TRAVEL OREGON

Oregon 2017
Regional Visitor Report
Willamette Valley Region

Introduction

- ✓ Longwoods International began tracking American travelers in 1985, and has conducted large-scale syndicated visitor research quarterly since 1990.
- ✓ In 2007, our proprietary Longwoods **Travel USA®** program was migrated from mail to online, with the benefits of rapid turnaround, enhanced flexibility and interactivity, as well as greater respondent involvement.
- ✓ It is currently the largest ongoing study conducted of American travelers, providing our clients with more reliable data and greater ability to home in on key market segments of interest.
- ✓ This report provides:
  - ✓ Estimates of 2017 overnight visitor volume and travel expenditures for Oregon as well as for the Willamette Valley Region in particular
  - ✓ Strategic intelligence about the Willamette Valley Region's overnight travel market including:
    - ✓ Key sources of business
    - ✓ Visitor profiling
    - ✓ Trip characteristics

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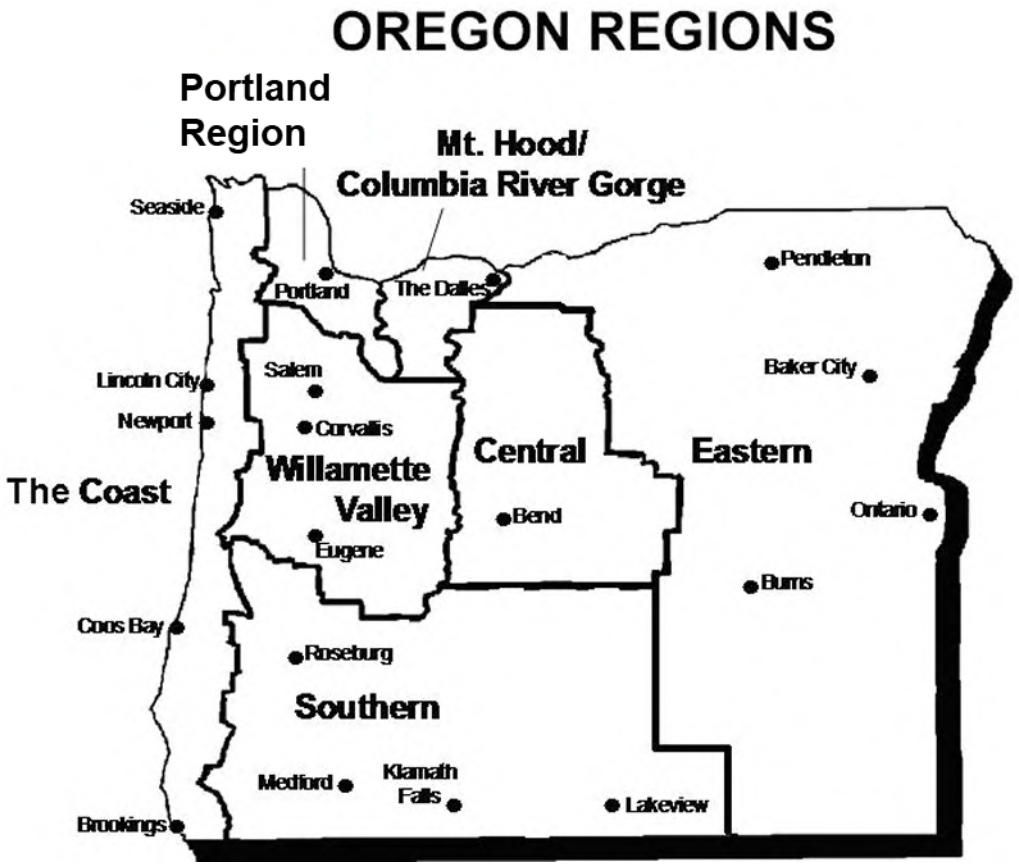
Methodology

- For each of the 2016 and 2017 travel years, a representative sample of visitors to the Willamette Valley Region was identified through the **Travel USA®** survey:
- Respondents who visited Oregon were asked to identify which of the state's seven tourism regions they spent time in with the aid of a visual map.
- Of the survey sample of 7,919 overnight trips taken to Oregon in 2016 and 2017:
  - 999 included a visit to the Willamette Valley Region
  - Of those, 363 were **marketable trips***

*Caution should be used in interpreting Willamette Valley Region data due to low sample size

Map



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Analytical Note

- The results of this report are based on two time frames:
  - Market size and structure estimates for the Willamette Valley Region are reported for the 2017 travel year, as are all Oregon state norms.
  - To maximize statistical reliability, other Willamette Valley Region data (trip characteristics and visitor profiles) are based on two years' combined sample from 2016 and 2017 unless otherwise indicated.

