Evaluating Domestic Bias on Airline Passengers' Ratings: The Moderating Effect of Cultural Value Orientation

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Abstract

We explore differences in airline passengers' online ratings toward domestic and foreign carriers. Using a dataset of more than 380,000 airline passenger reviews obtained from TripAdvisor, we show that on average passengers express higher satisfaction (as proxied by their overall rating) for airline service encounters with domestic carriers, exhibiting a form of domestic bias. Using Hofstede's framework, we examine how cultural dimensions influence the strength of this bias and find support for the moderating impact (positive and negative) of passengers' cultural dimensions on their provided ratings toward domestic airlines. The study has theoretical and practical implications for international marketing researchers and airline operational planners.

Keywords: Electronic WOM, Online Rating, Airlines, Cultural Orientation, Domestic Bias

1. Introduction

Do airline passengers exhibit similar rating behavior toward domestic and foreign carriers? This is the main question we explore in this study. Electronic word of mouth (eWOM) has received significant attention in the hospitality literature due to the popularity of online reviews and its influence on customers' purchase decisions (Dellarocas et al., 2007; Dwyer, 2007; Godes and Mayzlin, 2004). A significant part of the literature evaluates the effect of online reviews on sales or the impact of review characteristics on customer purchase decisions, while there is a significant asymmetry in the literature that examines online reviews in conjunction with other factors that affect expressed perceived satisfaction (Stamolampros et al., 2019b). People consult and trust opinions shared by others online, but the question remains: are those opinions a true reflection of product/service quality, or do they reflect other factors such as inherent bias toward the product, brand, or, in the context of services, service provider? If the latter is valid, then the message expressed on online reviews is distorted, and customers who exclusively rely on their information content may take suboptimal decisions.

The underlying theory behind the online expression of customers' satisfaction or dissatisfaction is the expectation confirmation/disconfirmation paradigm (Oliver, 2015). Customer satisfaction is manifested as the perception of the fulfillment of needs, desires, and goals from the consumption of a product or service, with research vociferously linking this to customer loyalty (Oliver, 1999). When consumers' a priori service expectations are met or surpassed, their a posteriori evaluations are positive and vice versa: when expectations are not met, their evaluations are negative. However, there is a possibility that both the formation of expectations and subsequent judgments may be shaped by other influences, as customers' needs vary based on cultural, social, demographic, or other personal attributes. Even the same individual's needs vary as they adjust their expectations continuously. This is in line with Yi and La (2004), who argue that satisfaction might not remain steady over time despite customers

receiving the same quality of service over time. Consequently, given the heterogeneity of preferences, one's online review expressing satisfaction is a strident signal of quality for a reviewer with different expectations.

Notwithstanding the growth and popularity of eWOM-related studies, our understanding of factors explaining heterogeneity in rating behavior among passengers remains limited. This is an important gap in the literature that permits the generalizability of current customer satisfaction research through service evaluation theories and empirical inquiries. As airline travel services are experiential, customers have an expectation of service standards and their desired service reflects a normative or ideal expectation (Cadotte et al., 1987; Parasuraman et al., 1988). Norms and beliefs are instilled by national identity and culture and shape people's perceptions, dispositions, and behaviors (Markus and Kitayama, 1991). Travel services occupy a borderless, cross-cultural market, where rating behavior may be affected by cultural values. This is a reasonable assumption, as culture reflects an archetypal understanding of how social behavior is organized (Hofstede et al., 2010). Moreover, the importance of cultural values in service encounters is well documented (Sharma et al., 2012, 2009), with past research asserting that consumer cultural orientation influences value perception (Mattila, 1999).

Although eWOM communicators' cultural values may be important for understanding rating behavior differences, central to our study is the assumption that such heterogeneous outcomes may also be influenced by passenger attitudes toward domestic and foreign carriers. Prior research demonstrates that consumer ethnocentrism (CE) is related to cultural values (Sharma, 2011; Yoo and Donthu, 2005). The beliefs held by passengers when selecting services delivered by foreign companies (Shimp and Sharma, 1987) may lead to the overestimation of specific service attributes and service quality of domestic carriers and the underestimation of those of foreign products (Rawwas et al., 1996). Consequently, CE may lead passengers to evaluate domestic carriers differently from foreign carriers. In addition, research also suggests

that country-specific quality perception may be influenced by the country of origin (COO) (Balabanis and Diamantopoulos, 2004).

The current study empirically assesses the rating behavior of airline passengers toward domestic and foreign carriers. The followed approach allows someone to explore domestic bias effects in a sample where a very large number of countries is present, thus addressing the limited or single-country sample problem that challenges the veracity of past efforts (Brouthers et al., 2016). A parallel contribution of this study is the investigation of eWOM through the lens of airline service encounters. Hitherto, airline service quality is mainly approximated through performance metrics or surveys (Keiningham et al., 2014; Stamolampros and Korfiatis, 2019; Suzuki et al., 2001). Many studies delve into the investigation of online reviews with regard to hotels or restaurants (Mauri and Minazzi, 2013; Xie et al., 2014; Ye et al., 2009; Zhang et al., 2010); however, this source of information has only received limited attention in other tourism related sectors such that of airlines (Korfiatis et al., 2019; Stamolampros et al., 2020).

To this end, the remainder of the paper is as follows: The study's theoretical background and hypotheses formulation are provided in the next section (2). A description of the data used, and the results, are presented in Section 3. A discussion about the theoretical and managerial implications is outlined in Section 4, while the paper concludes in Section 5, which also includes a discussion about the limitations.

2. Theoretical Framework and Hypothesis Development

2.1 Electronic Word of Mouth

The emergence of digital channels has spurred a revitalization of word-of-mouth studies. The focus is mainly on customer user–generated content, although alternative forms have been also studied, such as that produced by employees (Stamolampros et al., 2019a; Symitsi et al., 2018).

A basic viewpoint is that electronic word of mouth (eWOM) appears to be more potent to customers than marketer-created sources of information on the Web in stimulating product interest (Bickart and Schindler, 2001). Online consumer reviews, as the constituent element of eWOM, substitute or complement traditional forms of word of mouth and customer-to-business communication about product quality (Chevalier and Mayzlin, 2006). The importance, influences, and different mechanisms of eWOM in the service industry are well documented in extant literature (Wu et al., 2016; Zeithaml et al., 2006). Owing to the intangible nature of services and consequent higher perceived risk, customers rely more on information provided from experienced sources (Bansal and Voyer, 2000). In the hospitality context, the abundance of many digital intermediaries has spurred the concept of review aggregators, where ample conceptual and empirical studies examine review valence in service encounters such as hotels and restaurants (Ayeh et al., 2016; Gao et al., 2018; Stamolampros and Korfiatis, 2018; Zhu et al., 2019).

A key reason for the importance of WOM in the hospitality context is its wide range of outcomes for consumer attitudes – including service judgments (Herr et al., 1991) and actual consumer behavior (Duan et al., 2008). From a confirmation/disconfirmation theoretical lens, while studies that validate the importance of customer satisfaction are ample, Szymanski and Henard (2001) also reveal that customer dissatisfaction might be detrimental for a firm, resulting in unfavorable WOM. When customer expectations are not met, negative disconfirmation leads to negative WOM. Consumers have certain motivations when engaging in such behavior, based on their personal, subjective experience, which may be caused by rejecting a service due to a dissatisfying incident (Goldenberg et al., 2007) and may also be based on the emotions experienced during dissatisfaction (Wetzer et al., 2007).

