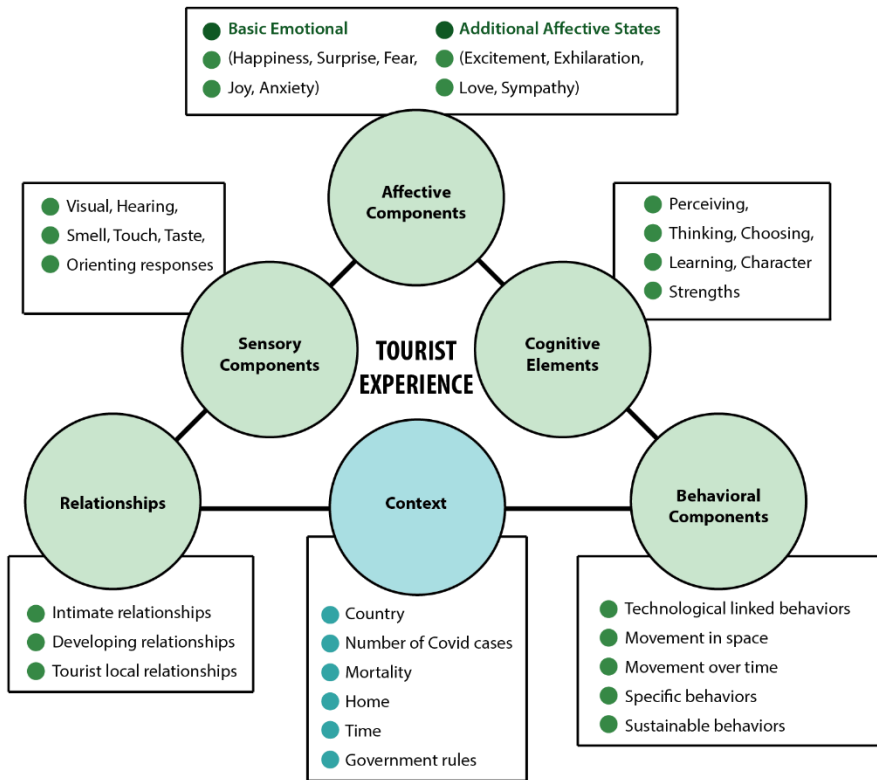
Table 1 - Characterisation of comments per continent.

Continent	Nr. comments	Word length		Sentiment score	
		Ave.	SD	Ave.	SD
Africa	1,345	447.3	437.1	0.050	0.175
Americas	13,008	422.3	498.2	0.032	0.174
Antarctica	95	605.1	937.9	0.044	0.151
Asia	9,431	469.2	415.0	0.034	0.179
Europe	11,816	466.7	427.3	0.045	0.168
Oceania	1,699	463.0	395.9	0.035	0.169
<i>None</i>	<i>1,778</i>	<i>396.6</i>	<i>371.4</i>	<i>0.055</i>	<i>0.181</i>

