Repositório ISCTE-IUL

Guest satisfaction in East and West: evidence from online reviews of the influence of cultural origin in two major gambling cities, Las Vegas and Macau

Sérgio Moro[1],[*]

Abstract

We assess how cultural differences between guests and host destination affect the TripAdvisor score granted on hotel units. We selected two gambling destinations, Las Vegas and Macau, to enable a comparison between a Western and an Eastern destination. The six Hofstede's cultural dimensions (power distance, individualism, masculinity, uncertainty avoidance, long term orientation, indulgence) were adopted. A total of 109,309 and 28,957 useful reviews for Las Vegas and Macau, respectively, were collected from TripAdvisor. Then, for each online reviewer, the difference between the reviewer's country of origin and the destination for each dimension were computed. Finally, two data mining models (one per destination) of TripAdvisor score were computed using as inputs the differences for each dimension. We conclude that the difference between guest origin and destination cultural dimension influences the scores granted on TripAdvisor. We also found that the relevance of each dimension is different for both destinations analysed.

Keywords

Cultural background; cultural dimensions; guest satisfaction; gambling destinations.

1. Introduction

Customer satisfaction is a key concern of organizations striving to succeed in a competitive world, made smaller through the information and communication systems and technologies built upon the Internet. Online social media platforms that provide means for users to complain and praise about products and services have become dominant sources for obtaining customer feedback. In the tourism and hospitality industry, tourists and guests often write their opinions in online reviews platforms such

---
[1] Instituto Universitário de Lisboa (ISCTE-IUL), ISTAR-IUL, Lisboa, Portugal
[*] E-mail: scmoro@gmail.com

as TripAdvisor and Booking.com (Schuckert et al., 2016). However, even in a globalised world, brands need to carefully balance between a global strategy and adaptations to local communities and countries, to please consumers and increase their likelihood of a positive response to a marketing campaign (Moro et al., 2020a). Hence, the cultural origin plays a decisive role in customer satisfaction, even when a traveller is exposed to electronic word-of-mouth by reading what others have previous written (de Carlos et al., 2019). Nevertheless, although many studies have emerged to explore the potential of customers' contributions over social media, few have addressed the cultural factor by analysing the profiles of online reviewers. The recent study by Stamolampros et al. (2019) analysed reviewers' cultural origins and its impact in airline satisfaction, whereas Litvin (2019) assessed the impact of high versus low uncertainty avoidance in guest's perception about the destination.

In this study, we explore the differences between guests' origins and their destination by considering the six Hofstede's cultural dimensions (Hofstede et al., 2010): power distance (PDI), individualism (IDV), masculinity (MAS), uncertainty avoidance (UAV), long term orientation (LTO), and indulgence (IDL). Specifically, we focus on the important hospitality industry which has promoted online reviews' platforms that have been extensively adopted by tourists worldwide (Schuckert et al., 2015). We adopt the TripAdvisor score as a proxy for guest satisfaction. Using the six dimensions as inputs to a neural network model and the score as the output, we contribute to the existing literature by two folds: (1) we prove the existence of a relation between the cultural background of travellers visiting a destination and guest satisfaction, and (2) we show how each of the six Hofstede's dimensions influence satisfaction. To explore the dichotomy of East versus West, we chose two major gambling destinations, Macau, in China, and Las Vegas, in the United States. The emotions triggered by such renowned gambling cities amplify visitors' satisfaction (Sui & Baloglu, 2003), enabling to better understand the differences of the cultural background influence in guest satisfaction.

2. Theory and research hypotheses
2.1. Cultural influence in hospitality

The travellers' cultural background influences their perceptions when visiting a tourism destination (Torres et al., 2014). The binomial local versus visitor culture needs to be

handled carefully by both hosts and guests. There are several examples that show local population habits clashing with visitors' habits in dimensions such as clothing and public behaviour. For example, Dubai, in the United Arab Emirates, has risen in the past few decades to become a world-renowned tourism destination (Henderson, 2014). Yet, to fulfil the Emirate's desire, the conservative local population needed to be willing to welcome guests from all corners of the world, including from more liberal Western countries such as those in North America and Europe. At the same time, there is an effort to remind visitors of the need to respect local culture, and there are recommendations in tourism websites regarding issues such as dress code and alcohol consumption (Stephenson et al., 2010). Stephenson (2014) has devoted attention to such cultural clash in Dubai, concluding that local heritage and culture is currently being threatened by the rapid urbanization and westernization and, therefore, needs to be better preserved.

Tourism marketers and offices are aware of the differences of their target audience, depending on the country and cultural context. For example, Tang et al. (2009) found that the images published in websites promoting Macau are different for English websites when compared to Chinese ones. At the same time, as tourism urbanization popular contemporary culture leads to well-known destinations such as Macau and Las Vegas, where gambling and pleasure are selling trademarks (Weaver, 2011), visitors to such destinations are still bonded to their cultural roots, despite having a perception of what to expect. This leads to the importance of having several distinct cultures represented among hotels' staff, to offer a sense of being at home while experiencing local attractions (Christensen-Hughes, 1992). In line with this trend, Hearns et al. (2007)'s findings emphasize the importance of cultural diversity in hospitality curricula of education programs offered by tourism schools.

2.2. Guests' origins and satisfaction

Consumer satisfaction measures how satisfied the consumers of a product or service are (Peterson & Wilson, 1992). It is a key construct in Marketing models (e.g., customer retention - Hennig-Thurau & Klee, 1997; customer loyalty - Beerli et al., 2004). Therefore, scholars have devoted attention to customer-centric models, with the industry also adopting Customer Relationship Management (CRM) information systems where assessing satisfaction is mandatory to meet consumers' needs (Khalifa & Shen, 2005).