2.2 Country-of-Origin Effects, Consumer Ethnocentrism, and eWOM Heterogeneity

We argue that COO effects and CE may be present in airline passengers' quality perception and subsequent service evaluations as indirect influences. COO effects explore consumer perceptions about a product emanating from a particular country (Roth and Romeo, 1992). The COO effect is "*the phenomenon of evaluating products based on judging the country of origin*" (Chryssochoidis et al., 2007:1521). The COO effect has also been identified in the service context (Berentzen et al., 2008). Obermiller and Spangenberg (1989) suggested a framework to distinguish between the cognitive, affective, and normative influences that underlie COO effects, with CE presented as its normative stance.

CE, defined as "*the beliefs held by consumers about the appropriateness, indeed morality, of purchasing foreign-made products*" (Shimp and Sharma, 1987:280), is considered a positive bias toward purchasing domestic products to avoid possible outcomes such as personal perceived judgments against imports. It also represents an individual's perception of the appropriateness at the morality level of buying non-domestic-made products (Shimp and Sharma, 1987). The perception that people are inclined to notice their own crowd as exceptional is typically centered around a social determinant (Haque et al., 2015). Chryssochoidis et al. (2007) empirically validated that CE influences consumer beliefs regarding perceived quality of domestic and foreign products, echoing the assertion that CE may be viewed as a boundary condition for COO (Fischer and Zeugner-Roth, 2017). The assumption that ethnocentric consumers evaluate COO more favorably is empirically addressed (Cheng et al., 2014; Mockaitis et al., 2013; Pecotich and Rosenthal, 2001; Saffu and Walker, 2005). CE makes possible a negative influence on the quality of foreign products and, consequentially, the quality of foreign products has a positive influence on purchasers' intention to acquire these products (Mostafa, 2010; Yoo and Donthu, 2005).

The effects of COO and CE appear under-researched in the airline context, with only a handful of studies demonstrating their impact. When exploring the COO effect with particular focus on factors that determine airline carrier selection, Bruning (1997) depicted that national loyalty ranked next to price as a key selection determinant, empirically demonstrating that Canadian passengers tend to show a strong preference to domestic versus foreign airlines. Al-Sulaiti and Baker (1997) report that passengers preferred domestic airlines to foreign airlines, despite participants expressing unfavorable attitudes toward home carriers. Ahmed et al. (2010) reported that COO influences carrier selection and subsequent evaluation. Regarding CE, the applicability of the ethnocentric model for travel services has been identified (De Ruyter et al., 1998), with Chang and Cheng (2011) empirically validating the relationship between ethnocentrism and foreign carrier selection. In sum, the COO and CE literature demonstrates a domestic country selection bias, with empirical research suggesting that domestic products are more positively evaluated from high ethnocentric consumers, in diverse cultural contexts (Sharma, 2011). Keeping in mind the presence of CE and COO influences for travel service selection and evaluation, we should also expect this to be manifested in online reviews through a more favorable evaluation. Therefore, the following hypothesis is formulated:

> **H1:** Airline passengers' online rating is more positive for domestic carriers than foreign carriers.

2.3 The Moderating Effect of Cultural Value Orientation

Cases of biases against foreign products/services compared to domestic ones are well documented (Ozsomer et al., 1991; Peterson and Jolibert, 1995). However, the direction of bias is not uniform (Balabanis and Diamantopoulos, 2004), as some studies reveal contradicting results regarding consumers' preferences in favor of foreign offerings (Jean Harrison-Walker, 1995; Papadopoulos et al., 1987; Strutton et al., 1994).

We argue that the effect of domestic bias on airline passengers' service evaluation may be shaped by culture. The effect of culture on customer satisfaction occupies a central position in the tourism and hospitality literature (Huang and Crotts, 2019) and literature recognizes the pronounced impact of national culture on service expectations (Furrer et al., 2000; Mazanec et al., 2015). Given the link between expectation and subsequent evaluations, it is also reasonable to assume that culture has a significant effect on the latter. Empirical evidence supports this notion, suggesting cultural influences on eWOM, such as the importance of cultural differences in understanding review valence variation (Tang, 2017a), the moderating effect of culture in the eWOM–product market performance relationship (Tang, 2017b), cross-cultural differences in eWOM occurrence (Lin and Kalwani, 2018), and the effect of culture on WOM referral behavior (Money et al., 1998).

As culture shapes consumer understanding of countries and product/services, there is concrete evidence that COO effects on product evaluations are culturally relevant (Gürhan-Canli and Maheswaran, 2000) and attitude formation may be based on the same cues but processed differently on the basis of cultural differences (Knight and Calantone, 2000). Culture is fundamental for formulating consumer understanding, as it affects an individual's interpretation of the world around them (De Mooij, 2018). However, studies that empirically examine the interplay between cultural dimensions and domestic bias on consumer evaluations are limited and constrained to specific countries. Hofstede et al.'s (2010) cultural dimensions model presents the study's integral theoretical compass, allowing us to explore the moderating effects of cultural value orientation on domestic bias. The model addresses culture across six dimensions, namely *individualism–collectivism*, *uncertainty avoidance*, *power distance*, *masculinity–femininity*, *long-term versus short-term orientation*, and *indulgence versus restraint*.

An important connection between cultural value orientation and CE has been proposed by Yoo and Donthu (2005), complementing Watson and Wright (2000), who asserted that highly ethnocentric consumers take into consideration cultural similarity when evaluating foreign products, as purchaser ethnocentrism is an important factor to be considered when evaluating the quality of foreign versus domestic products (Haque et al., 2015). Ethnocentric purchasers may be inclined to perceive the quality of local products as superior to that of foreign products. There is clear evidence and theoretical support for the effects of multiple cultural dimensions. Gürhan-Canli and Maheswaran (2000) identified that individualistic consumers evaluated domestic offerings more favorably when they were superior to foreign competition, whereas collectivists demonstrated preference for domestic offerings regardless of their superiority. Yeniyurt and Townsend (2003) found that power distance and uncertainty avoidance hinder the acceptance of new products in a number of countries. More recently, Leonidou et al. (2019) identified that consumer animosity influenced product avoidance, with this association being stronger when cultural influences were present.

In the context of airline travel, literature remains surprisingly silent on whether COO and CE effects on product evaluations are culturally relevant. Each constituent cultural dimension could support the central theme of our study, that cultural orientation moderates domestic bias. *Collectivistic* passengers are inherently ethnocentric (Yoo and Donthu, 2005) and are more likely to evaluate domestic carriers more favorably than their individualistic counterparts. Passengers from countries with high levels of *uncertainty avoidance* are expected to demonstrate a more positive stance toward domestic carriers than their counterparts, due to familiarity (Dacin and Smith, 1994). Individuals from high–*power distance* cultures may show preference for foreign carriers as an exhibit of social status (Teimourpour and Heidarzadeh Hanzaee, 2011), as such passengers value prestigious statements more than their low–power distance counterparts. *Long term–oriented* individuals appreciate loyalty with a service

provider (Bartikowski et al., 2011; Stamolampros et al., 2019b) and, as such, may show preference to domestic carriers in an effort to avoid compromising their long-term relationship. Passengers from more *indulgent* societies are expected to favor foreign carriers due to openness to experience stance, with the opposite expected from their restrained counterparts. With that in mind, we expect that cultural orientation will have an effect on the level of expressed satisfaction toward domestic and foreign carriers and therefore we examine the following hypothesis:

> **H2:** Cultural orientation moderates the level of passengers' online rating domestic bias toward domestic carriers.

