
Article:
Alfarhan, U.F., Olya, H. orcid.org/0000-0002-0360-0744 and Nusair, K. (2022) How do prosperity and aspiration underlie leisure tourism expenditure patterns? Tourism Economics. ISSN 1354-8166

https://doi.org/10.1177/13548166211064215

Alfarhan UF, Olya H, Nusair K. (2022). How do prosperity and aspiration underlie leisure tourism expenditure patterns? *Tourism Economics*. doi:10.1177/13548166211064215

How Do Prosperity and Aspiration Underlie Leisure Tourism Expenditure Patterns?

ABSTRACT

This research advances the current knowledge of tourism expenditure by adapting a new analytical approach to understand expenditure differentials along their conditional distributions, based on multiple segmentation criteria. Using data from survey and secondary sources, we approximate tourists' required utilities via prosperity at their countries of residence, a macro-level criterion, and individual travel aspirations, a micro-level criterion. Subsequently, expenditure differentials between more and less prosperous/aspired tourists are decomposed into two components. First, group differences in expenditure covariates that represent tourists' relative consumption behaviors and, second, differences in the estimated returns to those covariates, measuring potential third-degree price discrimination. Our results guide policy makers in the tourism industry to develop pricing strategies capable of generating mark-ups within all viable segmentations.

KEYWORDS:

Prosperity, aspiration, expenditure decomposition, conditional quantile regression.

1. Introduction

Tourism expenditure is a complex and dynamic phenomenon. Socioeconomic attributes, trip-specific characteristics and psychologic traits are fundamental covariates of tourism expenditures (Brida & Scuderi, 2013). Tourism expenditure boosts the economy as expenditure-based segmentation research recognizes higher-spending tourists as means for profit maximization (Mortazavi & Lundberg, 2020). Segmentation criteria to profile tourists are often confined to

micro-level factors, such as nationality, tourists' motivations, generational cohorts, transportation choice, and information search behavior, used as proxies for preference differentials (e.g., Laesser & Crouch, 2006; Park et al., 2020).

The paradigm of tourism expenditures shifts from advocacy to a sustainability platform which is indicative of its sophistication and complexity (Mehran & Olya, 2019). There is a need for methodological advances to decode the complexity of differentials in tourism expenditure patterns based on both macro and micro-level criteria. This study fills this research gap in two ways. First, we approximate tourists' required utilities via their countries' prosperity levels and their individual travel aspirations. Second, we decompose tourists' relative tourism expenditures into corresponding differences in their socioeconomic and behavioral expenditure covariates (aka their relative consumption behaviors), and differences in the estimated incremental returns at which such covariates transmute into monetary outlays via market exchange (aka potential third-degree price discrimination).

2. Methodology

A rational consumer minimizes expenditures subject to prices and a predetermined level of required utility (Mas-Colell et al., 1995). This yields consumers' compensated demands, $f(x; p, u)$, and their expenditure functions, $e(p; x, u)$. For any two consumers with different levels of required utility, $(u^h > u^l)$, the differential in optimal expenditures could be due to higher quantities demanded at constant prices, $e^h(p;\ x^h, u^h) - e^l(p;\ x^l, u^l) > 0$, higher prices paid for constant quantities, $e^h(p^h; x, u^h) - e^l(p^l; x, u^l) > 0$ or both, (Alfarhan et al., 2021a).

Since utility, u, is a complex unobserved construct influenced by a dynamic set of elements within tourists' macro and micro-level environments, we approximate for differentials

in their required utility via the Legatum Prosperity Index™ (Legatum, 2020), and their revealed individual travel aspirations, simultaneously. Based on these two criteria, we disaggregate tourists' relative optimal expenditures into correspondingly relative consumption behaviors, $e(p; \partial x, \partial u)$, and an upper bound for third-degree price discrimination, $e(\partial p; x, \partial u)$.