The dissemination and adoption of social media platforms worldwide have provided a valuable mean of understanding the consumer perspective, whereas previously scholars and practitioners relied mostly on primary data collected through surveys and interviews (Moro et al., 2020b). The hospitality industry has been at the forefront of such wave of new technology by developing and embracing online reviews platforms such as TripAdvisor and Yelp (Guerreiro & Moro, 2017). The valuable tourists' opinions written in social media have several advantages, including being freely contributed (i.e., the researcher or manager does not need to rely on the tourist willingness to state his/her opinion), and being abundant in popular platforms, providing excellent Big Data sources for analysis (Schroeder, 2014). Thus, a wide array of studies has emerged based on such platforms focused on guest satisfaction (e.g., Xiang et al., 2015; Kim & Park, 2017).

The globalisation phenomenon, empowered by online social media, offers an unprecedent source of information, leading to informed consumers that now know better than never about the services or products they are acquiring (Shiau et al., 2018). The hospitality sector is no exception and visitors can now virtually explore online the locations a-priori of their decisions and read the opinions from previous guests who stayed at each destination (Xiang & Gretzel, 2010; Gonçalves et al., 2018). Thus, nowadays visitors are aware of the cultural background of the destination and can take actions to prevent any embarrassment or conflicting situation when at the destination (Zhou et al., 2018). Given the importance of the subject, several researchers have devoted attention to studying the impact of guests' cultural origins when visiting a foreign location. Mok and Armstrong (1998) analysed hotel service quality expectations of tourists coming from five different countries (UK, USA, Australia, Japan, and Taiwan) to visit Hong Kong. They conducted a survey and collected 325 responses from guests staying in three hotels and found significant differences in visitors' expectations depending on the country of origin. Likewise, Torres et al. (2014) came to similar conclusions in unveiling that visitors of Central Florida, USA, coming from distinct countries, including Brazil, Germany and Canada, are delighted differently based on their origins, regarding the services and amenities offered by hotels. Torres et al. (2014) also adopted primary data by collecting 228 responses to interviews conducted in an upscale hotel. Although most of the empirical studies on the subject are based on primary data, the previously mentioned importance and advantages of social media have led to recent studies based on data originated in social media platforms. For example, Zhou et al. (2014) identified significant different

levels of satisfaction according to guests' origins, with Oceania and North American visitors being more positive than Western Europeans and Southeast Asians. However, their study only considered 1345 reviews collected from the Agoda.com website, thus not benefiting from Big Data.

Existing literature provides evidence between cultural origin and satisfaction. Such evidence emerges in different domains of knowledge. One of these domains within the social sciences is related to job satisfaction. The globalisation supported by a transportation network that connects cities worldwide increased cross-cultural phenomena and migration led to the employment of foreigners at both skilled (Bodankin & Semyonov, 2016) and non-skilled levels (Kasimis, 2008), leveraging research accordingly. Specifically, Hofstede et al. (2010)'s work pioneered cross-cultural research by proposing a set of dimensions to classify each nation's culture. He grounded his proposal on empirical analyses based on IBM's workers, one of the largest multinational corporations in the world (Powell, 2006). Several subsequent studies have adopted Hofstede's cultural dimensions to assess their impact in satisfaction. Hauff et al. (2015) analysed 24 nations in different continents and found that in nations high in uncertainty avoidance, job security is less important to job satisfaction. Still within the job satisfaction umbrella, Testa (2009) identified that the relationship between leaders and team members is impacted by the cultural similarity between them. On another domain of research, Cui et al. (2012) discovered that cultural values and ethnic background influence the effect of message congruency on attitude towards the advertisement. By borrowing from previously cited studies, there is support for raising hypotheses regarding a deeper influence of guests' origins when visiting renowned tourism destinations, helping to span existing tourism research beyond the marginal contributions reported on the previous paragraph.

There is empirical evidence in current literature (e.g., Litvin, 2019; Zhou et al., 2014) that the guests' origins and subsequent habits are subconsciously present when visitors are writing about their stay, denoting trends which can be traced back to each one's origin. Yet, no study is known based on a large number of online reviews and disaggregating each visitor's origin to its six Hofstede's dimensions to assess each's influence on the perceived satisfaction expressed. Therefore, we raise the following research questions:

RQ1: Does the difference between guest origin and destination cultural dimension influences the scores granted on TripAdvisor?

RQ2: Are there differences of the influence of cultural dimensions between a Western and an Eastern destination reflected on TripAdvisor score (assuming RQ1 is confirmed)?

3. Data and approach

Traditionally, research questions in empirical studies in social sciences have been answered through primary data collected using instruments such as questionnaires and interviews (e.g., Leask & Fyall, 2006). However, new technologies grounded on the Internet provide Big Data sources from where secondary data can also be collected to address research problems (Heafner et al., 2016). In particular, the social media provides platforms in which users can share their experiences (Mehraliyev et al., 2019). Several examples of studies adopting such approach have emerged in the recent years in tourism (e.g., Holder & Ruhanen, 2017; Dickinger & Mazanec, 2015). One major advantage is the large volume of data usually available which does not rely upon users' willingness to participate in the research (Moro et al., 2020b). In our study, we follow such approach by harvesting and harnessing the textual comments of users written in online reviews. For collecting the guests' opinions, we chose TripAdvisor, a globally renowned online reviews platform specifically developed for the tourism and hospitality industry. We developed a web scraping script in the R language using the "rvest" package, which enabled to efficiently gather all reviews written between January 2005 and October 2019 for every Las Vegas and Macau hotel registered on TripAdvisor (Xiang et al., 2017). By focusing in hotels, we assure a large diversity of units within the same destinations as opposed to national parks, for example. Such diversity is translated into a high number of interactions between staff and guests of different nationalities, providing the needed ground for this study. Additionally, the appealing emotional nature of gambling justifies the choice of the two global gambling centres worldwide (Sui & Baloglu, 2003).