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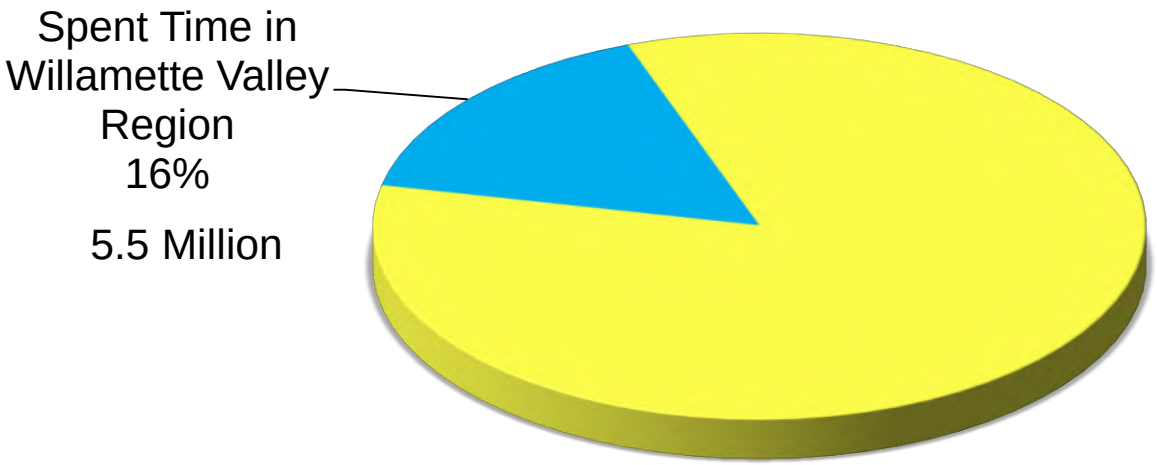
Travel Market Size & Structure— Willamette Valley Region 2017

Longwoods TravelUSA

Size of the Willamette Valley Region's Overnight Travel Market

Total Overnight Trips to Oregon*= 34.1 Million



*Includes both adults and children

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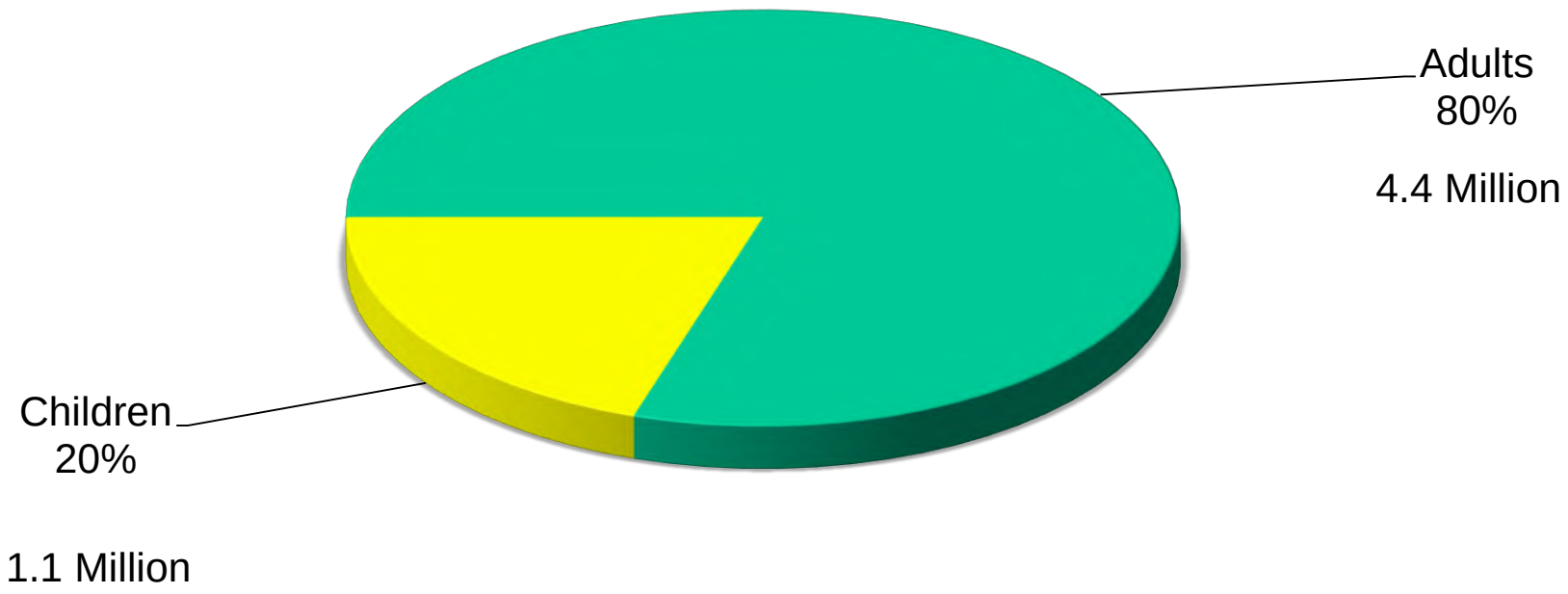
The Willamette Valley Region's Overnight Travel Market — Adults vs. Children