2.1. Data

For method demonstration, a rich set of data from international leisure tourists to Oman is used. To collect data using survey, we approached respondents who waited to depart from Muscat International Airport in 2019. In total, 1042 individuals completed the survey, reported staying within budget a priority and rated questions about their travel aspirations. Details on the sampling approach are provided in Alfarhan et al.'s (2021a, 2021b) research. Aspiration (A) is the weighted average of three utility-generating components, namely, escape and relaxation (three items), self-deployment (five items) and stimulation (four items), following Pearce and Lee (2005). For each of the 12 items, respondents answered the question of "*In considering your current trip, how important was it to you that you [item]?*" on a five-point Likert scale. The associated component analysis rendered explained variations ranging between 50.3% and 77.8%, Kaiser-Meyer-Olkin statistics ranging between 0.812 and 0.915 and Cronbach's alpha values of 0.829, 0.854 and 0.715 for the three components, respectively. The sample median for aspiration is 3.92.

Prosperity (P) is the five-year (2015-2019) average of the tourist's country of residence's Legatum index. This index is based on 12 pillars within the domains of Inclusive Societies, Open Economies and Empowered People, with an in-sample median of 76.68. We stipulate that this index is more indicative of the complexity of tourism expenditure and more closely related to the

distribution of tourists' individual preferences than other macroeconomic measures (e.g., per capita GDP). As shown in Figure 1, sample N_A^P where $P = \{h, l\}$ and $A = \{h, l\}$ is identified into four mutually exclusive and exhaustive subsamples, namely tourists with above-median prosperity and aspiration N_h^h (the north-east panel), below-median prosperity and above-median aspiration N_h^l (the south-east panel), above-median prosperity and below-median aspiration N_l^h (the north-west panel) and below-median prosperity and aspiration N_l^l (the south-west panel).

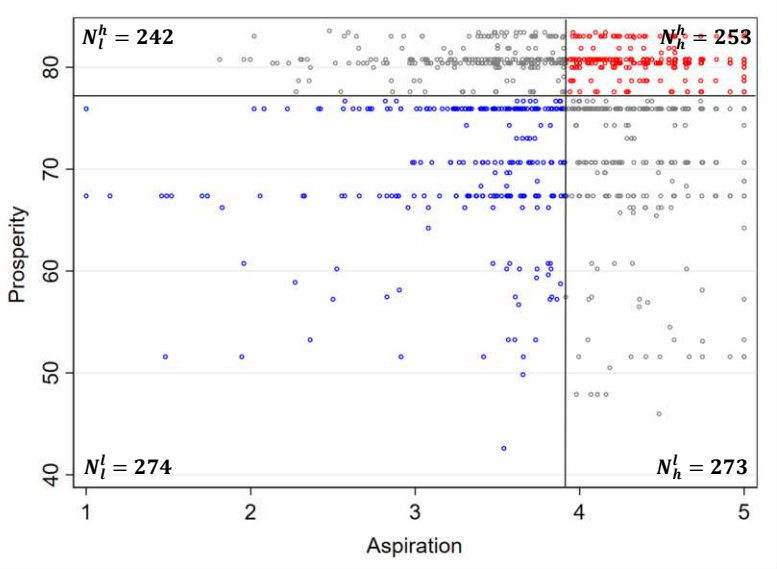

Figure 1. The distribution of tourists by prosperity and aspiration.

Figure 2 illustrates the descriptive statistics of our two main groups. N_h^h tourists spend on average 37.4% more than N_l^l tourists. They are more senior and wealthier. Furthermore, 7.3% less of N_h^h tourists are married and 5.7% less travel via economy class. In terms of accommodation, 17.3% more of N_h^h tourists stay at five-stars hotels, whereas 13.7% less stay at four-stars hotels. Also, N_h^h visit more sites, 14.2% are more likely to be first-time visitors and stay one extra night at the destination. These socioeconomic and behavioral differences define their relative consumption behaviors in this paper, induced by the reported differences in their prosperity and aspiration.

