Variability of Tourist Attraction on an International Boundary: Sonora, Mexico Border Towns

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VARIABILITY OF TOURIST ATTRACTION ON AN INTERNATIONAL BOUNDARY: SONORA, MEXICO BORDER TOWNS

BY

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ABSTRACT

This paper explores how and why tourism and tourist districts in border towns vary along a single international boundary. A perception about Mexican border tourism holds that the boundary itself is the primary stimulus to development. While almost every Mexican border town has some tourist function, the nature and extent of that activity will vary with a host of exogenous factors. We argue that Mexican border city tourism is largely a function of these diverse external factors more than simply a presence on the international boundary. Successful tourism in the Mexican border cities is linked to historic advantage and age of settlement, as well as access, degree of promotional effort, and media exposure. To illustrate this assertion, we compare tourist development and the creation and absence of tourist districts at two separate locations along the Sonora-Arizona border: Nogales and San Luis Rio Colorado.

INTRODUCTION

An axiom of political geographic understanding is that borders both repel and attract activity. Tourism is an activity especially common to political boundaries (38, 39). Along the nearly 2000-mile long border that separates Mexico from the United States, tourism has existed in some form for nearly a century. In a recent study of Mexican border towns, tourist functions were found in all 18 communities examined, primarily on the Mexican side of the boundary (6). Although Mexican shopping is an important activity on the American side of these border towns, it is not considered here. Unlike American tourist shopping in Mexican border towns, which is characterized by curios and souvenirs, and similar to Canadian-American cross-border shopping, Mexican border town residents chiefly shop for retail goods on the American side (18, 40, 43).

Tourism is Mexico's second major source of foreign exchange and a primary employment sector. In 1991, tourism generated circa USD $4 billion and employed nearly 2 million people (14). Historically, the Mexican border towns have been major day-trip tourist destinations and revenue accumulators. As early as 1968, the border accounted for 70 percent of tourist spending in Mexico (8).
While every border town has some tourist function, it is highly variable by location on the international boundary. The presence of the border is a necessary precondition for day tourism, but boundary location alone does not predict successful tourism. Rather, tourism success is linked to a suite of exogenous factors including historic advantage of location, access and connection to the other side of the border, and promotional campaigns and media exposure that create a tourist destination identity.

This paper compares tourist activity at two Mexican locations along the Sonora-Arizona boundary to demonstrate how factors other than proximity to a boundary shape tourism on the Mexico-U.S. border. Six Mexican towns are located along the Sonora-Arizona boundary (Figure 1), and four of these figure as tourist gateways/destinations (Naco and Sásabe are functionally non-tourist towns). This paper examines Nogales, Sonora, a successful tourist node, and contrasts it to San Luis Rio Colorado, Sonora, a city of comparable population size, yet one without a significant tourist presence. This assessment draws on data collected from U.S. and Mexican censuses, archival materials in local repositories, published guidebooks, and interviews and observations made in the field. An examination of the variability of tourist attractiveness along a single international boundary reveals how historical and geographical factors create the potential for tourism growth.

NOGALES

In 1997, tiny Nogales, Arizona, (population circa 19,500) ranked fourth in combined trade (import and export) among all U.S.-Mexico ports of entry behind Laredo, El Paso, and San Ysidro (37). While each of these locations lies adjacent to a Mexican border town, the nature of trade across the boundary is varied. A large part of this trade function at the Arizona border relates to the Mexican winter fresh produce grown in southern Sonora and Sinaloa and exported through Nogales, Sonora, to cold storage warehouses on the Nogales, Arizona, side of the boundary. Nogales, Sonora, (population 108,000 in 1990 according to the latest census (13) but local officials claim a population of 300,000 (22)) has been affected by considerable industrial activity where some 79 maquiladora assembly plants employ 31,232, which also contributes to border trade (41).

The Sonoran Economic Development Corporation reported that some 560,000 tourists visited Sonora from Arizona in 1990 generating more than USD $36 million (25); most of these visitors to Sonora (some 58 percent) entered via Nogales (33). To most North American visitors, Nogales, Sonora, is a shopping destination located three hours from Phoenix by interstate highway and less than one hour from Tucson (Figure 1). A recent guidebook called the town one of the cleanest and safest on the Mexican border (10).