Total Overnight Trips to the Willamette Valley Region = 5.5 Million



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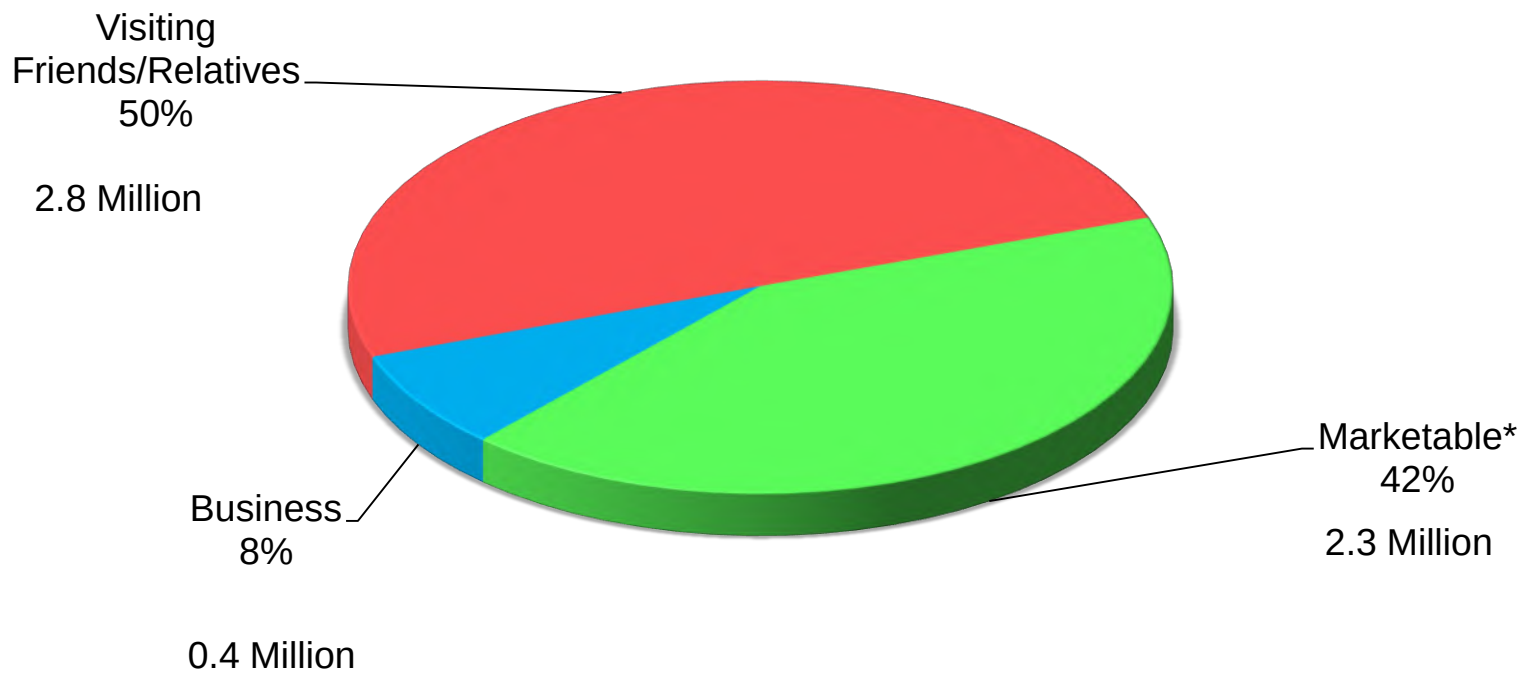
The Willamette Valley Region's Overnight Travel Market — by Main Trip Purpose