From a conceptual point of view, our study is positioned on studying the formation of word-of-mouth behavior, and in particular the review valence. Our proposed model holds the effect of specific service characteristics as a baseline but also offers insights into other factors that may influence passengers' perceptions of service quality provided, such as cultural, COO, flight-specific and passenger-specific factors. Figure 1 outlines our theoretical model.

[Insert **Figure 1** around here]

3. Data, Methods, and Results

3.1 Dataset Description

Data were collected from the airline section of TripAdvisor, the premier reviews aggregator for all aspects of travel including hotels and restaurants. TripAdvisor provides an online platform where passengers share and rank their flight experiences with a specific carrier. For the purpose of this study a web script crawl the entire section of Tripadvisor that contained airline reviews.

[Insert **Figure 2** around here]

The crawler collected information about passengers'/reviewers' country of residence, name of air carrier, the specific route (which was used to compute the flight distance), the cabin class (*economy class*, *premium economy*, *business class*, *first class*), and an overall flight rating (in an ordinal categorical scale from 1 to 5). This overall rating is accompanied by an optional rating for eight specific aspects of the flight, namely: seat comfort, customer service, cleanliness, food and beverages, legroom, inflight entertainment, value for money, and check-in/boarding. An example of an online review and the relevant fields are presented in Figure 2.

We collected all the available reviews for the period between 2015 and 2018, which resulted in a sample of N=381,183 passenger reviews. A description of the dataset is found in Table 1. As regards the participation of passengers in the platform, we can observe that reviews arrive from passengers from 185 countries. US passengers have the highest participation in the sample, with 18.4% of the total population, followed by UK passengers, with 13.3%. In terms of non-English-speaking countries available in our sample, passengers from Italy and France post approximately 5.0% of total reviews. The availability of both the nationality of the passenger and the registration country of the headquarters of the airlines in our dataset allow us to contrast the mean passenger rating between "local" and "foreign" passengers.

[Insert **Table 1** around here]

As an initial screening, what we observe from Figure 3 is that for passengers from the majority of those countries with a high participation in our sample there is a tendency to be more positive toward airlines from their own country, with Poland (having LOT as the most popular domestic airline) exhibiting a substantial difference of almost one rating point (on a scale of 1 to 5).

[Insert **Figure 3** here]

Table 2 provides the descriptive statistics and Spearman rank correlations for each of the service aspects that passengers provide a rating for when they rate their experience with an airline. For domestic passengers, one can observe that all aspects exhibit high degrees of correlation. Specifically, the rating of the customer service aspect appears to have the strongest correlation coefficient with the overall rating *(ρ = 0.760, $p<0.001$)*, followed by value for money *(ρ = 0.728, $p<0.001$)*, while on the other hand inflight entertainment *(ρ = 0.533, $p<0.001$)* and legroom *(ρ = 0.599, $p<0.001$)* had the lowest degree of linear association. The latter could be possibly explained by different aircraft types and flight durations pooled in our sample, as well as the adoption of standard seat pitch size among the majority of airlines. For international passengers we can see that customer service exhibits a higher correlation than that observed with domestic passengers *(ρ = 0.773, $p<0.001$)*, with the other factors displaying quantitatively similar levels of correlation.

[Insert **Table 2** around here]

Non-country-adjusted descriptive statistics reflect differences between domestic and foreign passengers. While for certain attributes international passengers are more positive than domestic passengers are (e.g., seat comfort, inflight entertainment), the overall score related to service interactions shows that domestic passengers are more favorable toward their airlines than foreign passengers.

Our dataset allows us to examine the characteristics of these ratings by controlling for aspects such as traveler type and fare class in order to evaluate the hypotheses outlined above. We proceed with the empirical part of the analysis in the next section.

3.2 Empirical Results

3.2.1 Domestic bias in airline passenger ratings

We begin by establishing a baseline econometric specification, from which we are going to assess the existence of a more positive evaluation toward domestic carriers as well as the moderating effects of cultural dimensions in question. We consider as dependent variables in our model the review ratings (valence) passengers provide for the overall satisfaction and the individual service aspect. These variables are ordinal Likert-scale, taking values between 1 and 10 (1 to 5 in the case of overall satisfaction). We control for a number of passenger and flight characteristics. Passengers' expected and perceived service quality satisfaction is possibly influenced by directly observable factors such as the travel scope. To that extent, we control for differences in the perceived quality of these passenger types. Business travelers, who on average are more frequent and experienced customers than leisure travelers, should be more demanding and more prone to evaluating flights using their previous experiences. Differences in quality perception between these two types of customer stem from the fact that business travelers do not pay for their own travel, while this is not the case for leisure passengers (Doganis, 2002). Consequently, business customers will be more interested in the quality of the service provided than price. Davidson (2001)agrees that service quality is more important to business customers than price.

We control for flights' characteristics and specifically the length of flight as a component that influences passenger satisfaction. Long-distance journeys (e.g., intercontinental flights), due to fatigue, exhaustion, greater seat discomfort, and longer interaction with personnel or even the higher cost, could lead to higher dissatisfaction among customers than short-haul flights. However, longer journeys are usually performed by larger aircraft, providing more services to passengers, which forms motives for greater satisfaction. It is not instinctively clear whether the positive or negative influence will dominate, but we expect differences in

passengers' evaluations between the two different types of flight. The same effect is also expected with multi-segment flights, although a negative relationship is more likely due to factors such as increased probability of delays or issues with mishandled (or lost) baggage or longer time to reach the final destination.

Let us therefore consider a passenger *i* traveling with an airline *j* on a particular flight *f*. We want to estimate the following model for each rating aspect.

$$\Pr(r_{ij} = L),$$

having:

$$r_{ij} = b_1 Domestic_i + b_2 IndirectFlight + b_3 \log(Distance_f) + b_4 \sum_{s=1}^{3} SeatType + u_l$$

where *l* indexes the elements of the rating scale, ranging from 1 to 5 for the overall rating and from 1 to 10 for each of the rating aspects. Coefficient b_1 captures the effect on rating of whether the passenger is from the same country as the airline (domestic) or from a foreign country (Domestic=1); b_2 and b_3 index the type of flight and the duration and coefficients b_4 and captures the effect of seat type (with economy class been the baseline value). We estimate the model for each of the rating aspects on the dataset and the results are provided in Table 3.

[Insert **Table 3** around here]

Results suggest that domestic passengers provide statistically significantly more positive ratings for overall satisfaction (Model 1), customer service (Model 3), ground service rating (Model 6), and check-in and boarding (Model 9). All of the above exhibit a significant positive relationship with local passengers when compared to international passengers. For all aspects that include service interaction, the effect of the domestic customer is positive. For standardized services with less or no human interaction the results are mixed, with positive and

negative signs for cleaning, legroom, inflight entertainment and price. As such, the results suggest that Hypothesis 1 is supported.