Figure 1 shows the undertaken procedure, including the number of reviews collected. Since the location field is not mandatory for reviewers when writing a review, a large number of missing values were found, which rendered the corresponding reviews useless. Thus, only those reviews in which the city of origin of the reviewer was written were retained. At the same time, for those reviews, we obtained the six Hofstede's cultural dimensions per country. Finally, since we aimed to understand the influence of cultural differences between guests and hosts, we removed those reviews from the same country

of the destination, i.e., all reviews from US citizens were removed for the case of Las Vegas and, likewise, all reviews from Chinese citizens were discarded for the case of Macau. Such procedure resulted in a total of 109,309 and 28,957 useful reviews for Las Vegas and Macau, respectively.

The fact that Las Vegas is an older destination brand, known at a planetary scale as a synonym of gambling and pleasure, and with a larger number of hotels justifies the larger number of reviews retrieved. Also, more than 75% of Las Vegas visitors are domestic tourists while only less than 6% of Macau guests come from China. Regarding an overall view of guests' satisfaction through the lens of online reviewers, guests are in general more pleased with the offer from Macau, with an average score of 4.3, while Las Vegas units score in average 3.97.

To assess the cultural difference between hosts and guests, for each reviewer, the difference for each of the six Hofstede's cultural dimensions (PD, INDIV, MAS, UA, LTO, INDUL) between the visited country (China, for the case of Macau, or US for the case of Las Vegas) and the reviewer's home country were computed. By choosing both an Eastern and a Western destination, we mitigate the influence the cultural roots of the destination while focusing on the cultural differences.

A data mining approach was adopted to answer the two research questions highlighted at the end of section 2.2. Such procedure consists in training two models (one per destination) that receive as inputs the six variables that measure the cultural differences between guest and host city and, as output, the quantitative score granted by the guest on TripAdvisor (i.e., a value $\in \{1, 2, 3, 4, 5\}$). The modelling algorithm chosen was the random forest, which is an ensemble of decision trees, a simple yet effective technique in which the decisions go through a series of branches until a leaf is reached where an outcome is computed. This technique performs equally well when compared to other non-linear machine learning algorithms such as support vector machines and it is more straightforward to define while requiring fewer parameters (Pal, 2005). Considering the collected datasets and the need to assure independency between the data used to train the models, and the data used to assess their performance, a typical method consists in splitting the dataset leaving part of the instances of the problem for training, and the remaining for testing the model's performance. To assure robustness between training and testing split, a 10-fold cross validation scheme was adopted (Romão et al., 2019).

Since TripAdvisor's score is a number, the problem becomes a regression problem. Accordingly, two performance metrics were computed to evaluate both models' performance: the mean absolute error (MAE), which measures the difference between the real score and the one predicted by the model, and the mean absolute percentage error (MAPE), which measures MAE in proportion to the real value (Kim & Kim, 2016). Since TripAdvisor score goes from 1 to 5, MAPE can artificially amplify the percentage error for cases of lower real scores. To address such issue, Silva et al. (2018) proposed the normalized mean absolute error (NMAE), which is computed by dividing the MAE by the amplitude of possible values (i.e., the maximum minus the minimum possible values, or 5-1=4 for the case of TripAdvisor score). Thus, the lower the error metrics (MAE, MAPE, NMAE), the better is the model in explaining the TripAdvisor score based on the differences for the six cultural dimensions between guest and host.

Finally, and assuming the difference in the cultural dimensions explains the score granted by guests (i.e., models with smaller errors), it is possible to extract knowledge from a data model by computing the contribution of each of the six cultural dimensions to the model in terms of their relevance. The data-based sensitivity analysis (DSA) is a technique first proposed by Cortez and Embrechts (2013) which consists in using a random sample of instances of the problem obtained from the dataset used to train the model to vary the input features simultaneously to assess how much the output changes as a result of such variation. If changing a given feature results in a large variation of the output, then that feature holds a large influence on the output. The result of DSA is a percentage which expresses the relevance of each feature to the TripAdvisor score. The higher the percentage, the stronger the influence. DSA has been applied successfully to a wide range of problems including branding (Romão et al., 2019), customer targeting (Barraza et al., 2019), and civil engineering (Tinoco et al., 2011). All undertaken experiments were conducted using the "rminer" package from the R statistical tool, which offers a flexible set of functions specifically devoted to data mining tasks, including an implementation of DSA (Cortez, 2010).

4. Results and discussion

As previously mentioned, two models were trained, one for modelling Las Vegas TripAdvisor score, and another for Macau. Table 1 shows the three computed metrics for

both models. Although there is a deviation of the outputs from the model and the real scores, the percentage metrics show both models constitute a good approximation of the real scores. The obtained metrics are from the same order of magnitude of the ones obtained by Moro et al. (2017) also for modelling TripAdvisor score. Therefore, we can positively answer the first research question, RQ1: there is an influence of the difference between guest origin and destination cultural dimension on the scores granted on TripAdvisor. Since TripAdvisor score can be considered as a proxy for guest satisfaction (Moro et al., 2017), we can conclude that the cultural background of visitors and the destination culture influence the perceived guest satisfaction, corroborating previous studies (e.g., Torres et al., 2014), but in this case through a very large set of reviews which represent all the opinions expressed in TripAdvisor, one of the most widely known platforms for tourism, for two major gambling destinations in two opposite sides of the planet, Las Vegas, and Macau.

To answer the second research question (RQ2), we adopted the DSA to unveil the contribution of each individual cultural dimension to the scores granted for both models. Figure 2 shows the contribution of each variable (i.e., each cultural dimension) in terms of relative percentage to TripAdvisor score, with the values for Las Vegas appearing in a darker grey.

The results show that for most cultural dimensions, there is a difference in the role played by such dimensions between the Western and the Eastern gambling destinations. Such result positively responds to the second research question (RQ2). Next, we scrutinize how those differences are reflected by the cultural dimensions. For Las Vegas, the differences in both LTO and UAV between guests and host destination are the two most relevant dimensions, concealing around 43% of relevance. For Macau, LTO is also the most relevant dimension, although with just slightly above relevance when compared to IDL, MAS, and UAV, the second, third, and fourth most relevant dimensions for Macau. By plotting a variable effect characteristic graphic, we are able to understand, based on DSA, how LTO influences score for both cities (Figure 3).