Total Overnight Trips to the Willamette Valley Region = 5.5 Million



*Marketable includes Business-Leisure

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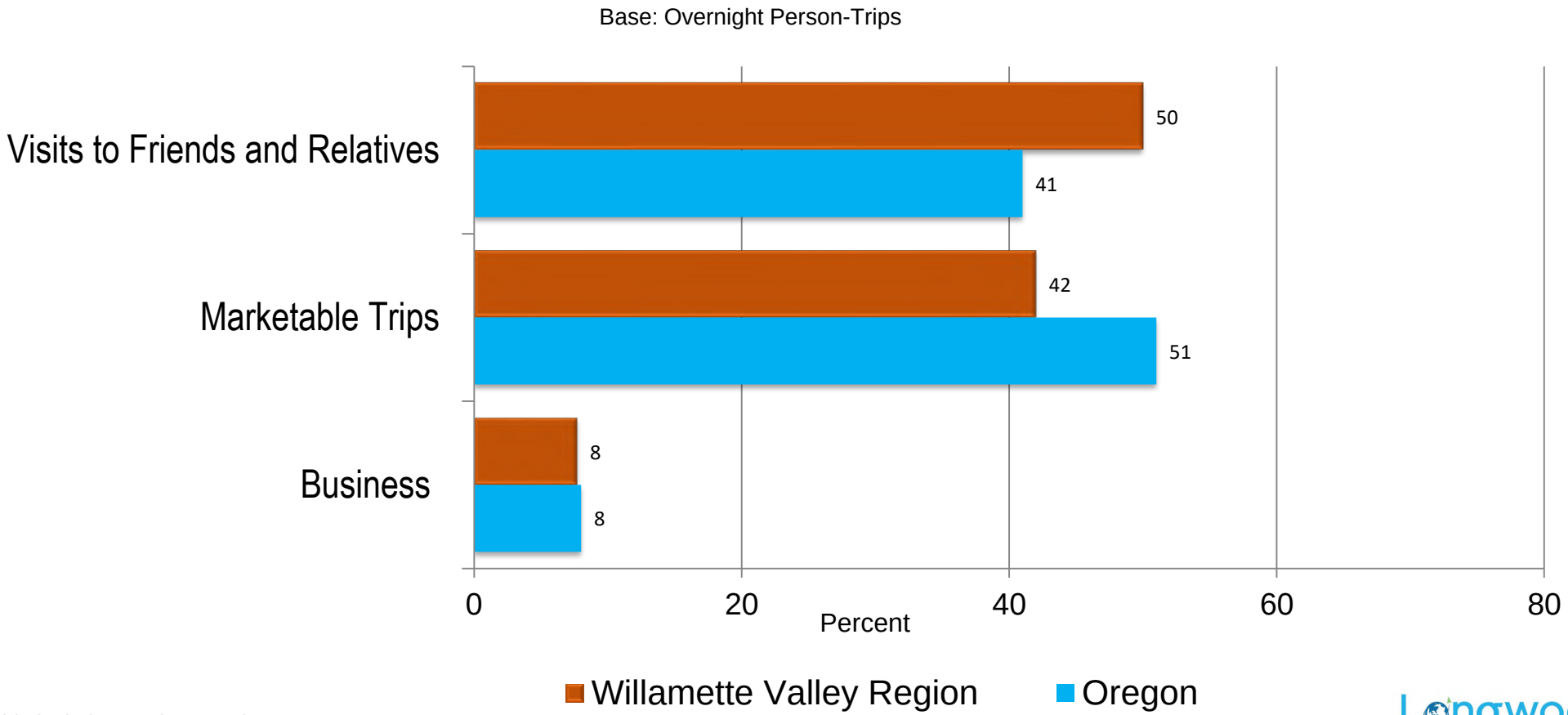
The Willamette Valley Region vs. Oregon State —by Trip Purpose