3.2.2 The moderating effect of cultural characteristics

Within the same econometric specification, we want to explore how airline culture affects passenger ratings and as such we are interested to evaluate the interaction between the passenger's COO (local or foreign) and the airline's cultural traits. Based on Hofstede et al. (2010) six cultural dimensions model, we added covariates for the following six dimensions: *power distance*, *individualism*, *masculinity*, *uncertainty avoidance*, *long-term orientation*, and *indulgence*. As such, our econometric specification becomes as follows:

$$r_{ij} = b_1 Domestic_i + b_2 IndirectFlight + b_3 \log(Distance_f) + b_{4s} \sum_{s=1}^{3} SeatType$$
$$+ \gamma_1 Domestic \times PowerDistance$$
$$+ \gamma_2 Domestic \times UncertaintyAvoidance$$
$$+ \gamma_3 Domestic \times LongTermOrientation + \gamma_4 Domestic \times Individualism$$
$$+ \gamma_5 Domestic \times Masculinity + \gamma_6 Domestic \times Indulgence$$
$$+ \delta_1 PowerDistance + \delta_2 UncertaintyAvoidance$$
$$+ \delta_3 LongTermOrientation + \delta_4 Individualism + \delta_5 Masculinity$$
$$+ \delta_6 Indulgence + u_l$$

where coefficients of interest γ evaluate the interaction effect outlined in H2 and coefficients δ are the control paths for moderation for each Hofstede cultural dimension. The results are shown in Table 4 and reveal an interesting outcome for the coefficients of interest.

[Insert **Table 4** around here]

For direct cultural effects, we found results that were similar to recent literature (Stamolampros et al., 2019b) in terms of direction. For the moderation effects our results agree

in the individualism and masculinity dimensions with the studies of Sharma (2011) and Yoo and Donthu (2005), but we found the opposite for the power distance, long-term orientation, and uncertainty avoidance dimensions. In order to evaluate the levels at which the interaction the effect of traveling with an airline from the same country affects providing ratings, we estimated marginal effects using the specification of Model 2. For the marginal effects calculation, we estimate a fractional logit (rather than an ordered logit) specification that allows for the mean estimation of the outcome variable (overall rating) rather than the cutoff points in the original specification. This also allows for a simpler visualization of the mean change on the average of the outcome variable.

[Insert **Figure 4** around here]

Figure 4 provides the marginal effects for change in passenger ratings for local and foreign passengers across the different levels of power distance. We can observe that, when power distance is above the middle level of the scale (measure from 1 to 100), ratings from domestic passengers become approximately one point on the rating scale lower than the average ratings of foreign passengers. On the other hand, for countries and airlines with lower power distance we observe the opposite effect, with the average rating of local passengers significantly higher than those of international passengers by one point on the rating scale.

Regarding collectivism (Figure 5), rating change is much steeper and shows that domestic passengers' ratings are higher than foreign passengers as we move more toward more collectivist cultures. This echoes the findings of Yoo and Donthu (2005), who also found that passengers from collectivist cultures evaluate domestic carriers more favorably than their individualistic counterparts do.

[Insert **Figure 5** around here]

With regard to the moderating effects of other dimensions (Figure 6), we observe that long-term orientation presents an effect that is similar to that of collectivism, as previously discussed. For uncertainty avoidance, we identify a negative effect, with the rating behavior of passengers from high–uncertainty avoidance cultures on a par with that of foreign passengers. For indulgence we find a similar direction with long-term orientation and collectivism, while for masculinity no moderating effect is observed. Apart from masculinity, results suggest that cultural dimensions moderate the tendency of local passengers to rate their airlines higher than international passengers do. As such, Hypothesis 2 is supported, providing links with previous theoretical results as well as other directions, which we discuss in the section that follows.

[Insert **Figure 6** around here]

In order to ensure model stability across different operationalizations of the classification of domestic and foreign passengers, we ran a series of robustness checks by using alternative operationalizations by clustering countries with similar dimensions (e.g., anglophone countries) and grouping their airline carriers as well. In addition, we also evaluated both the original and alternative specifications by including only one Hofstede dimension in the model each time (See Table 5). For all models the moderating effects of the cultural dimensions on the rating behavior of passengers are similar.

[Insert **Table 5** around here]

4. Theoretical and Managerial Implications

The present study has important implications for theory and practice. While there is an abundance of eWOM studies in extant literature, there is little theoretical focus on the antecedents of online ratings as a manifestation of confirmation/disconfirmation of a priori customer expectations. With regard to airline passengers, our study suggests that domestic bias

on online evaluations exists and is contingent upon cultural orientation. This is an intriguing assertion that complements previous efforts to identify the conceptual connection between culture and CE (Sharma, 2011; Yoo and Donthu, 2005) and positions the study at the core of a scholarly debate that invites attention on the effect of COO and CE in the service context – where normative theory development is indeed lacking. Our results demonstrate that culture moderates domestic bias effects, but not all dimensions are consistent with previous empirical evidence. In line with Sharma (2011) and Yoo and Donthu (2005), we confirm the directionality of individualism but our results display the opposite effect for power distance, uncertainty avoidance, and long-term orientation, presenting scholars with a second opportunity for theory development relevant to each constituent dimension.

For customers high in *power distance*, such a discrepancy may be explained by foreign products exhibiting social status, as in Teimourpour and Heidarzadeh Hanzaee (2011). For customers high in *uncertainty avoidance*, homogeneity in rating between foreign and domestic carriers could be interpreted by the risk-averse nature of those customers, which could lead them to search the attributes of the product and service in more detail (Donthu and Yoo, 1998). To reduce a product's uncertainty, customers will attempt to familiarize themselves with it, using formal or informal cues such as price, brand, or COO (Anne Lee et al., 2007; Lee and Lou, 1995). That will result in the preselection of services or products of the COO that is approved, which should eliminate any domestic bias effect. For interpreting the effect of *long-term orientation*, this can be explained by the customer and local carrier relationships, which are expected to be more prolonged and more likely to reflect a recursive experience compared to foreign carriers. This echoes key findings in previous studies (Ryu and Moon, 2009; Stamolampros et al., 2019b), where passengers may be reluctant to compromise their long-term relationships with a service provider, resulting in a more positive rating. In addition to the

previously examined dimensions this study also explores the effect of the newest Hofstede dimension, namely indulgence, which shows a positive moderating effect.

Our findings also hold clear practical value for professionals in the airline industry. We provide airline service providers with three important recommendations emanating from linkages between passengers' cultural characteristics and their subsequent service evaluations.

First, it is imperative to realize the effectiveness of eWOM, not strictly as a marketing tool but also consider its strategic implications as a performance indicator (Tirunillai and Tellis, 2012). As the nature of airline services is inherently intercultural, the interplay between COO, CE, and cultural orientation provides airline service managers with an opportunity to understand whether heterogeneity in customer beliefs regarding perceived service performance could be attributed to cultural differences or similarities among customers and service providers. This could support managers' decision-making at the strategic level.