Given that China (Macau) holds a value of 87 for LTO , according to Hofstede et al. (2010), while the corresponding value for the US (Las Vegas) is of only 26, the results expressed on Figure 3 highlight the possible ranges for the differences, with the much higher score of Las Vegas resulting in more ranges of positive differences, whereas the opposite occurs for Macau. For both destinations, a common trend emerges: guests from

countries scoring higher in LTO tend to grant lower scores on TripAdvisor. This result reflects the fact that gambling, which is a key tourism driver in both cities, is associated to immediate rewards as opposed to long-term orientation. However, for the case of Las Vegas, the score in TripAdvisor drastically decreases for LTO differences above 25, i.e., for guests coming from countries with an LTO above 26. Such different behaviour may be due to Macau being a more conservative city with managers and staff more dedicated to assuring a long-term relationship with guests (Harrill et al., 2011; Lam, 2002), whereas Las Vegas, known as the capital of gambling and pleasure, creates a clash in visitors coming from long-term oriented cultures due to its immediacy-based culture turned to quick profit, thus investing less in human resources (Engstrom, 2007; Sledge et al., 2011). As an example, 76 Spanish visitors to Macau attributed an average score of 4.42 (LTO difference=22; LTO-Spain=48; LTO-US=26), whereas 890 Spanish visitors to Las Vegas granted an average score of 3.78 (LTO difference=-39; LTO-Spain=48; LTO-China=87). Such result denotes that Spanish are positively impressed with the long-term perspective of hosts receiving them in Macau which, among other factors, influences the scores granted. The persistence trait associated with long-term orientation leads to a service more focused on responding to customers' needs. To illustrate this, a Spanish guest on Paris Las Vegas hotel wrote the following comment: "*the reception at the hotel has very few people attending it and there are too long queues to check in*". On the other hand, another Spanish guest who stayed in Grand Hyatt Macau, said the following: "*Staff is everywhere to help on everything you should need, all of them coordinated by ... a true professional on duty every moment of the day*". This is just one of many examples showing that Macau managers invest more in the quality and training of their staff. It seems that long-term orientation of hosts is directly reflected into guest satisfaction.

Next, we scrutinize the effect of UAV on the granted scores for both destinations (Figure 4). Both show a similar trend, even though Chinese score lower in UAV (30) in comparison to US citizens (46). This finding unveils that the dimension related to uncertainty avoidance, which can be viewed as the opposite of gambling stimulus for immediate reward, is the same regardless of being a Western or an Eastern gambling destination. Thus, long-term orientation and uncertainty avoidance dimensions are affected by the fact that both cities analysed are two major gambling destinations Yet, whereas guests from countries with a higher LTO tend to grant higher scores, the opposite occurs for UAV. Such result denotes that gambling has a more negative influence on

guests with a lower UAV (Kim et al., 2002), who seek for immediate rewards, whereas those that score higher in UAV seem to better enjoy the stay by scoring higher the hotel units on TripAdvisor.

Interestingly, the masculinity dimension, which is the third most relevant for both destinations, has the same relevance in both cases. However, as shown in Figure 5, the effect is different for both cities. For Las Vegas, the results are steady until the difference between guest and host is 25, above which the granted scores plummet. Thus, the liberal environment of the Western sin city influences visitors from countries with a stronger masculinity dimension. This finding confirms RQ2, by showing that the effect of masculinity differs between both destinations. As example for the case of Las Vegas, one guest from the UK staying at the Paris Las Vegas hotel made the following appreciation about the outfit of female staff: "*the skimpy outfits worn by some of the female staff might appear a little sexist to some*". This guest rated the unit with a 5 score, meaning that he was not negatively affected, which is in line with the low difference between UK and US in terms of MAS (i.e., 66 for UK, and 62 for US), as observed in Figure 5. On the opposite, a reviewer from Japan (high masculinity level, MAS=95) granted only 3 to Circus Circus, despite not complaining specifically about any issue. Those two reviews highlight the curve observed for Las Vegas in Figure 5. Considering hospitality unit managers are highly concerned in replying to negative online reviews to show the reviewer and other readers they care with guests' opinions (Pantano & Di Pietro, 2013), the result uncovered shows that sometimes a more negative review cannot be directly solved by prompt manager's interventions; rather, it reflects a cultural background. Hence, when managers direct their social media team to answer reviews, they should also consider the nation from where the guest is coming from.

5. Conclusions and implications

Cultural clash between hosts and guests is a classical subject of study in hospitality and tourism. Through an innovative data-driven approach, our study benefits from a large set of reviews written by visitors of two major gambling destinations in two opposite sides of the planet - Las Vegas, and Macau - to understand how the guests perceive their stays in each destination. Our findings show different patterns, enabling to confirm that even

in a globalised world made smaller through information and communication technologies, the cultural roots play a significant role at the visitors' eyes.

From a practical standpoint, this study shows one size does not fit all, and hotel managers can incorporate strategies to mitigate cultural differences that their guests may feel. For example, staff can be hired and trained to deal differently with guests, depending on their country of origin. Such guideline in practice may lead to more pleased guests who intend to experiment the destination offer while at the same time not feeling misplaced. From a theoretical perspective, our approach is the first that (1) computes all Hofstede's cultural dimensions for online reviewers and (2) uses those six dimensions to build a data model with only cultural variables to understand their influence in visitors' perceived satisfaction. Also, we concluded that the destination itself plays an important role in the influence of cultural differences, since the same variables, i.e., the same differences between hosts and guests contribute differently to guests' satisfaction in the two cities.

Finally, while the two cities were carefully chosen to enable comparison, no generalization beyond that can be made. Thus, future studies need to be developed to assess cultural influence in a wide array of destinations holding different contexts.

References

Barraza, N., Moro, S., Ferreyra, M., & de la Peña, A. (2019). Mutual information and sensitivity analysis for feature selection in customer targeting: A comparative study. Journal of Information Science, 45(1), 53-67.