*Marketable includes Business-Leisure

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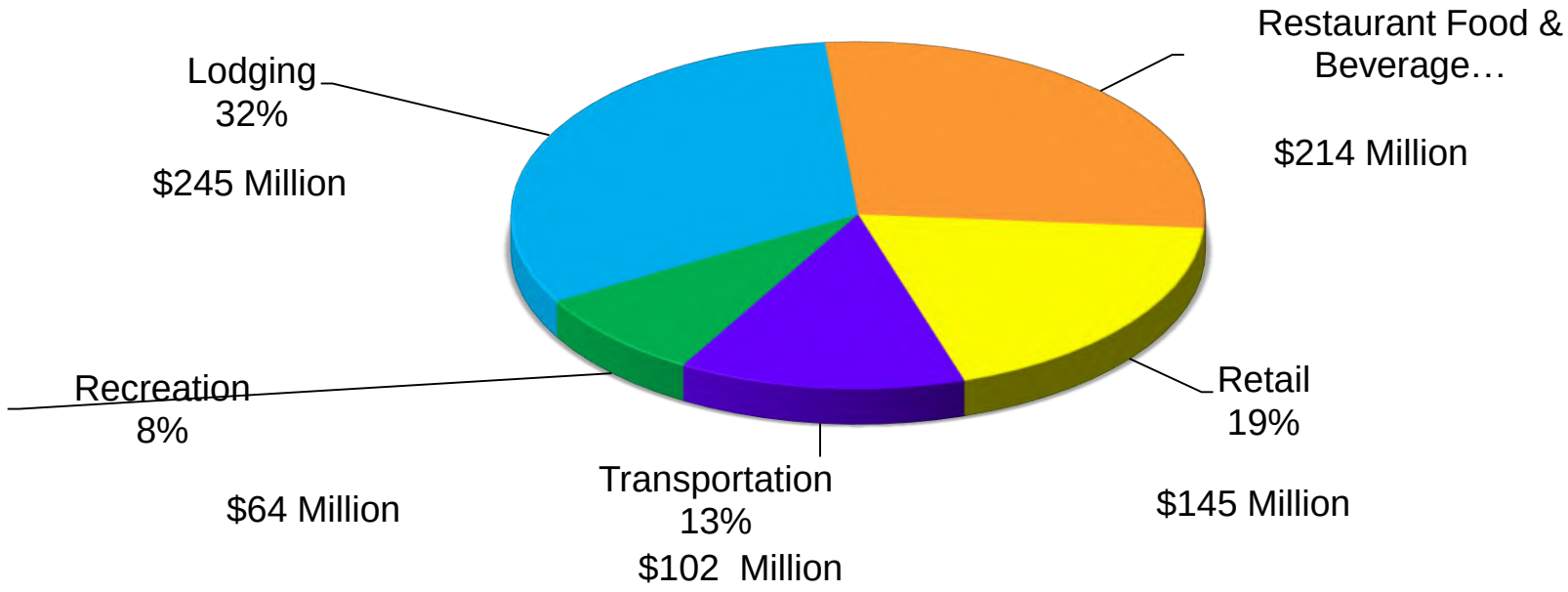
2017 Overnight Expenditures — by Sector