Before Nogales, Sonora, was a tourist destination, it was a railroad junction, a gateway condition that ultimately influenced its trade appeal and tourism potential. Founded as a railroad crossing on the international frontier in 1880, Nogales became a node on the trade route that linked the Mexican port of Guaymas on the Sea of Cortez (Gulf of California) with Tucson, Arizona (Figure 1). In effect, Nogales became a pivot point along the stem of a giant T that linked Tucson to Los Angeles, El Paso, and Guaymas. Imagine Tucson at the intersection of the cross-bar creating the T with Los Angeles to the west and El Paso to the east like antipodes of the T top. Nogales was a hinge point on the stem of the T which was, in reality, a Southern Pacific railroad extension that connected Tucson to Guaymas.
Although Mexican Nogales and American Nogales were platted as two separate political entities, the towns developed as a single, bi-cultural community (35). Nevertheless, Mexican Nogales had always maintained a 50 ft. setback from the boundary. The U.S. side, at one time called Line City, was built right up to the border. In 1897, the U.S. attorney general, by presidential proclamation, ordered the clearing of all buildings within 60 ft. of the international boundary, resulting in a 110 ft. aisle between the two towns (32). In 1917, as a result of hostilities associated with the Mexican Revolution, a fence was erected by the U.S. government on its side of the boundary, physically dividing Ambos Nogales, or the two Nogaleses, as the border community came to be known (34).

Before Prohibition in 1918, Nogales, Sonora, evidenced no tourist functions except the public market, which was run by Chinese immigrants and reportedly an outlet for fresh vegetables and provisions. By the early 1920s, however, Nogales, like other Mexican border towns, was a popular destination for Americans who sought entertainment in Mexico's "wet palaces." The Sonoran border town became locally and regionally known for its cafes and restaurants, many with dance floors and orchestras during lunch and dinner hours and where patrons could order booze with legal disregard for the Volstead Act—the U.S. law that created Prohibition.

The town's tourist reputation was boosted in 1927 when Nogales became the northern terminal in Mexico of a railroad system that linked Mexico City and San Francisco via Guadalajara (36). This connection allowed American west coast travelers access to central Mexico via Nogales rather than routing through El Paso-Ciudad Juárez. In 1950, the Mexican west coast highway was paved between Sinaloa, south of Sonora, to Nogales in order to facilitate produce distribution from Mexico to the United States. Nogales, therefore, became one of a select few border locales with paved highway access to the interior of Mexico, making the Sonoran border town a major international transit point, in the same league with Ciudad Juárez and Nuevo Laredo on the Texas border. Traffic through Nogales to Mexico's interior nearly doubled between 1954 and 1959, climbing from 38,000 to 73,000 persons (35).

Ten years later in 1969, Interstate 19 linked Nogales, Arizona to Tucson. The border was now easily accessible to Tucson and by extension to Interstate 10, to Phoenix. Today, Mexican Nogales is a tourist destination serving a hinterland of more than 3 million people. Only Tijuana across from San Diego and Southern California is proximate to a larger tourist market. This accessibility of Nogales to large urban areas with potential tourists should not be underestimated. Pearce notes that "[f]or developments which do not constitute a tourist ensemble in themselves, proximity to the market becomes particularly critical" (31, p. 33). If not for the foundational access of this twin-town junction along the border to markets in both countries (particularly tourists from Arizona), Nogales could not have developed into the tourist destination that it has become even with the presence of other factors. Relative to other tourist destinations, Nogales is much closer to Tucson than Tucson is to other major Arizona attractions, including Phoenix and the Grand Canyon. The town is even closer for Phoenix-based tourists to visit than the Grand Canyon. Its relative location, therefore, is also a major factor in its popularity among tourists.

Historical linkage and access to a consumer market are critical to tourist potential on the Mexico-U.S. border, but attraction must be cultivated and promoted. In 1961, the Mexican federal government created
PRONAF, the Mexican National Border Program: Three of the ten aims of PRONAF were to stimulate tourist trade at the border, especially for visiting families, to bring to the border zone the range of artistic craft products of interior Mexico, and to transform the physical appearance of border towns as showcase gateways to Mexico (8). Nogales, Sonora, benefited disproportionately from PRONAF, which further stimulated the community's tourist appeal.