Beerli, A., Martin, J. D., & Quintana, A. (2004). A model of customer loyalty in the retail banking market. European Journal of Marketing, 38(1/2), 253-275.

Bodankin, M., & Semyonov, M. (2016). Geo-cultural Origin and Economic Incorporation of High-skilled Immigrants in Israel. Population, Space and Place, 22(5), 471-486.

Christensen-Hughes, J. (1992). Cultural Diversity: The Lesson of Toronto's Hotels. Cornell Hotel and Restaurant Administration Quarterly, 33(2), 78-87.

Cortez, P. (2010). Data mining with neural networks and support vector machines using the R/rminer tool. In Industrial Conference on Data Mining (pp. 572-583). Springer, Berlin, Heidelberg.

Cortez, P., & Embrechts, M. J. (2013). Using sensitivity analysis and visualization techniques to open black box data mining models. Information Sciences, 225, 1-17.

Cui, G., Yang, X., Wang, H., & Liu, H. (2012). Culturally incongruent messages in international advertising. International Journal of Advertising, 31(2), 355-376.

de Carlos, P., Alén, E., Pérez-González, A., & Figueroa, B. (2019). Cultural differences, language attitudes and tourist satisfaction: a study in the Barcelona hotel sector. Journal of Multilingual and Multicultural Development, 40(2), 133-147.

Dickinger, A., & Mazanec, J. A. (2015). Significant word items in hotel guest reviews: A feature extraction approach. Tourism Recreation Research, 40(3), 353-363.

Engstrom, E. (2007). Selling with sex in sin city: The case of the Hard Rock Hotel Casino. Journal of Promotion Management, 13(1-2), 169-188.

Gonçalves, H. M., Silva, G. M., & Martins, T. G. (2018). Motivations for posting online reviews in the hotel industry. Psychology & Marketing, 35(11), 807-817.

Guerreiro, J., & Moro, S. (2017). Are Yelp's tips helpful in building influential consumers?. Tourism Management Perspectives, 24, 151-154.

Harrill, R., Uysal, M., Cardon, P. W., Vong, F., & Dioko, L. (2011). Resident attitudes towards gaming and tourism development in Macao: Growth machine theory as a context for identifying supporters and opponents. International Journal of Tourism Research, 13(1), 41-53.

Hauff, S., Richter, N. F., & Tressin, T. (2015). Situational job characteristics and job satisfaction: The moderating role of national culture. International Business Review, 24(4), 710-723.

Heafner, T. L., Fitchett, P. G., & Knowles, R. T. (2016). Using big data, large-scale studies, secondary datasets, and secondary data analysis as tools to inform social studies

teaching and learning. In Rethinking Social Studies Teacher Education in the Twenty-First Century (pp. 359-383). Springer, Cham.

Hearns, N., Devine, F., & Baum, T. (2007). The implications of contemporary cultural diversity for the hospitality curriculum. Education+Training, 49(5), 350-363.

Henderson, J. C. (2014). Global Gulf cities and tourism: A review of Abu Dhabi, Doha and Dubai. Tourism Recreation Research, 39(1), 107-114.

Hennig-Thurau, T., & Klee, A. (1997). The impact of customer satisfaction and relationship quality on customer retention: A critical reassessment and model development. Psychology & Marketing, 14(8), 737-764.

Hofstede, G., Hofstede, G., & Minkov, M. (2010). Cultures and organizations: Software of the mind. Revised and expanded (3rd Edition). New York: McGraw-Hill USA.

Holder, A., & Ruhanen, L. (2017). Identifying the relative importance of culture in Indigenous tourism experiences: netnographic evidence from Australia. Tourism Recreation Research, 42(3), 316-326.

Kasimis, C. (2008). Survival and expansion: migrants in Greek rural regions. Population, Space and Place, 14(6), 511-524.

Khalifa, M., & Shen, N. (2005). Effects of electronic customer relationship management on customer satisfaction: A temporal model. In Proceedings of the 38th Annual Hawaii international conference on system sciences (pp. 171a-171a). IEEE.

Kim, S., & Kim, H. (2016). A new metric of absolute percentage error for intermittent demand forecasts. International Journal of Forecasting, 32(3), 669-679.

Kim, W. G., & Park, S. A. (2017). Social media review rating versus traditional customer satisfaction: which one has more incremental predictive power in explaining hotel performance? International Journal of Contemporary Hospitality Management, 29(2), 784-802.

Kim, S. S., Prideaux, B., & Kim, S. H. (2002). A cross-cultural study on casino guests as perceived by casino employees. Tourism Management, 23(5), 511-520.

Lam, T. K. (2002). Making sense of SERVQUAL's dimensions to the Chinese customers in Macau. Journal of Market-Focused Management, 5(1), 43-58.

Leask, A., & Fyall, A. (2006). Researching the management of visitor attractions: international comparative study issues. Tourism Recreation Research, 31(2), 23-32.

Litvin, S. W. (2019). Hofstede, cultural differences, and TripAdvisor hotel reviews. International Journal of Tourism Research, 21(5), 712-717.

Mehraliyev, F., Choi, Y., & Koseoglu, M. A. (2019). Social structure of social media research in tourism and hospitality. Tourism Recreation Research, 44(4), 451-465.

Mok, C., & Armstrong, R. W. (1998). Expectations for hotel service quality: Do they differ from culture to culture? Journal of Vacation Marketing, 4(4), 381-391.

Moro, S., Rita, P., & Coelho, J. (2017). Stripping customers' feedback on hotels through data mining: The case of Las Vegas Strip. Tourism Management Perspectives, 23, 41-52.

Moro, S., Pires, G., Rita, P., & Cortez, P. (2020a). A cross-cultural case study of consumers' communications about a new technological product. Journal of Business Research, In press. DOI: 10.1016/j.jbusres.2018.08.009.