2017 Willamette Valley Region Spending = $770 Million



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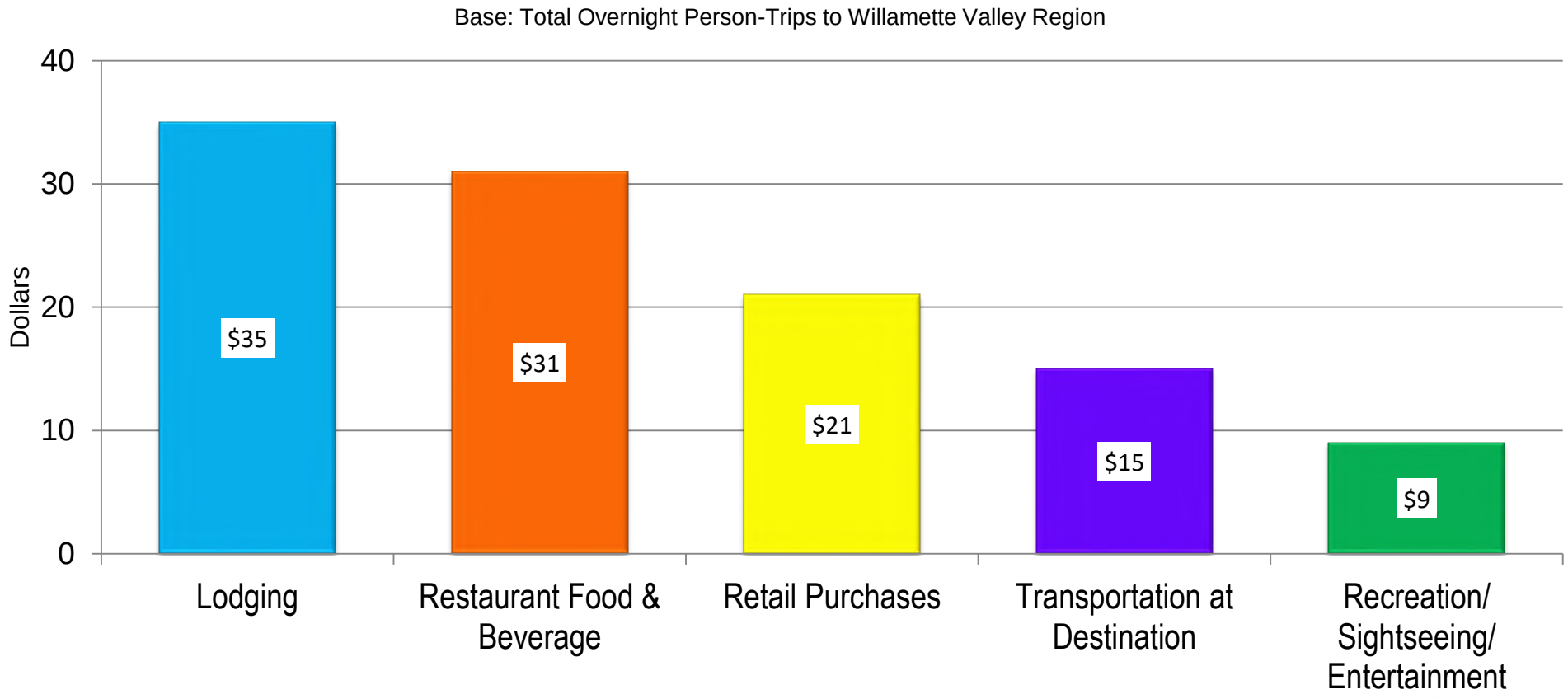
Average Per Person Expenditures on Overnight Trips — By Sector



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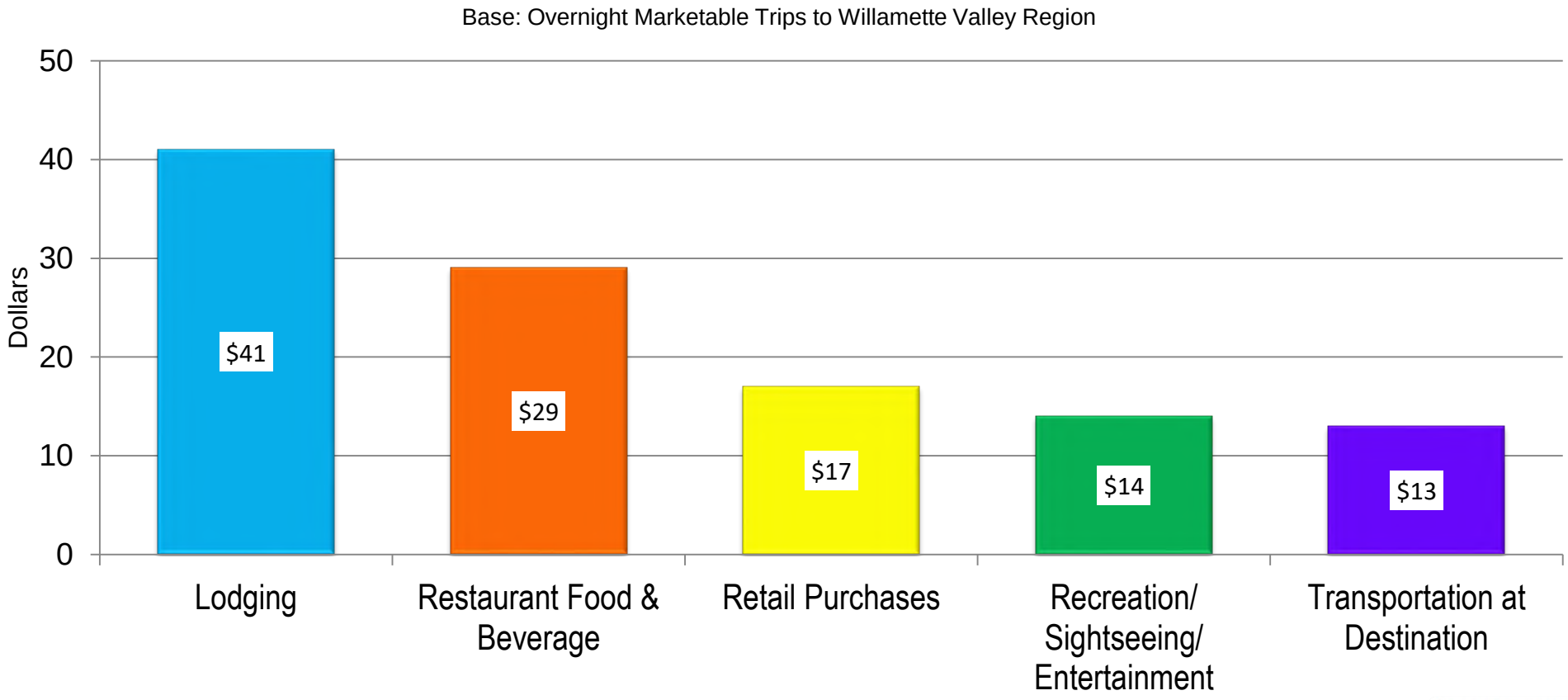
Average Per Person Expenditures on Overnight Marketable Trips — By Sector