Second, the domestic bias cultural contingency must also be taken into consideration, as passengers may rely more on COO when evaluating services (Ahmed et al., 2002). This suggests that airline service providers should consider their brand image in order to become more "local" or "international," depending on the bias direction. In addition, airline managers should also consider this contingency in their service encounter with passengers from particular countries of origin as this could aid the identification of patterns that are culturally relevant, for example when introducing new routes.

Third, the results of this study add further input in the discussion regarding the effective representation of airline rankings, which are often a subject of news and media coverage. As the results show, domestic bias is a significant factor in passenger evaluations of airlines. The influence of this factor on airline ratings, moderated by the cultural traits of each passenger, demonstrates that airline rankings that are solely based on convenience sample approaches are

prone to domestic and cultural bias. Review aggregators may wish to adjust these rankings as not only the overall rating but also the rating aspects may be prone to these biases as well (Stamolampros et al., 2019b).

5. Conclusions and Limitations

Our study contributes to the word-of-mouth literature by providing new insights into how COO effects might affect evaluations in the context of ratings in service encounters. While the majority of word-of-mouth studies consider the case of product evaluations from a set of single-sourced customer COO, our study of airline ratings provides an analysis of reviews using a pool of international passengers and as such examines ratings across multiple countries. Our findings show that airline passengers provide more positive evaluations toward domestic carriers and this effect is moderated by cultural orientation.

Our study has several limitations, which directly derive from the particular nature of online reviews as a source of information and the limitations related with Hofstede's framework in accurately capturing cultural orientation. More specifically, while we can only take advantage of information that is available, we are therefore not able to investigate other cultural or demographic factors that are not present in our dataset. In addition, we cannot perform the analysis at flight level as there are not enough observations for this type of analysis. However, controlling for different flight characteristics and passengers' characteristics, we alleviate these concerns. Moreover, passengers from a specific country may have more heterogeneous cultural traits than those described in Hofstede's framework as within-country variation exists (Sivakumar and Nakata, 2001). Although this is true the representativeness of the sample in terms of participation of many passengers from each country provides reassurance that the participants' cultural profile should converge to the average values. Another limitation of Hofstede's framework is the strong assumption that values are invariant over time. In that domain the recent study of Beugelsdijk et al. (2015) provides support that, although changes in

cultural values exist, the relative distance across countries remain stable. Finally, while we have indications of the COO effect, a thorough analysis will also require the use of instruments such as the CET-SCALE (Shimp and Sharma, 1987).

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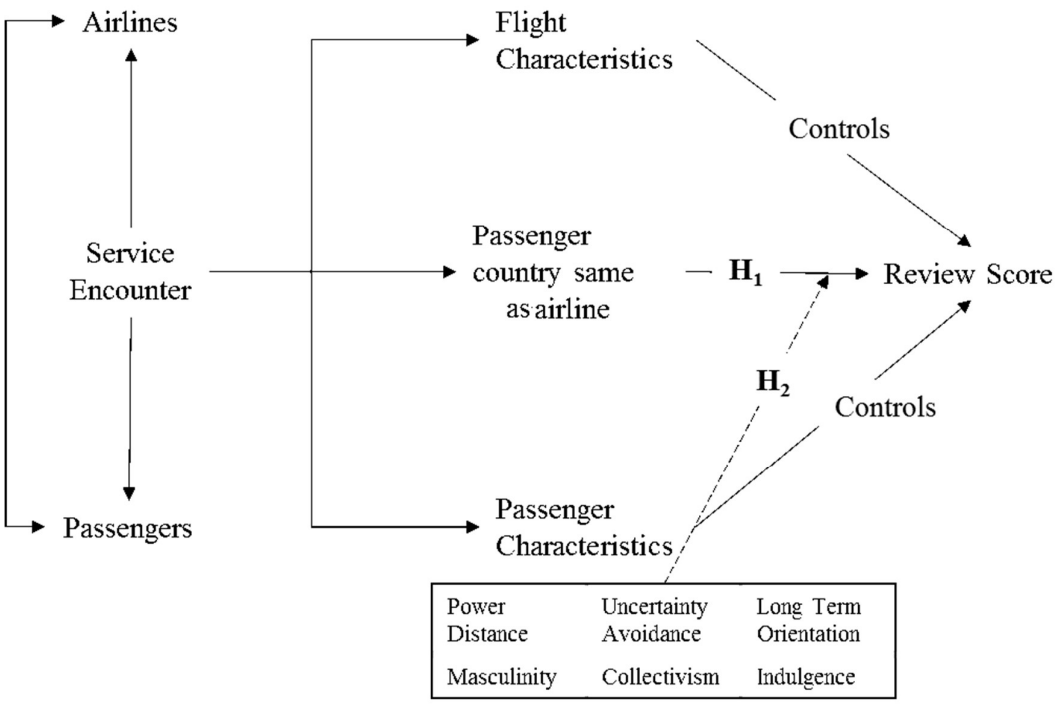

Figure 1: Theoretical model of our study. Dashed line depicts moderating effects.

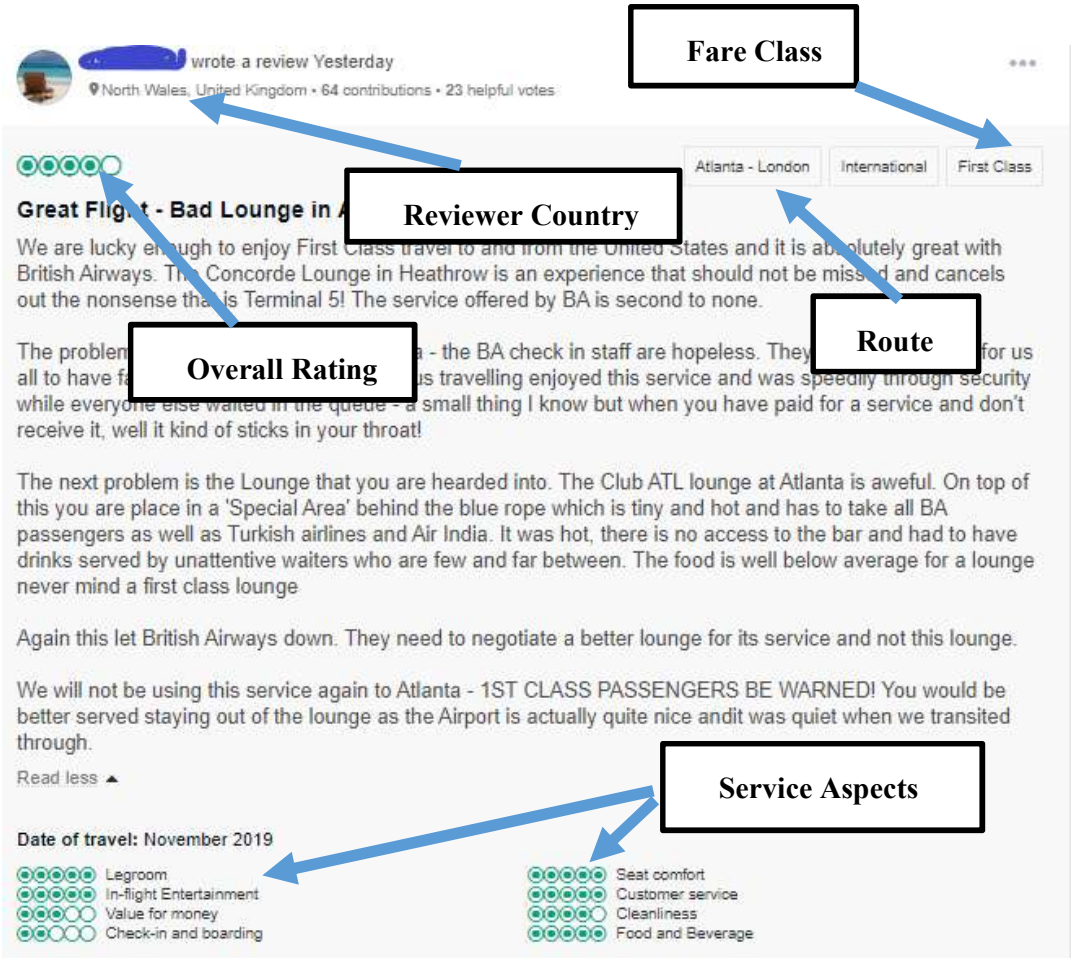

Figure 2: Example of an Online Review from TripAdvisor.