PRONAF director Antonio J. Bermúdez, a norteño or northerner, convinced then Mexican President Adolfo López Mateos to invest in the Sonoran town. Bermúdez showed that Nogales residents assumed the second highest per capita purchases of foreign goods among all Mexican border towns, exceeded only by Tijuana. Bermúdez envisioned a boosting of the tourist function of Nogales so that tourist revenue in dollars might offset the outflow of Mexican pesos spent by Sonoran shoppers who crossed into Arizona daily to purchase goods. Nogales, Sonora, received 60 million pesos from PRONAF, an amount exceeding that spent by the federal government in Tijuana. These resources allowed the town to transform its gate crossing and construct major boulevards to accommodate increased tourism. A gigantic double-winged, multi-laned auto canopy replaced the old single-lane main-gate crossing, and new immigration, customs, and other public facilities were installed. The city's major boulevards, including Avenidas López Mateos, Sonora, and Ruiz Cortines, were constructed parallel to the old railroad corridor to relieve auto congestion that had nearly crippled Avenida Obregón, then the city's chief arterial leading traffic south of Nogales to the Mexican interior. More recently, Sonora constructed a high-speed toll road, Mexico 15, linking Nogales to the state capital and largest city, Hermosillo, three hours to the south (Figure 1).

PRONAF also stimulated the shift in tourist districts within Nogales, helping shape a new landscape of tourism. Since Prohibition, Calle Elias, immediately south and literally across the street from Morley Avenue and downtown Nogales, Arizona, had been the principal visitor district of the Mexican border town. Calle Elias concentrated the town's premier restaurants and curio stores, creating Nogales' first tourist strip. A new emphasis on auto tourism combined with the transformation of the main gate crossing that resulted from PRONAF prompted a shift of the tourist strip west to Avenida Obregón. Curio stores, liquor outlets, and bars became the mainstay of this new strip, but gift stores that offered perfumes and silver were also part of the new tourist landscape along Obregón, which only a decade before had been a chiefly commercial street servicing nearby residential neighborhoods.

A 1998 survey counted nearly 400 businesses in the central business district of Nogales, Sonora, and some 78 businesses were stand alone curio stores and gift shops (5). This included nine curio store malls or shopping centers that alone contained 108 independent stalls with separate owner-operators. Furthermore, some 106 separate sidewalk curio vendors were counted in the tourist district, along with some 13 ambulatory ones. This total did not include eateries, jewelry and drug stores, and lodgings, which also contribute to the community's tourist appeal.

While Nogales, Sonora, is accessible to Arizonans year round, it is especially active during the winter tourist season—October through May—when thousands of snowbirds seek temporary residence in southern Arizona. The Mexican state tourism office in Nogales, Sonora, declares that 700,000 tourists visit the border town each year generating a conservative spending estimate of USD $7 million (2, 3). Nogales is not only
the major Mexican border town on the Arizona line, it is also one of the most successful tourist destinations on the entire Mexico-U.S. international boundary.

SAN LUIS RÍO COLORADO

According to the 1990 Mexican census, San Luis Rio Colorado is a town of some 110,000 residents (13), but it is currently estimated at around 132,000. The settlement originated as a small farming hamlet, but took urban form early in the twentieth century (42). Officially founded in 1917 as a center for government-sponsored agricultural developments in the immediate hinterland, San Luis Rio Colorado was organized to bring the remote and relatively unpopulated delta region on the east side of the Colorado River that separates Sonora from Baja California into the national domain (Figure 1). Only a dozen years earlier, Mexico witnessed the founding and development of nearby Mexicali, west of the Colorado River, as an American colonization and agricultural development scheme and Mexico City wanted desperately to overt a similar experience in northwest Sonora (6). Eventually many Mexican military personnel and their families accompanied the colonization effort in San Luis Rio Colorado and themselves turned to farming (42). While the original farming families had located in the river flood plain to take advantage of needed irrigation, the city was platted on a sand dune river terrace to avoid the perils of potential flooding (27).

Mirroring the city's farming origins, 27.8 percent (9,651) of the economically employed were in the agricultural, ranching and fishing sector in 1990 (13). Today, more than 66,000 acres in the municipio are planted to cotton, wheat, corn and alfalfa, and proximity to the Sea of Cortez provides a prosperous marine economy (24). The farming culture of the settlement is notable in the landscape as well where irrigated fields flank the western and southwestern edges of the community, and murals recently painted on the U.S.-built border fence depict agricultural themes. Tourism, by contrast, is much less prominent, and only 3 percent of foreign visitors to Sonora enter via San Luis Rio Colorado (33).

The Mexican census noted that only 4.4 percent (1,540) of the economically employed were in the restaurant/hotel sector. By comparison 2,084 or 5.3 percent of the economically employed in Nogales, Sonora worked in this same sector. This small, yet significant difference is attributable to the much smaller tourist draw of San Luis Rio Colorado. A 1998 survey in the central business district revealed markedly fewer tourist enterprises in San Luis Rio Colorado with only a handful of truly tourist functions (5). Bars and restaurants were certainly present, but generally these establishments catered to local residents and tourists are noticeably absent (10). Another indicator of the town's shallow tourist attraction is the pronounced reduced use of English as is evident from selected assessments of the menus in eateries and conversations with merchants compared to that found in Nogales.