Moro, S., Ramos, P., Esmerado, J., & Alturas, B. (2020b). Evaluating a guest satisfaction model through data mining. International Journal of Contemporary Hospitality Management, In press. DOI: 10.1108/IJCHM-03-2019-0280.

Pal, M. (2005). Random forest classifier for remote sensing classification. International Journal of Remote Sensing, 26(1), 217-222.

Pantano, E., & Di Pietro, L. (2013). From e-tourism to f-tourism: emerging issues from negative tourists' online reviews. Journal of Hospitality and Tourism Technology, 4(3), 211-227.

Peterson, R. A., & Wilson, W. R. (1992). Measuring customer satisfaction: fact and artifact. Journal of the Academy of Marketing Science, 20(1), 61-73.

Powell, I. S. (2006). Geert Hofstede: Challenges of cultural diversity. Human Resource Management International Digest, 14(3), 12-15.

Romão, M. T., Moro, S., Rita, P., & Ramos, P. (2019). Leveraging a luxury fashion brand through social media. European Research on Management and Business Economics, 25(1), 15-22.

Schroeder, R. (2014). Big Data and the brave new world of social media research. Big Data & Society, 1(2), 1-11.

Shiau, W. L., Dwivedi, Y. K., & Lai, H. H. (2018). Examining the core knowledge on facebook. International Journal of Information Management, 43, 52-63.

Schuckert, M., Liu, X., & Law, R. (2015). Hospitality and tourism online reviews: Recent trends and future directions. Journal of Travel & Tourism Marketing, 32(5), 608-621.

Schuckert, M., Liu, X., & Law, R. (2016). Stars, votes, and badges: How online badges affect hotel reviewers. Journal of Travel & Tourism Marketing, 33(4), 440-452.

Silva, A. T., Moro, S., Rita, P., & Cortez, P. (2018). Unveiling the features of successful eBay smartphone sellers. Journal of Retailing and Consumer Services, 43, 311-324.

Sledge, S., Miles, A. K., & Van Sambeek, M. F. (2011). A comparison of employee job satisfaction in the service industry: Do cultural and spirituality influences matter?. Journal of Management Policy and Practice, 12(4), 126-145.

Stamolampros, P., Korfiatis, N., Kourouthanassis, P., & Symitsi, E. (2019). Flying to quality: Cultural influences on online reviews. Journal of Travel Research, 58(3), 496-511.

Stephenson, M. L., Russell, K. A., & Edgar, D. (2010). Islamic hospitality in the UAE: indigenization of products and human capital. Journal of Islamic Marketing, 1(1), 9-24.

Stephenson, M. L. (2014). Tourism, development and 'destination Dubai': Cultural dilemmas and future challenges. Current Issues in Tourism, 17(8), 723-738.

Sui, J. J., & Baloglu, S. (2003). The role of emotional commitment in relationship marketing: An empirical investigation of a loyalty model for casinos. Journal of Hospitality & Tourism Research, 27(4), 470-489.

Tang, L., Choi, S., Morrison, A. M., & Lehto, X. Y. (2009). The many faces of Macau: A correspondence analysis of the images communicated by online tourism information sources in English and Chinese. Journal of Vacation Marketing, 15(1), 79-94.

Testa, M. R. (2009). National culture, leadership and citizenship: Implications for cross-cultural management. International Journal of Hospitality Management, 28(1), 78-85.

Tinoco, J., Gomes Correia, A., & Cortez, P. (2018). Jet grouting column diameter prediction based on a data-driven approach. European Journal of Environmental and Civil Engineering, 22(3), 338-358.

Torres, E. N., Fu, X., & Lehto, X. (2014). Examining key drivers of customer delight in a hotel experience: A cross-cultural perspective. International Journal of Hospitality Management, 36, 255-262.

Weaver, D. B. (2011). Contemporary tourism heritage as heritage tourism: Evidence from Las Vegas and Gold Coast. Annals of Tourism Research, 38(1), 249-267.

Xiang, Z., Du, Q., Ma, Y., & Fan, W. (2017). A comparative analysis of major online review platforms: Implications for social media analytics in hospitality and tourism. Tourism Management, 58, 51-65.

Xiang, Z., & Gretzel, U. (2010). Role of social media in online travel information search. Tourism Management, 31(2), 179-188.

Xiang, Z., Schwartz, Z., Gerdes Jr, J. H., & Uysal, M. (2015). What can big data and text analytics tell us about hotel guest experience and satisfaction? International Journal of Hospitality Management, 44, 120-130.

Zhou, L., Ye, S., Pearce, P. L., & Wu, M. Y. (2014). Refreshing hotel satisfaction studies by reconfiguring customer review data. International Journal of Hospitality Management, 38, 1-10.

Zhou, Q. B., Zhang, J., Zhang, H., & Li, X. R. (2018). Is all authenticity accepted by tourists and residents? The concept, dimensions and formation mechanism of negative authenticity. Tourism Management, 67, 59-70.

Table 1 - Models performance metrics.