Table 2 –Topics per Continent

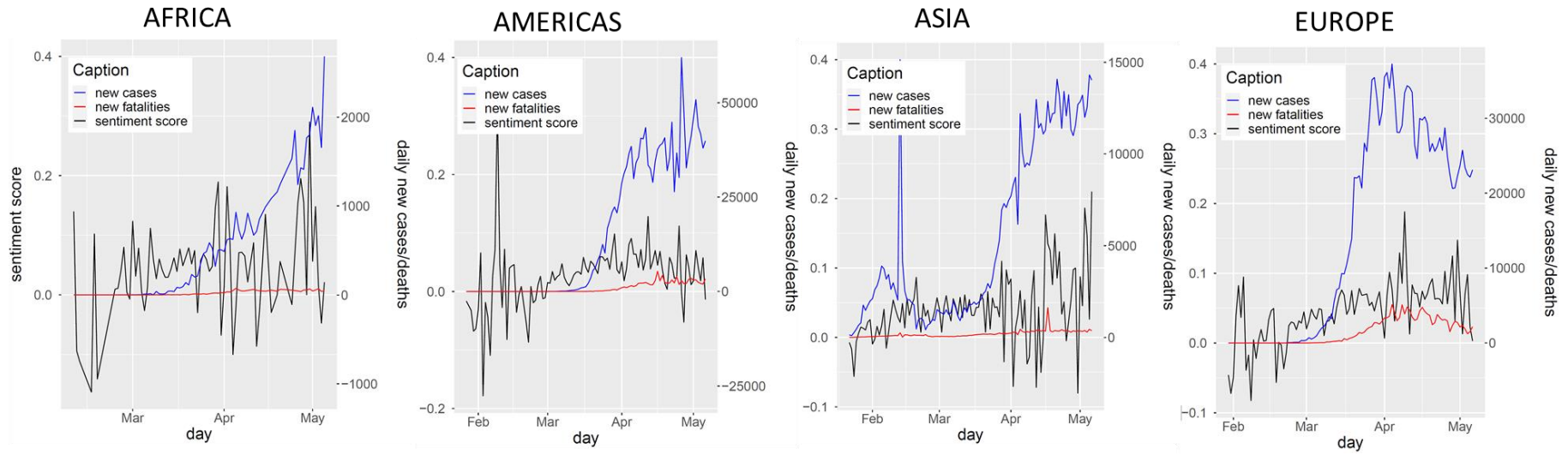
Topics for Africa													
Nr.	%	Dim₁	β₁	Dim₂	β₂	Dim₃	β₃	Dim₄	β₄	Dim₅	β₅	Dim₆	β₆
339	25%	cognitive	0.5	relationship	0.93	affective	10.6	behavioural	10.64	context	10.64	sensory	10.64
248	18%	affective	0.06	sensory	3.71	behavioural	3.73	relationship	5.34	cognitive	6.03	context	6.6
222	17%	behavioural	0.01	relationship	4.79	affective	10.6	cognitive	10.57	context	10.57	sensory	10.57
187	14%	behavioural	0.65	cognitive	1.04	affective	2.11	context	5.56	relationship	10.51	sensory	10.51
197	15%	context	0	affective	10.6	behavioural	10.6	cognitive	10.56	relationship	10.56	sensory	10.56
152	11%	context	0.24	sensory	1.97	relationship	2.79	behavioural	4.56	affective	8.16	cognitive	10.55
1345	100%												
Topics for Americas													
Nr.	%	Dim₁	β₁	Dim₂	β₂	Dim₃	β₃	Dim₄	β₄	Dim₅	β₅	Dim₆	β₆
3278	25%	context	0	affective	12.8	behavioural	12.8	cognitive	12.81	relationship	12.81	sensory	12.81
2546	20%	affective	0.29	sensory	1.5	behavioural	3.83	relationship	5.42	cognitive	12.79	context	12.79
2006	15%	behavioural	0.85	affective	0.98	cognitive	1.61	context	12.8	relationship	12.8	sensory	12.8
2087	16%	cognitive	0.31	relationship	1.33	affective	12.9	behavioural	12.85	context	12.85	sensory	12.85
1634	13%	behavioural	0.07	affective	2.65	relationship	7.77	cognitive	9.74	context	12.79	sensory	12.79
1482	11%	context	0.55	relationship	1.38	behavioural	1.79	affective	7.24	cognitive	12.81	sensory	12.81
13033	100%												
Topics for Asia													
Nr.	%	Dim₁	β₁	Dim₂	β₂	Dim₃	β₃	Dim₄	β₄	Dim₅	β₅	Dim₆	β₆
2278	24%	cognitive	0.21	relationship	1.65	affective	12.6	behavioural	12.62	context	12.62	sensory	12.62