Several reasons can be given for the near absence of tourist activities in this border town. First, San Luis Rio Colorado, although officially more populated than Nogales, has a much smaller U.S. hinterland of potential foreign tourists to draw upon (Figure 1). San Luis, Arizona, its border twin, has only 4,000 residents. Yuma, Arizona, while closer to San Luis (only 25 miles away) than Tucson is to Nogales, is still considerably smaller with some 55,000 residents compared to some 604,000 in Tucson. Nevertheless, Yuma does attract a seasonal snowbird population during the winter months, but those potential tourists are more likely to
visit nearby Algodones, Baja California, than San Luis Rio Colorado. Algodones is not only closer to Yuma, but accessible via interstate highway in much the same way as Nogales, so that the Baja border town competes favorably against San Luis Rio Colorado as a tourist destination. By contrast to the accessibility previously discussed for Nogales, San Luis Rio Colorado is relatively distant from Yuma, the major source area for local tourists. Yet, as one authority has proclaimed (31, p. 33), it is not so much actual distance which determines an area's potential market as much as its location relative to other attractions.

Algodones (officially known as Vicente Guerrero), a border community of some 3,500 permanent residents, offers typical tourist functions like eateries that cater to non-Spanish speakers, but also specializes in pharmacies that sell discount prescription drugs and discount dental services popular with senior citizens (4, 12). Combined with these attractions are dozens of curio stores that clog the main streets of the town and branch off to side streets with dense mini malls. Finally, a review of news coverage in the largest state newspaper, The Arizona Republic, between 1987 and 1997 revealed only four stories that even hinted at tourist activities in San Luis Rio Colorado; most attention was focused on the tourist amenities of Yuma and Algodones.

SONORA BORDER TOWNS IN POPULAR GUIDEBOOKS

The recent growth and popularity of travel has witnessed a commensurate explosion of guidebook publishing. Visit almost any decent bookstore like a Borders or Barnes and Noble and one is amazed at the shelf space devoted to travel guides and travel narratives. A review of 16 Mexico guidebooks found 12 that mentioned Nogales and seven that referenced San Luis Rio Colorado (Table 1). The greatest attention to Nogales and San Luis Rio Colorado was found in those guidebooks specializing in northern Mexico (16) and the border (10) as well as budget and independent traveler guides (20, 23, 30). Because border towns typically receive day-trippers rather than overnight tourists, they are commonly neglected in many major guides (1, 7, 9, 21, 44). Three guidebooks discuss Nogales and San Luis Rio Colorado as tourist destinations but only in passing. Often these references discuss the border towns as gateways to interior Mexico destinations. Visitors arriving from Phoenix, Tucson, or Yuma are often day excursionists, but, as one guidebook warns "For visitors from farther afield, Nogales is simply a gateway to northwest Mexico and a place to pick up the proper tourist permits" (30, p. 390).

Another guidebook signals Nogales as recognizable but with reservation when it announces that "Although undoubtedly important as a frontier town...Nogales does not really have any noteworthy places of interest" (7, p. 432).

Nevertheless, among those guidebooks which discuss tourist activities in border towns, Nogales is clearly the most important Arizona-Sonora border destination. Nine of 12 guidebooks respectively devote substantial space (more than half a page) to a description of the tourist amenities in Nogales and San Luis Rio Colorado. In these guidebooks, Nogales is frequently cited for its shopping opportunities. A typical comment relates that "Like Tijuana to the west (but on a much smaller scale), Nogales is famous for its shopping and attracts hordes of Arizonans bargaining for tacky knickknacks" (20, p. 139). Common references recommend "liquor stores, glass, silver and leather goods, cheap bars and colourful markets" (11, p. 178) and "curio shops overflowing with
Mexican handicrafts, trinkets and souvenirs" (30, p. 348). Another guide asserts that in Nogales "The streets are crowded with street vendors expectantly waiting for pocketbook-happy Americans to dip below the border for a day and purchase tiny rag dolls to bring a little piece of Mexico back to their own homes" (23, p. 176).