Table 1: Sample Characteristics

Total number of reviews	381,183
Reviews from foreign passengers	225,387
Reviews from local passengers	155,796
Years covered	2015–2018
Number of airlines	464
Number of airline countries	145
Number of passenger countries	202
% Passenger seat (fare class)	
Economy class	86.4%
Premium economy	2.9%
Business class	8.8%
First class	1.8%
% Top five countries	
United States	18.4%
United Kingdom	13.3%
Italy	5.8%
France	5.4%
Australia	5.2%

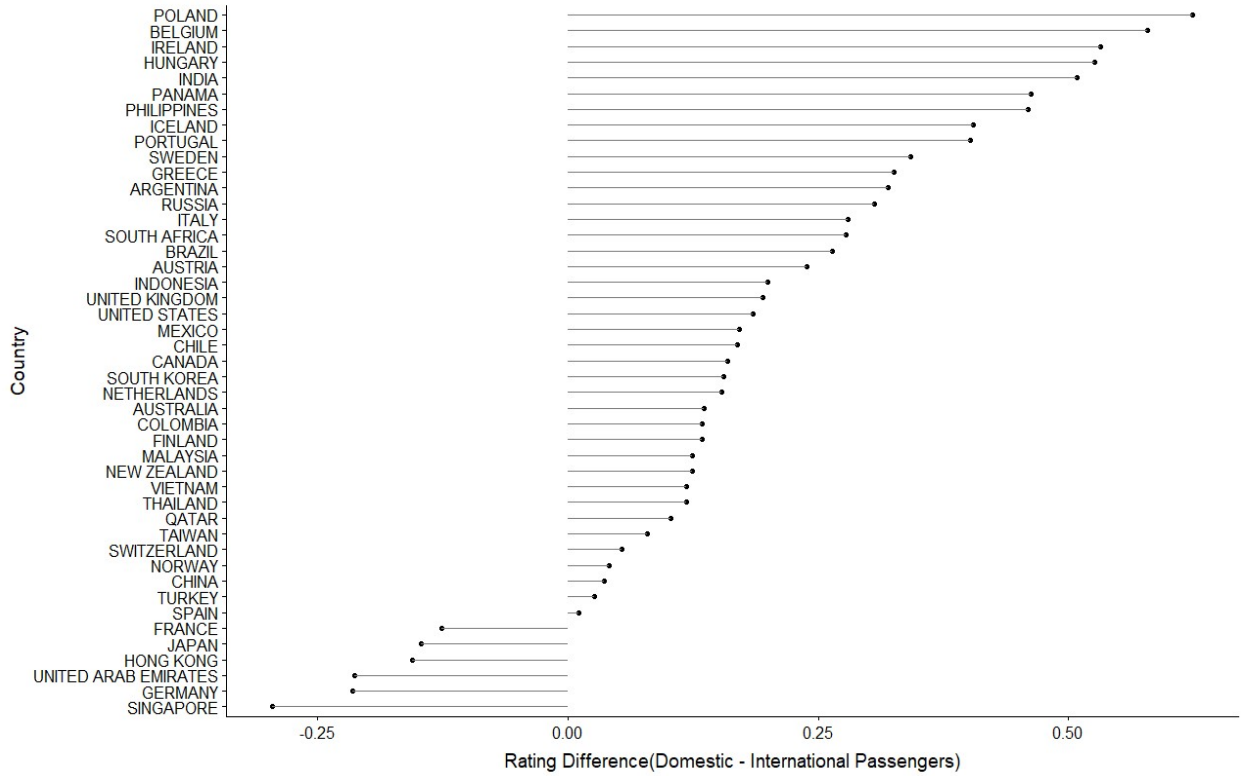

Figure 3: Differences in average overall rating between local and foreign passengers (left-hand side indicates the dominance of domestic passengers and right-hand side that of foreign passengers). Top 45 countries by the number of total reviews shown.

Table 2: Inter-item correlations and descriptive statistics for domestic (lower triangle) and foreign passengers (upper triangle)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Overall rating	**1**	0.684***	0.773***	0.707***	0.695***	0.619***	0.577***	0.719***	0.706***
2. Seat comfort	0.663***	**1**	0.613***	0.648***	0.628***	0.832***	0.576***	0.587***	0.570***
3. Customer service	0.760***	0.595***	**1**	0.707***	0.681***	0.557***	0.549***	0.676***	0.698***
4. Cleanliness	0.687***	0.627***	0.685***	**1**	0.638***	0.585***	0.539***	0.663***	0.685***
5. Food and beverages	0.667***	0.618***	0.642***	0.601***	**1**	0.578***	0.644***	0.586***	0.593***
6. Legroom	0.599***	0.823***	0.536***	0.556***	0.567***	**1**	0.529***	0.532***	0.521***
7. Inflight entertainment	0.533***	0.535***	0.504***	0.476***	0.582***	0.486***	**1**	0.452***	0.487***
8. Value for money	0.728***	0.593***	0.686***	0.670***	0.597***	0.531***	0.448***	**1**	0.627***
9. Check-in/boarding	0.694***	0.554***	0.690***	0.674***	0.571***	0.504***	0.445***	0.632***	**1**
Domestic									
Mean	3.73	3.47	3.82	3.96	3.28	3.47	2.94	3.63	3.88
(SD)	(1.26)	(1.11)	(1.3)	(1.02)	(1.25)	(1.14)	(1.44)	(1.23)	(1.22)
Foreign									
Mean	3.69	3.49	3.75	3.95	3.37	3.49	3.12	3.72	3.78
(SD)	(1.26)	(1.09)	(1.33)	(1.03)	(1.28)	(1.11)	(1.46)	(1.2)	(1.25)
Observations	372,657	346,526	346,952	275,738	263,587	346,202	312,417	343,547	276,505

.