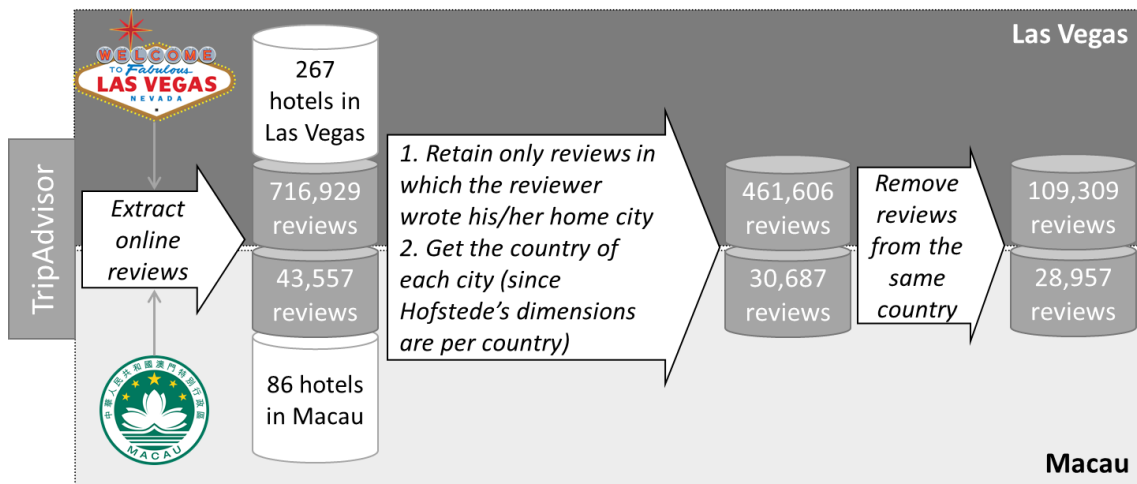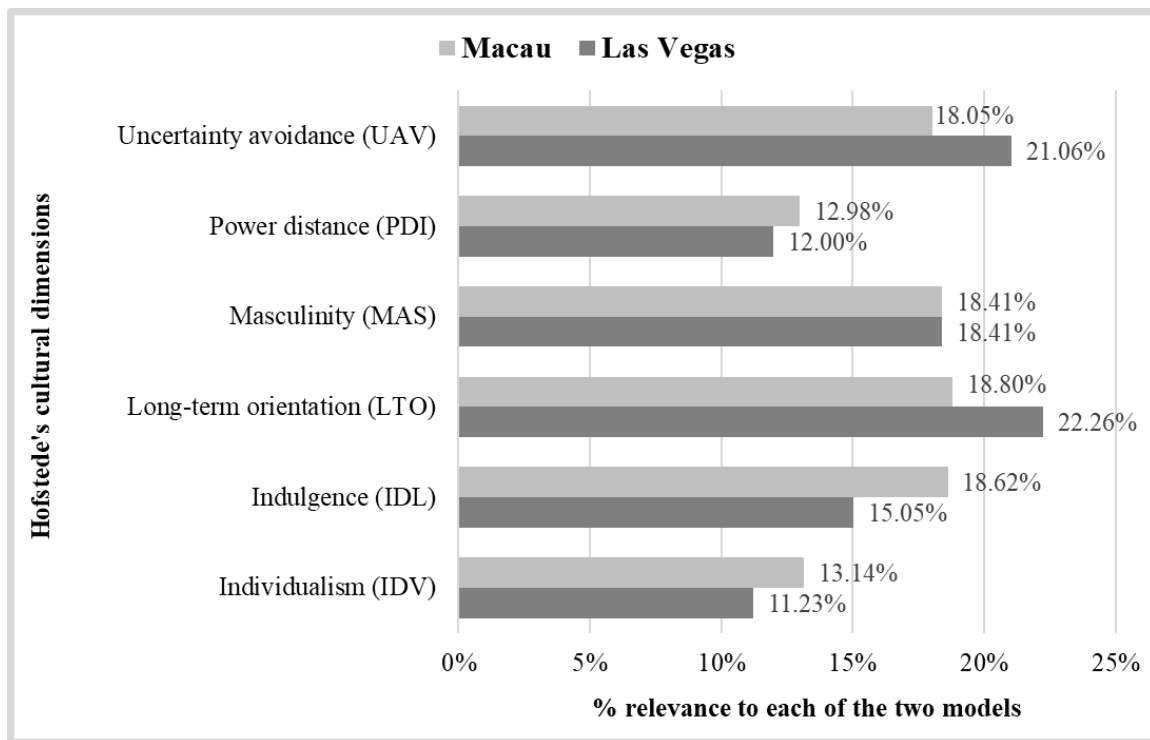| Metric	City	
	Las Vegas	Macau
MAE	0.831	0.748
MAPE	32.78%	25.46%
NMAE	20.77%	18.69%

Figure 1 - Data collection procedure.

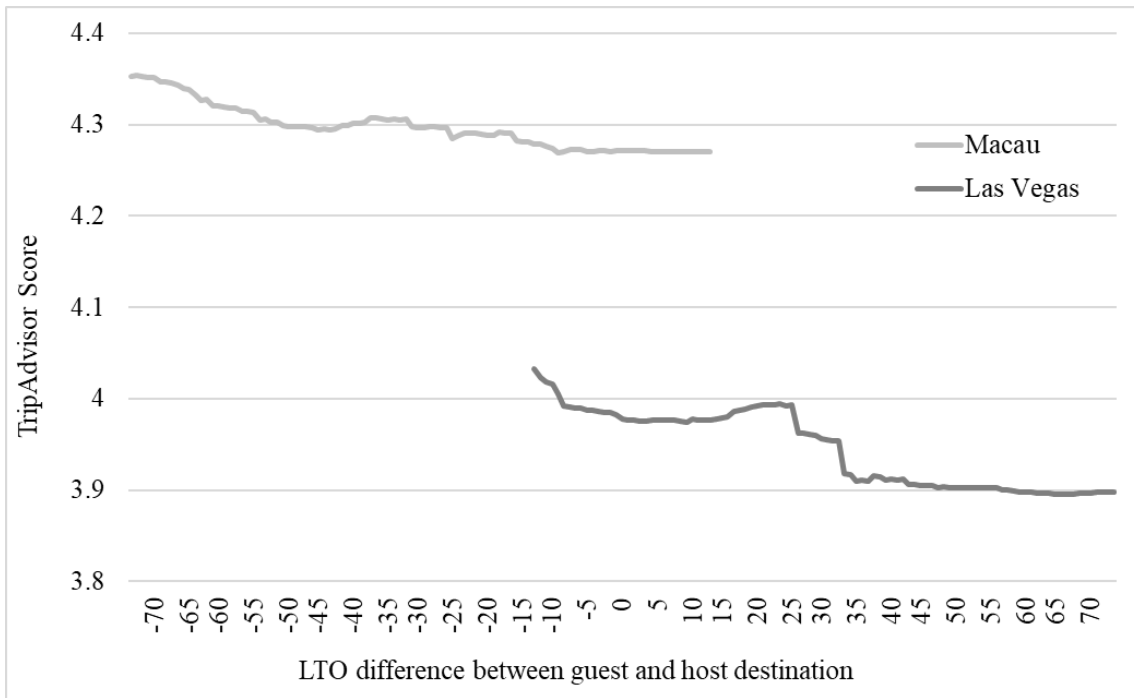**Figure 2** - Cultural dimensions relevance to TripAdvisor score for both destinations.