By contrast, San Luis Rio Colorado is portrayed with indifference in most guidebooks; one does not mention the Sonoran border city (23) and another only advises that it is a 24-hour crossing point (30). Even the most generous guidebook notes that San Luis Rio Colorado is "not a real tourist town" (10, p. 72), few restaurants that cater to tourists are recommended and only ten sites within the city are noted. In the same guidebook, there are eight tourist restaurants and 28 sites mentioned for Nogales. Another guidebook that notes San Luis Rio Colorado explains that "[s]ince this town doesn't really get any border tourists—most people who enter here are heading straight for El Golfo de Santa Clara[on the Sea of Cortez]—few eating places offer the kind of facilities designed to attract gringos" (17, p. 378). Finally, another guidebook concludes that "[w]hile growing, tourism has yet to become much of a factor in the everyday life of San Luis [sic]" (29, p. 38).

The only guidebook to describe San Luis Rio Colorado as a "tourist-oriented border town" (11, p. 180) mentions the city in passing and lists but one place to stay and nowhere to eat compared to the listing in the same book of three places to stay and eight places to eat in Nogales. Algodones gets similar treatment by this guidebook, although it is also mentioned as having "dozens of souvenir stands, and several decent restaurants" (11, p. 181). In contrast to San Luis Rio Colorado, one book explains that it is Algodones that "receives a steady stream of day visitors from Yuma County, one of the top three 'snowbird' communities in the U.S." (17, p. 235).

**CONCLUSION**

The Mexican-American borderlands is a bicultural and binational region straddling an international boundary. A common perception holds that the boundary condition affords particular social and economic interactions. Tourism and tourist activities have been popular on this border since the 1890s, although mass tourism has intensified especially since the 1950s. Successful tourism on the Mexican border, however, has been variable by geography as well as by era.

Comparably sized Sonoran border towns were chosen to examine the variability of tourist attractiveness on an international boundary. Nogales and San Luis Rio Colorado were compared. Nogales is shown to be a far more successful tourist destination because it is a border settlement positioned along a major north-south transportation corridor linking the largest cities in the respective bordering states—Arizona and Sonora. It thereby accrues considerable tourist advantage because of its geographical situation and hinterland. Historically, Nogales benefited as well from Mexican development programs that targeted it as a tourist gateway and destination. The inertia of successful tourism and the continued advantage of access have combined to sustain Nogales as the premier Mexican border town for tourists along the entire Arizona-Sonora boundary.

This study concludes that an international boundary can potentially stimulate tourist attractiveness, but successful tourism results from exogenous factors and geographical situation rather than a border site alone. This finding has implications for border town developments at other locations along this
boundary, and perhaps for other international borders as well. Remote Mexican border towns like Ojinaga, Chihuahua, across from Presidio, Texas, or Palomas, Chihuahua, next-door to Columbus, New Mexico, are too far from large cities and thus have inadequate hinterlands to support international tourism. Even new border crossings like San Jeronimo, Chihuahua, across from equally recent Santa Teresa, New Mexico, have been unsuccessful tourist destinations on the Mexican border despite proximity to El Paso and Ciudad Juárez.

The Mexican-American borderland has been defined as an "interdependent" boundary where economic and social complementarity create cross-border interaction (26). Interdependence does not, however, assure equality of economic success and border towns do have differential degrees of tourist development. Tourist attractiveness on the Mexico border is variable and related to external conditions independent of location on an international boundary.

REFERENCES


37. Texas A&M International University, Border Trade Institute, College of Business Administration and Graduate School of International Trade and Business Administration, <http://www.tamiu.edu/coba/bti/>


FIGURE 1

Arizona-Sonora Border Cities in Regional Context
### TABLE 1

**Sonoran Towns in Popular Guidebooks**

<table>
<thead>
<tr>
<th>Guidebook</th>
<th>Nogales</th>
<th>San Luis</th>
<th>Rio Colorado</th>
<th>Publishing Country</th>
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<tr>
<td><em>Frommer's '97 Mexico</em></td>
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<td>US</td>
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<td><em>Baedeker's Mexico</em></td>
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<td><em>Berkeley Budget Guides '97</em></td>
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<tr>
<td><em>Border Towns of the Southwest</em></td>
<td>23</td>
<td>5</td>
<td></td>
<td>US</td>
</tr>
<tr>
<td><em>Mexico &amp; C. Am. Handbook</em></td>
<td>2</td>
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<td><em>Northern Mexico Handbook</em></td>
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<td><em>Mexico Handbook</em></td>
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</table>

Guidebooks are listed alphabetically by author or editor. Pages devoted to text rounded to nearest whole number (p = passing reference or less than one half page of text; calculated as a "0" for purpose of total and average). Sources given in text and in references (15, 19, 28).

* = Dropping the extremely high values of Cahill's *Border Towns of the Southwest*, these numbers would be 18 and 3 respectively with averages of 1.20 and 0.20 respectively.