Note: *Lower triangle provides Spearman's rank correlations for domestic passengers and upper triangle for foreign passengers. Missing observations omitted with casewise deletion. Correlations significant at * p<0.05, **p<0.01, ***p<0.001.*

Table 3: Ordered Logistic regression results for the rating aspects.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Domestic	0.094***	0.003	0.152***	0.048***	-0.040***	0.019**	-0.031***	-0.141***	0.191***
	(0.006)	(0.006)	(0.006)	(0.007)	(0.007)	(0.006)	(0.007)	(0.006)	(0.007)
Passenger fare class (base: economy)									
Premium economy	0.414***	0.904***	0.415***	0.450***	0.495***	1.210***	0.594***	0.112***	0.379***
	(0.018)	(0.019)	(0.019)	(0.021)	(0.020)	(0.019)	(0.018)	(0.018)	(0.021)
Business class	0.498***	1.485***	0.658***	0.661***	0.975***	1.970***	0.729***	0.196***	0.585***
	(0.011)	(0.012)	(0.012)	(0.013)	(0.013)	(0.012)	(0.011)	(0.011)	(0.013)
First class	0.591***	1.764***	0.828***	0.678***	1.045***	2.168***	1.073***	0.220***	0.801***
	(0.024)	(0.026)	(0.026)	(0.029)	(0.028)	(0.027)	(0.025)	(0.024)	(0.029)
Flight distance (log)	0.070***	0.059***	0.096***	0.086***	0.255***	0.094***	0.550***	0.005	0.090***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)
AIC	1084733	978656	989151	724018	796592	971739	951987	1004721	777368
Log likelihood	-542357	-489319	-494566	-362000	-398287	-485860	-475984	-502351	-388675
Observations	372,657	346,526	346,952	275,738	263,587	346,202	312,417	343,547	276,505

Notes: *(1): overall rating, (2): seat comfort, (3): customer service, (4): cleanliness, (5): food and beverages, (6): legroom, (7): inflight entertainment, (8): value for money, (9): check-in/boarding. Robust standard errors in parentheses. *p<0.05, **p<0.01, ***p<0.001.*

Table 4: Moderating impact of cultural dimensions on the overall rating and the ratings for cabin staff and ground service

	(1)	(2)	(3)	(4)
Passenger Fare Class (Base: Economy)				
Premium Economy	0.421*** (0.018)	0.301*** (0.014)	0.411*** (0.019)	0.377*** (0.021)
Business Class	0.514*** (0.011)	0.356*** (0.009)	0.674*** (0.012)	0.595*** (0.013)
First Class	0.683*** (0.024)	0.445*** (0.020)	0.888*** (0.027)	0.811*** (0.030)
Flight Distance (log)	0.084*** (0.003)	0.051*** (0.002)	0.099*** (0.003)	0.090*** (0.004)
Interaction Effects				
Domestic × Power Distance	-0.005*** (0.001)	-0.004*** (0.000)	-0.006*** (0.001)	-0.006*** (0.001)
Domestic × Uncertainty Avoidance	-0.003*** (0.000)	-0.003*** (0.000)	-0.000 (0.000)	-0.001** (0.000)
Domestic × Collectivism	0.008*** (0.000)	0.007*** (0.000)	0.006*** (0.000)	0.004*** (0.001)
Domestic × Masculinity	0.001 (0.001)	0.001* (0.000)	-0.001 (0.001)	-0.001* (0.001)
Domestic × Long Term Orientation	0.005*** (0.000)	0.003*** (0.000)	0.007*** (0.000)	0.003*** (0.000)
Domestic × Indulgence	0.005*** (0.001)	0.004*** (0.000)	0.005*** (0.001)	0.004*** (0.001)
Control Paths for Moderation				
Power Distance	0.004*** (0.000)	0.002*** (0.000)	0.005*** (0.000)	0.006*** (0.000)
Uncertainty Avoidance	0.001** (0.000)	0.001*** (0.000)	0.000 (0.000)	-0.001*** (0.000)
Collectivism	0.000 (0.000)	0.002*** (0.000)	0.001*** (0.000)	0.001*** (0.000)
Masculinity	-0.001*** (0.000)	-0.001*** (0.000)	-0.003*** (0.000)	-0.002*** (0.000)
Long Term Orientation	-0.002*** (0.000)	-0.001*** (0.000)	-0.003*** (0.000)	-0.002*** (0.000)
Indulgence	-0.002*** (0.000)	-0.001*** (0.000)	-0.000 (0.000)	0.001** (0.000)
AIC	1039644	407154	948798	745934
BIC	1039871	407348	949023	746154
Log Likelihood	-519801	-203559	-474378	-372946
Observations	357775	357775	333126	265453

Notes: Model numbers - (1): Overall Rating, (2): Overall Rating (fractional logit), (3): Cabin Staff, (4): Ground Service. Robust standard errors in parentheses. *p<0.05, **p<0.01, ***p<0.001.

Table 5: Moderating impact of cultural dimensions on overall rating (itemized effects for robustness check)

	(1)	(2)	(3)	(4)	(5)	(6)
Domestic	0.010 (0.013)	0.085*** (0.013)	0.019* (0.008)	0.195*** (0.019)	-0.072***(0.011)	0.097***(0.016)
Passenger fare class (base: economy)						
Premium Economy	0.313*** (0.014)	0.307*** (0.014)	0.312*** (0.014)	0.300***(0.014)	0.278*** (0.014)	0.298***(0.014)
Business Class	0.354*** (0.009)	0.359***(0.009)	0.350***(0.009)	0.354***(0.009)	0.342***(0.009)	0.351***(0.009)
First Class	0.391***(0.020)	0.381***(0.020)	0.429*** (0.020)	0.377***(0.020)	0.383***(0.020)	0.380***(0.020)
Flight Distance (log)	0.048*** (0.002)	0.043***(0.002)	0.050*** (0.002)	0.040*** (0.002)	0.038***(0.002)	0.045***(0.002)
Power Distance	0.004***(0.000)					
Domestic X Power Distance	0.001*** (0.000)					
Uncertainty Avoidance		0.003***(0.000)				
Domestic X Uncertainty Avoidance		0.000 (0.000)				
Collectivism			0.004*** (0.000)			
Domestic X Collectivism			0.002***(0.000)			
Masculinity				-0.003*** (0.000)		
Domestic X Masculinity				-0.002***(0.000)		
Long Term Orientation					-0.000 (0.000)	
Domestic X Long Term Orientation					0.003***(0.000)	
Indulgence						-0.003*** (0.000)
Domestic X Indulgence						-0.000 (0.000)
Constant	0.046 (0.033)	0.150*** (0.033)	0.110***(0.032)	0.541***(0.033)	0.425*** (0.033)	0.496*** (0.032)
AIC	416809	417071	416506	417177	411684	407959
BIC	416896	417157	416592	417264	411770	408045
Log likelihood	-208396	-208527	-208245	-208580	-205834	-203971
Observations	365937	365937	365937	365937	360910	357775

Notes: *(1): Power Disance, (2): seat comfort, (3): customer service, (4): cleanliness, (5): food and beverages, (6): legroom, Robust standard errors in parentheses. *p<0.05, **p<0.01, ***p<0.001.*