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Marketable Trip Characteristics and Visitor Profile- 2016/2017

Longwoods TravelUSA

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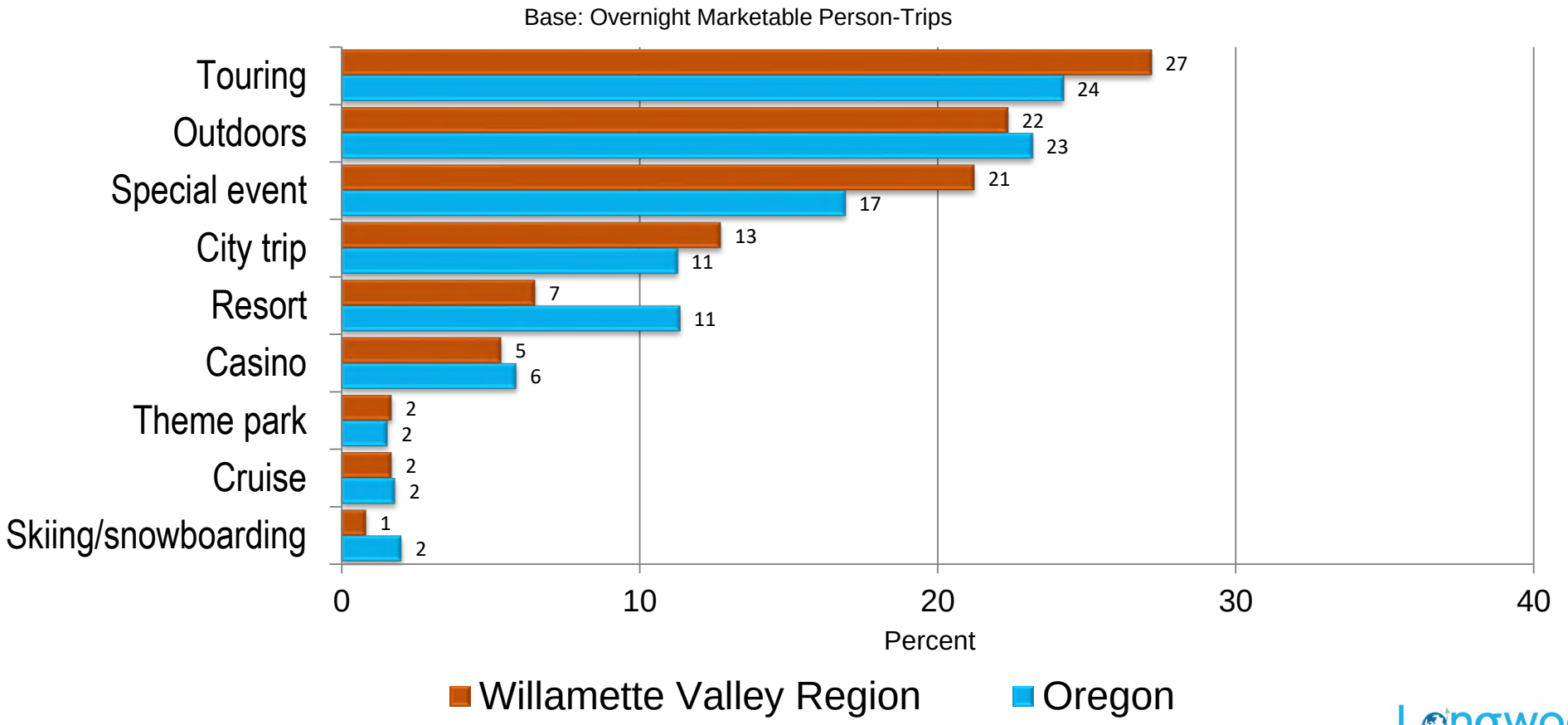
Main Purpose of Marketable Trip – The Willamette Valley Region vs. State Norm