Figure 3 - Influence of LTO difference in TripAdvisor score.

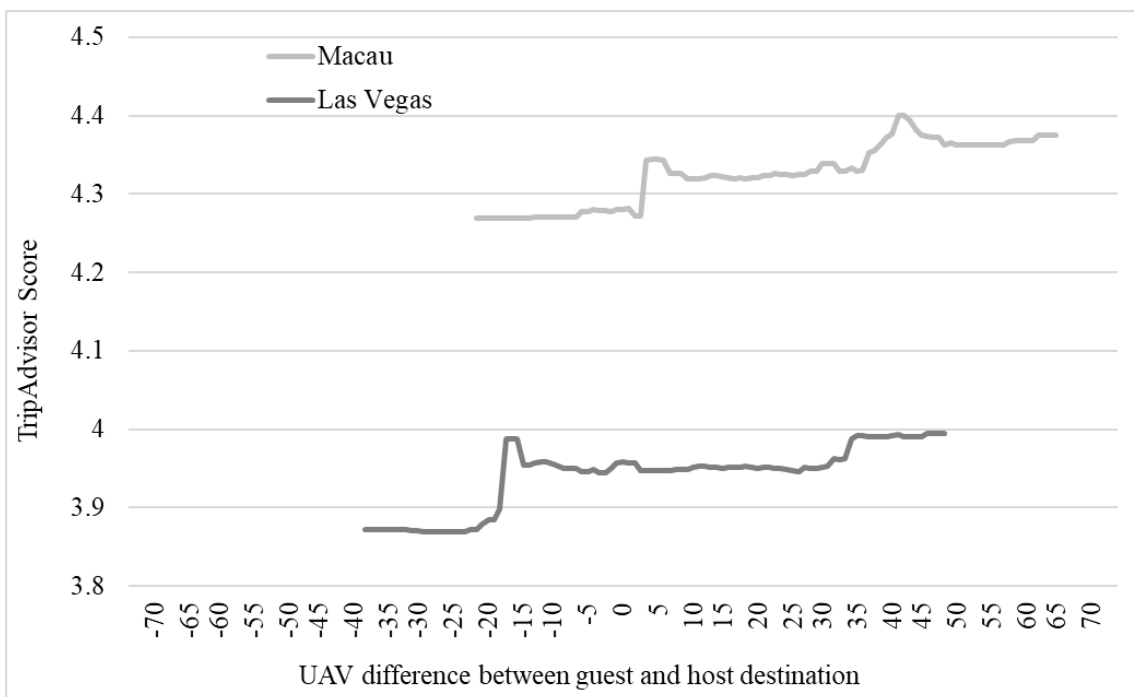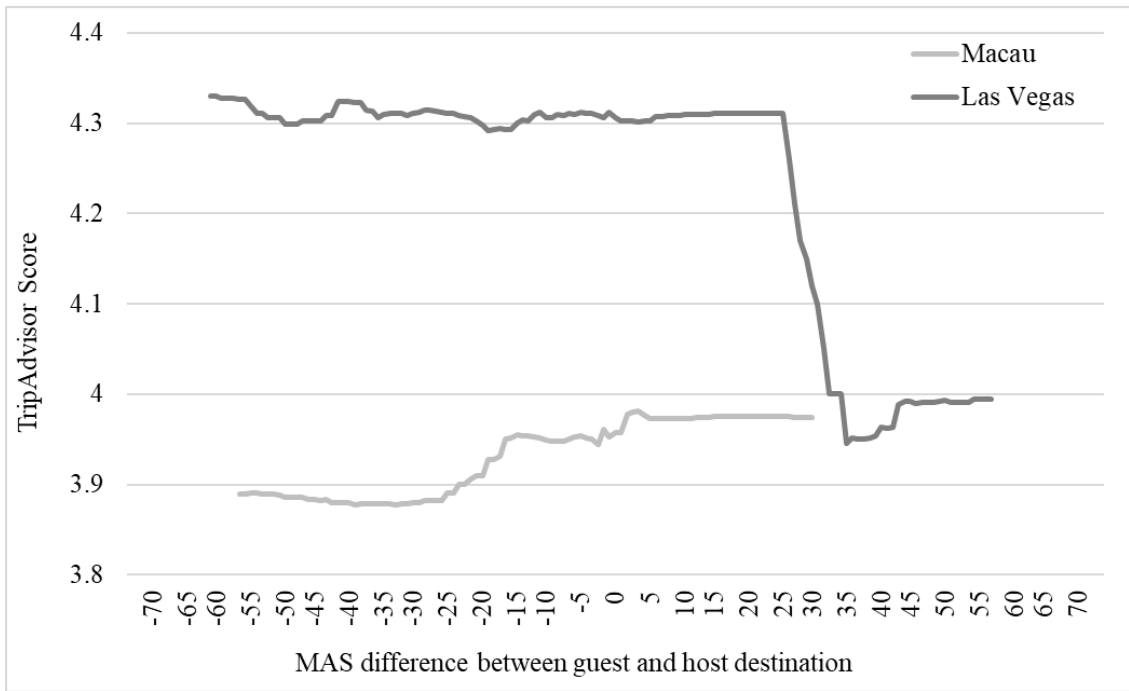**Figure 4** - Influence of UAV difference in TripAdvisor score.

Figure 5 - Influence of MAS difference in TripAdvisor score.