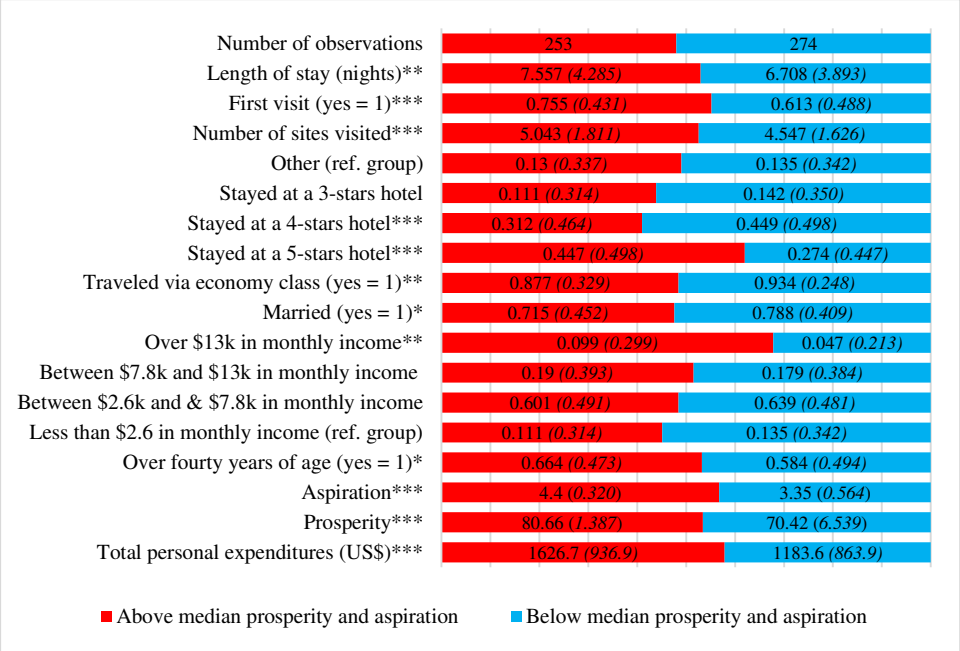

Figure 2. Means and standard deviations (between parenthesis) of expenditures and expenditure covariates, based on relative prosperity and aspiration.
*,** and *** denote that the difference is statistically significant at 10%, 5% or 1% probability levels.

2.2. Analytical approach

This research proposes a novel approach to model relative expenditures by integrating the conditional counterfactual quantile decomposition structure of Chernozhukov et al. (2013) with the mean-level structure proposed by Shamsuddin (1998). The former allows for the decomposition of an estimated differential on the basis of a single segmentation criterion, whereas the latter enables conducting the decomposition using multiple criteria.

Define E as the natural logarithm of total personal tourism expenditures excluding airfare and X as the set of expenditure covariates as reported in Figure 2. The distributional difference in expenditures between N_h^h and N_l^l tourists can be expressed as:

$$\Delta F_E = \Delta F_E^P + \Delta F_E^A = \left[\int F_{\left(E_h^h|X_h^h\right)} dF_{X_h^h} - \int F_{\left(E_h^l|X_h^l\right)} dF_{X_h^l}\right] + \left[\int F_{\left(E_h^l|X_h^l\right)} dF_{X_h^l} - \int F_{\left(E_l^l|X_l^l\right)} dF_{X_l^l}\right] \quad (1).$$

By means of the conditional quantile regression process $Q_E(\tau|X) = X\beta(\tau) + \upsilon$ (Koenker & Bassett, 1978)[1], and the counterfactual distributions (C_1, C_2) of expenditures $\Delta Q_E^{C_1}(\tau|X) = X_h^h \beta_h^l(\tau)$ and $\Delta Q_E^{C_2}(\tau|X) = X_l^l \beta_h^l(\tau)$, each of the two terms on the right-hand side of Eq. (1) may be disaggregated into the quantile (τ) effects of tourists' relative consumption behaviors and an upper bound of third-degree price discrimination such that:

$$\Delta Q_E(\tau|X) = \Delta Q_E^P(\tau|X) + \Delta Q_E^A(\tau|X) = \left[(X_h^h - X_h^l)\beta_h^l(\tau)\right] + \left[X_h^h\left(\beta_h^h(\tau) - \beta_h^l(\tau)\right)\right] + \left[(X_h^l - X_l^l)\beta_h^l(\tau)\right] + \left[X_l^l\left(\beta_h^l(\tau) - \beta_l^l(\tau)\right)\right] + (\upsilon_h^h - \upsilon_l^l) \quad (2).$$

The first and third terms on the right-hand side of Eq. (2), tourists' relative consumption behaviors, are the distributional differences in their expenditure covariates, evaluated at estimated constant incremental returns. The first term corresponds to the differences induced by tourists' relative prosperity and the third term corresponds to the differences induced by their relative aspiration.

The second and fourth terms, potential third-degree price discrimination, are the distributional differences in the estimated incremental returns at which constant expenditure covariates are transformed into monetary outlays via market exchange. The second term is based on relative prosperity and the fourth on relative aspiration.