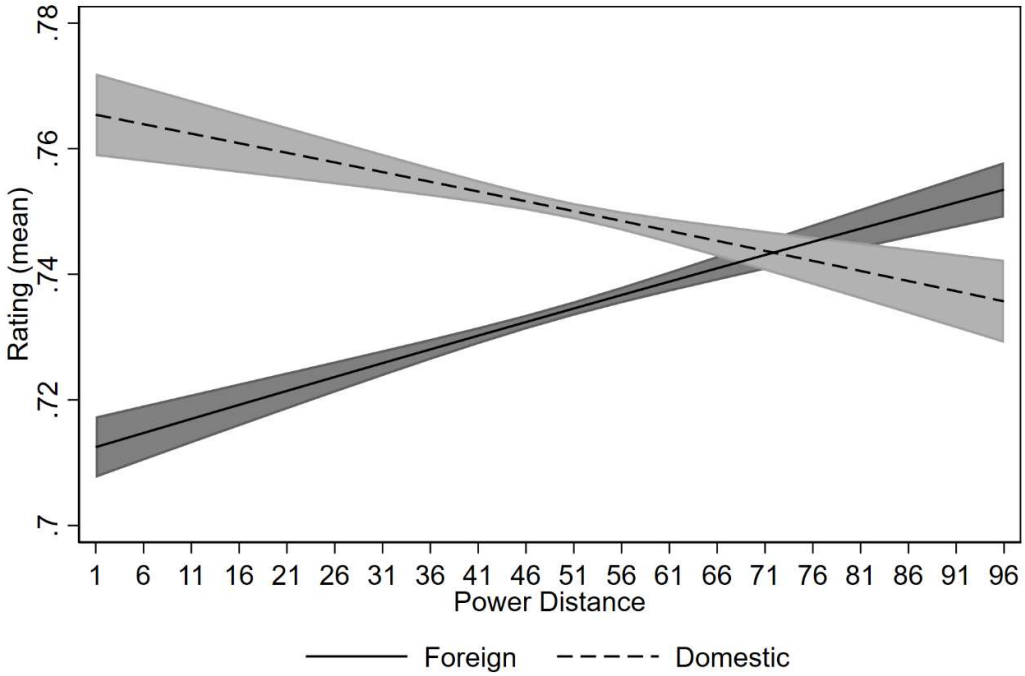

Figure 4: Marginal effects of the change in mean rating between local and foreign passengers for power distance.

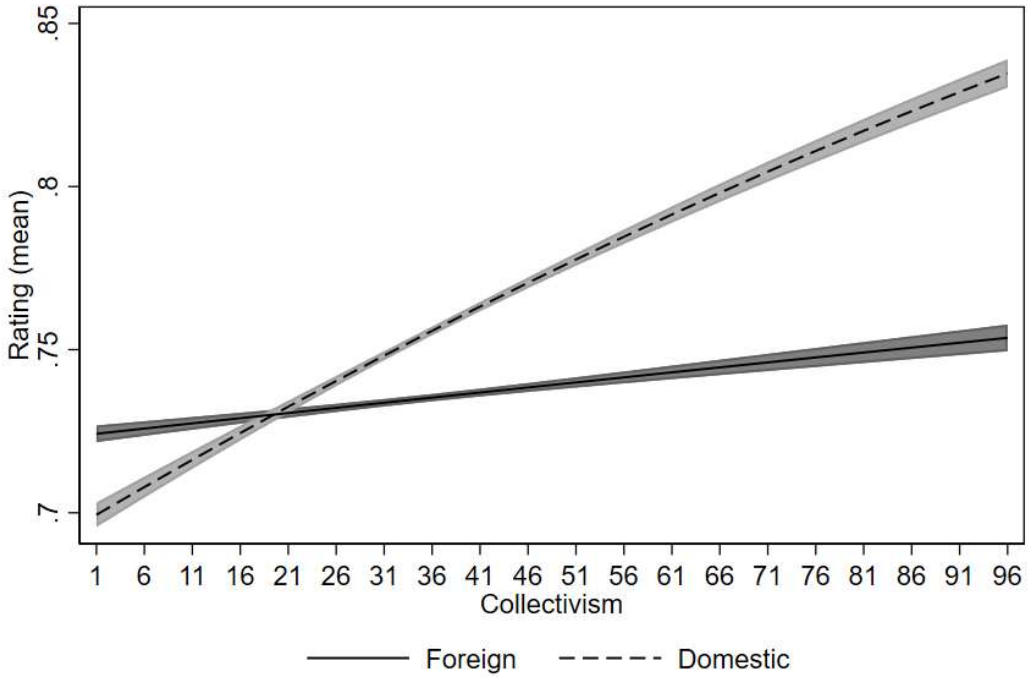

Figure 5: Marginal effects of the change in mean rating between local and foreign passengers for collectivism.

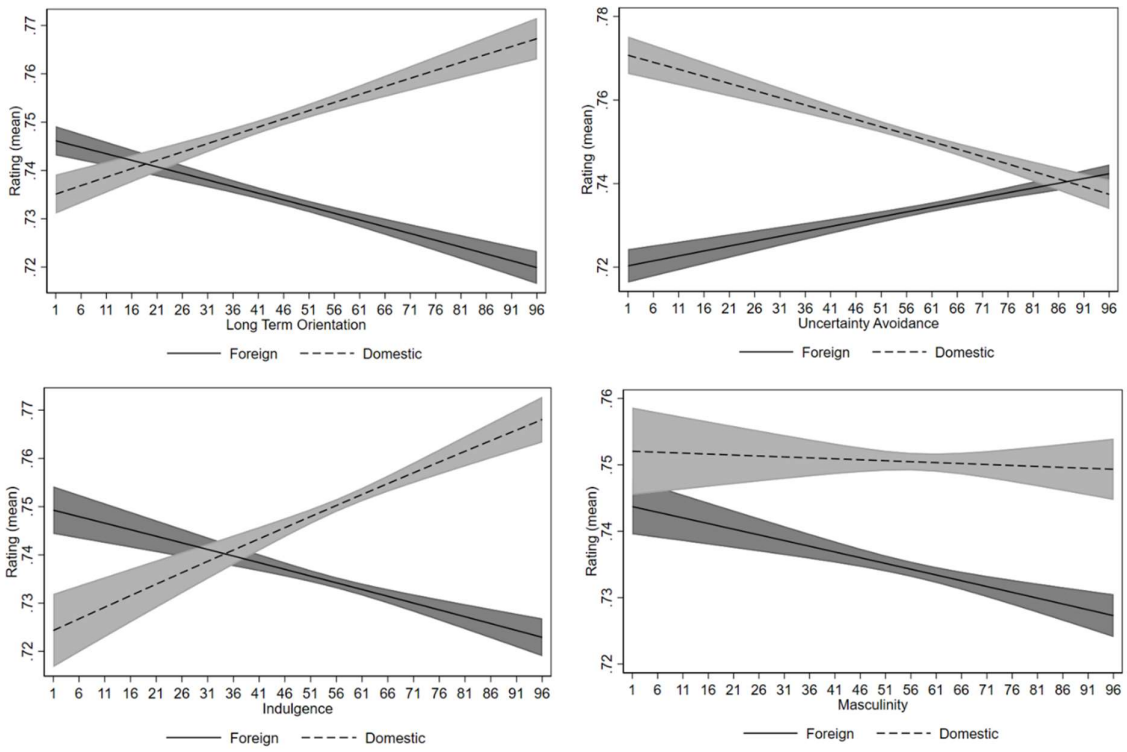

Figure 6: Marginal effects for the change in mean rating between local and foreign passengers for long-term orientation, uncertainty avoidance, indulgence, and masculinity.