Figure 1. The Orchestra Model



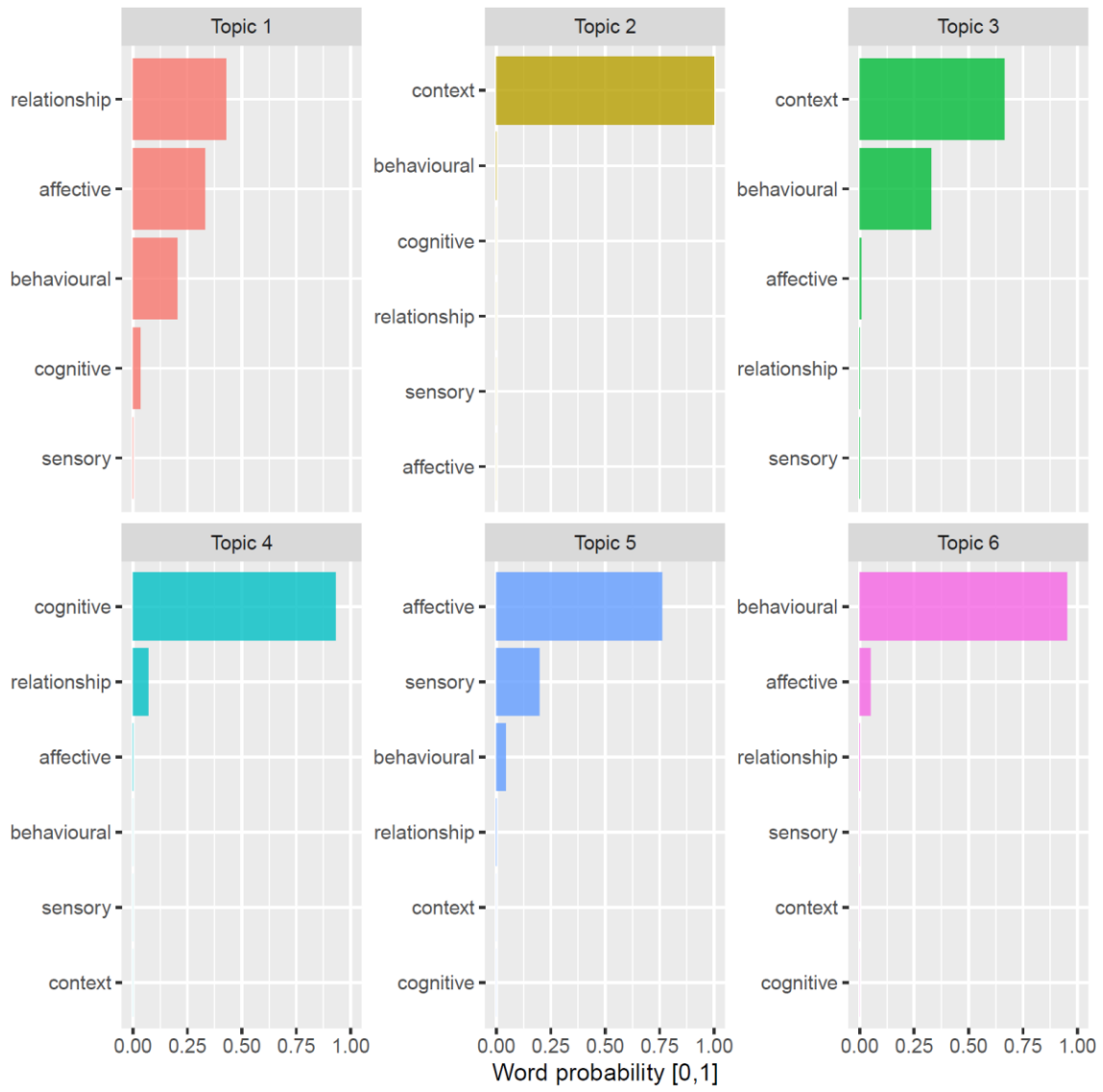
Source: Adapted from Pearce (2011) and Pearce et al. (2013)

Figure 2 - Sentiment score evolution through time by continents



1
2

Figure 3 - Unveiled topics.



3
4
5
6
7
8
9
10
11