3. Results

Results of the conditional counterfactual quantile decomposition of expenditures are reported in Table 1. Column (1) reveals that the expenditure differential between N_h^h and N_l^l tourists declines from 64.7% to 29.9% between the 10th and the 90th percentiles. The aggregate impact of

[1] Detailed information on the quantile regression outputs using this data set are presented in Alfarhan et al. (2021a, 2021b).

tourists' relative prosperity, the sum of columns (2) and (3), accounts for 84% at median-level expenditures. The impact of relative aspiration accounts for the remaining median-level differential by passing through tourists' relative consumption behaviors, column (4), exclusively[2].

Table 1. The conditional counterfactual quantile decomposition of expenditures by prosperity and aspiration, Eq. (2).

Percentile (τ)	Expenditure differential	Prosperity		Aspiration	
		Consumption behavior	Third-degree price discrimination	Consumption behavior	Third-degree price discrimination
	(1)	(2)	(3)	(4)	(5)
	$\Delta Q_E(\tau\|X)$	$[(X_h^h - X_h^l)\beta_h^l(\tau)]$	$\left[X_h^h\left(\beta_h^h(\tau) - \beta_h^l(\tau)\right)\right]$	$[(X_h^l - X_l^l)\beta_h^l(\tau)]$	$\left[X_l^l\left(\beta_h^l(\tau) - \beta_l^l(\tau)\right)\right]$
P10	0.647***†	0.079*	0.328***	0.105**	0.135**†
	(0.089)	(0.053)	(0.104)	(0.061)	(0.08)
P25	0.550***†	0.097**	0.28***	0.093**	0.08
	(0.079)	(0.046)	(0.083)	(0.044)	(0.078)
P50	0.343***	0.076**	0.212***	0.078**	-0.023
	(0.065)	(0.035)	(0.065)	(0.041)	(0.059)
P75	0.298***	0.062**	0.168***	0.085**	-0.017
	(0.079)	(0.036)	(0.065)	(0.038)	(0.058)
P90	0.299***	0.067**	0.139**	0.084**	0.009
	(0.077)	(0.032)	(0.073)	(0.04)	(0.069)
	Bootstrap inference on the counterfactual quantile processes[a]				
No effect ∀ τ	0.000***	0.030**	0.000***	0.010**	0.480
Constant effect ∀ τ	0.010***	0.87	0.3	0.940	0.130

[a] Cramer-von Mises-Smirnov probability values
*,**,*** denote the statistical significance at 10%, 5% or 1% probability.
† Statistically different from the median-level estimate.
Source: Authors' calculations.

Columns (2) and (4) show that tourists are heterogeneous in terms of their consumption behaviors as induced by both prosperity and aspiration. The monetary impacts of these two behavioral components account for median-level shares of 22% and 23%, respectively. These shares are generalizable along the distributions of expenditures, as per the corresponding bootstrap inference.

[2] According to Alfarhan et al. (2021a), there was no impact of tourists' unobserved heterogeneity on expenditure differentials using the same data set employed in this paper. Therefore, it is sensible to assume negligibility of such impact in this methodological exercise.

Third-degree price discrimination, on the other hand, is solely based on tourists' prosperity levels. Column (3) indicates that estimated relative incremental returns to expenditure covariates within the prosperity criterion account for 62% of the median-level differential, whereas column (5) reveals no such effect within the criterion of aspiration. Intuitively, this signals that marketers at this destination are either unable to observe differentials in tourists' travel aspirations or have no aspiration-based segmentation strategies in place.

4. Conclusion

This paper constitutes a methodological contribution by modelling the expenditure effects of tourists' relative consumption behaviors and potential third-degree price discrimination within the double macro and micro-level criteria of prosperity at the country of residence and individual travel aspiration. Prosperity and aspiration contribute to shaping tourists' expenditure patterns.

We demonstrate that both criteria translate into observable heterogeneities in tourists' consumption behaviors, both leading to corresponding differentials in their tourism expenditures (Figures 3 and 4 in the appendix). Since third-degree price discrimination is a marketing strategy whose efficacy is contingent on, among other conditions, the ability to identify market segments who portray different consumption behaviors, the previously observed heterogeneities constitute ground for segmentation strategies based on both prosperity and aspiration together.

Evidence from the current destination, however, suggests that third-degree price discrimination is entirely based on observed relative prosperity levels. Relative aspirations, which may not be directly observable to destination marketers, induce no price mark-ups. These results imply room for revenue gains in the tourism industry, contingent on the ability of destination marketers to identify aspiration-induced differentials in behavioral covariates such as

accommodation choice, sites visited and visitation frequency (Figure 4). Accordingly, marketing strategies may be introduced or redesigned, in order to generate price mark-ups within the aspiration criterion as well.

The results of this paper are based on post-travel data. Future research may capture data before and after travel to offer a comprehensive perspective on tourist's behaviors including the travel decisions. Additionally, decomposing expenditure differentials via multiple segmentation criteria may turn data-demanding rather abruptly. That is because the sample must be subdivided into mutually exclusive and exhaustive subsamples, whilst each remaining sufficiently sizable for the quantile estimation processes. Furthermore, travel aspirations are a-priory unobservable and may not be directly proposed as a segmentation criterion in practice. We recommend tourism marketers to find an observable instrument (e.g., information search behavior) to approximate for aspirations.

References

Alfarhan, U. F., Nusair, K., Al-Azri, H., & Al-Muharrami, S. (2021a). Modeling expenditure differentials of international tourists by targeted utility: A synthesized theoretical and quantile decomposition approach. *International Journal of Consumer Studies*. doi:10.1111/ijcs.12683.

Alfarhan, U. F. , Nusair, K., Al-Azri, H., Al-Muharrami, S., & Hua, N. (2021b). Measuring the effects of tourists' relative willingness to spend and third-degree price discrimination on inbound tourism expenditure differentials. *Tourism Economics*. Doi:10.1177/13548166211030016.

Brida, J. G., & Scuderi, R. (2013). Determinants of Tourist Expenditure: A Review of Microeconometric Models. *Tourism Management Perspectives*. *6*, 28-40.

Chernozhukov, V., Fernández-Val, I., & Melly, B. (2013). Inference on counterfactual distributions. *Econometrica*. *81*(6), 2205-2268.

Koenker, R., & Bassett Jr., G. (1978). Regression quantiles. *Econometrica: Journal of the Econometric Society. 46*(1), 33-50.

Laesser, C., & Crouch, G. I. (2006). Segmenting markets by travel expenditure patterns: The case of international visitors to Australia. *Journal of Tourism Research*. *44*, 397-406.

Legatum (2020). The Legatum Prosperity Index, 14th edition. Last accessed on April 02, 2021, https://docs.prosperity.com/2916/0568/0539/The_Legatum_Prosperity_Index_2020.pdf

Mas-Colell, A., Whinston, M. D., & Green, J. R. (1995). Microeconomic Theory (Vol. 1). New York: Oxford university press.

Mehran, J., & Olya, H.G.T. (2019). Progress on outbound tourism expenditure research: A review. *Current Issues in Tourism*. *22*(20), 2511-2537.

Mortazavi, R., & Lundberg, M. (2020). Expenditure-based segmentation of tourists taking into account unobserved heterogeneity: the case of Venice. *Tourism Economics*. *26*(3), 475 – 499.

Park, S., Woo, M., & Nicolau, J.L. (2020). Determinant factors of tourist expenses. *Journal of Travel Research*. *59*(2), 267 – 280.

Pearce, P. L., & Lee, U. I. (2005). Developing the travel career approach to tourist motivation. *Journal of travel research*, *43*(3), 226-237.

Shamsuddin, A. F. M. (1998). The Double-negative Effect on the Earnings of Foreign-born Females in Canada. *Applied Economics*. *30*(9): 1187 – 1201.

Alfarhan UF, Olya H, Nusair K. (2022). How do prosperity and aspiration underlie leisure tourism expenditure patterns? *Tourism Economics*. doi:10.1177/13548166211064215

Appendix

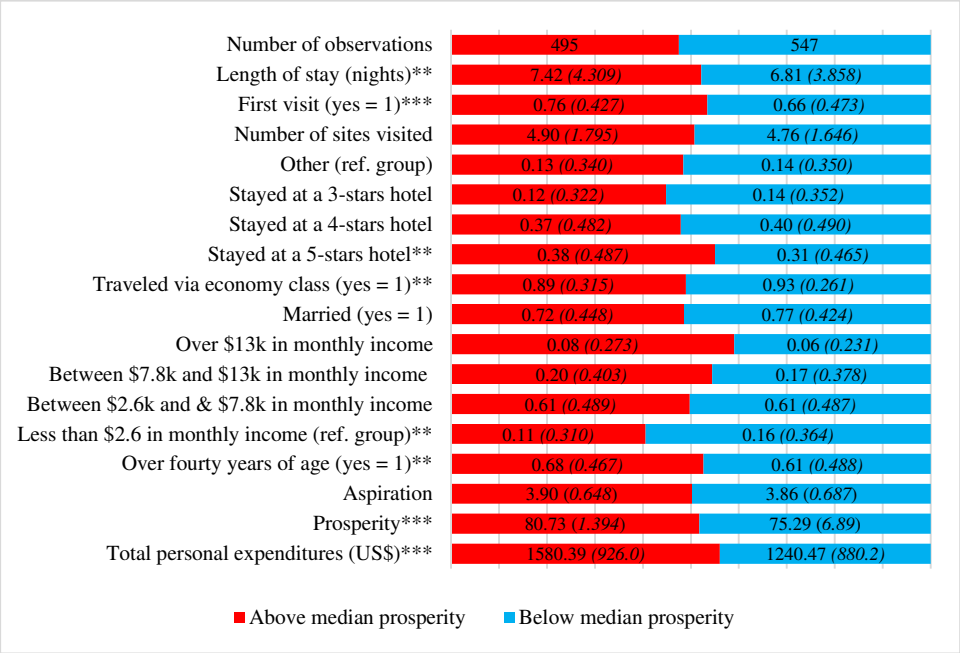

Figure 3. Means and standard deviations (between parenthesis) of expenditures and expenditure covariates, based on relative prosperity only.
*,** and *** denote that the difference is statistically significant at 10%, 5% or 1% probability levels.

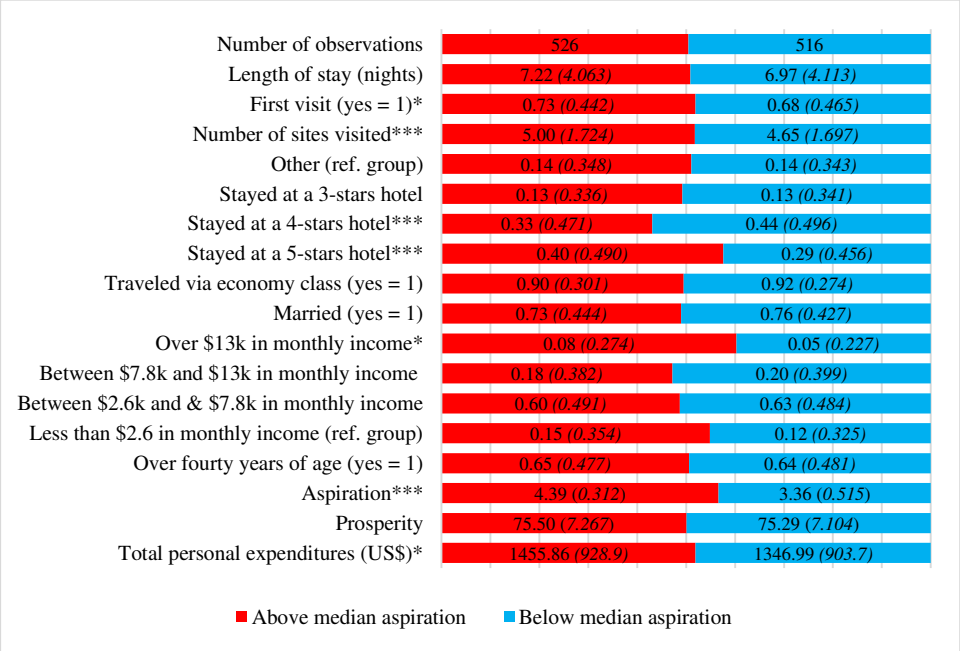

Figure 4. Means and standard deviations (between parenthesis) of expenditures and expenditure covariates, based on relative aspiration only.
*,** and *** denote that the difference is statistically significant at 10%, 5% or 1% probability levels.