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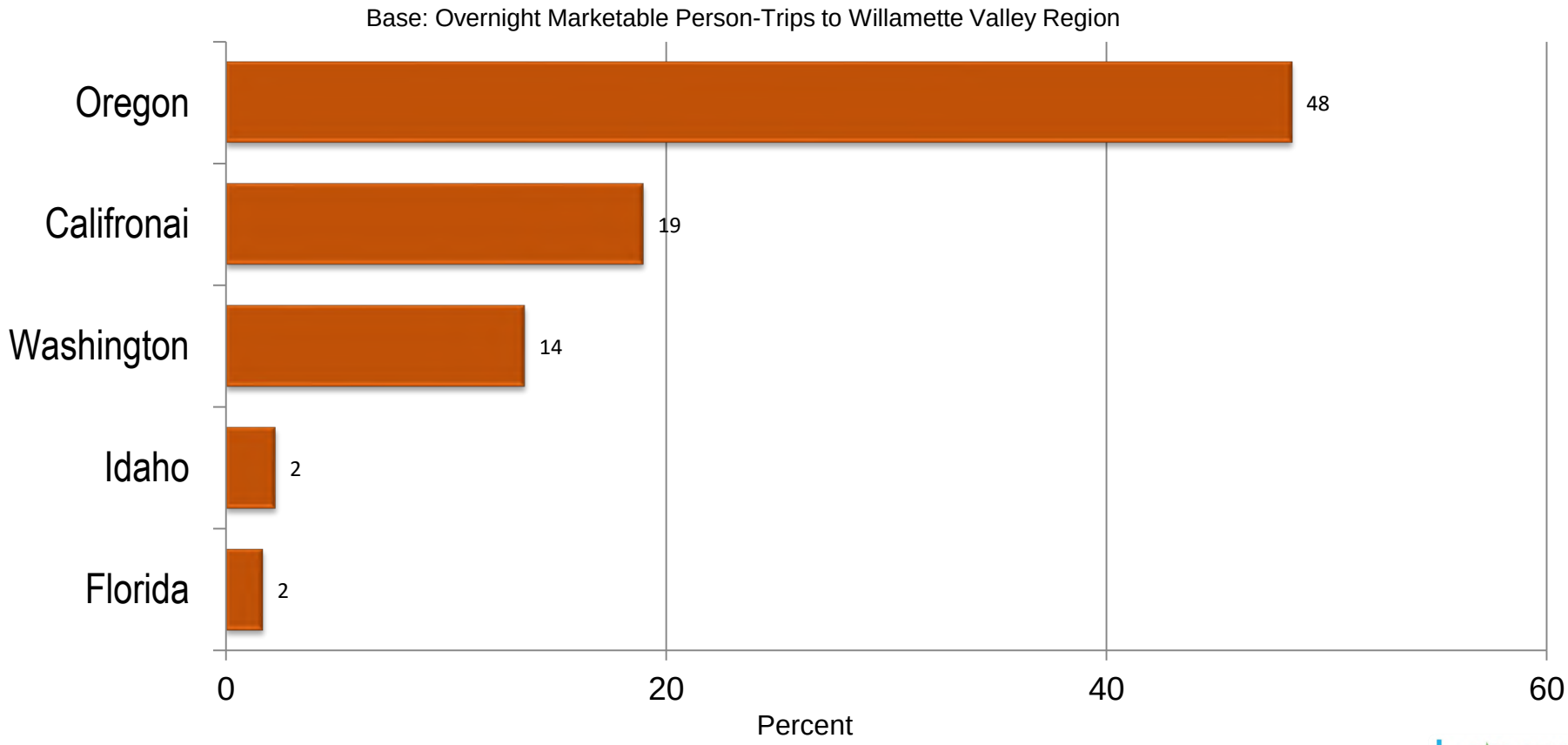
State Origin Of Trip



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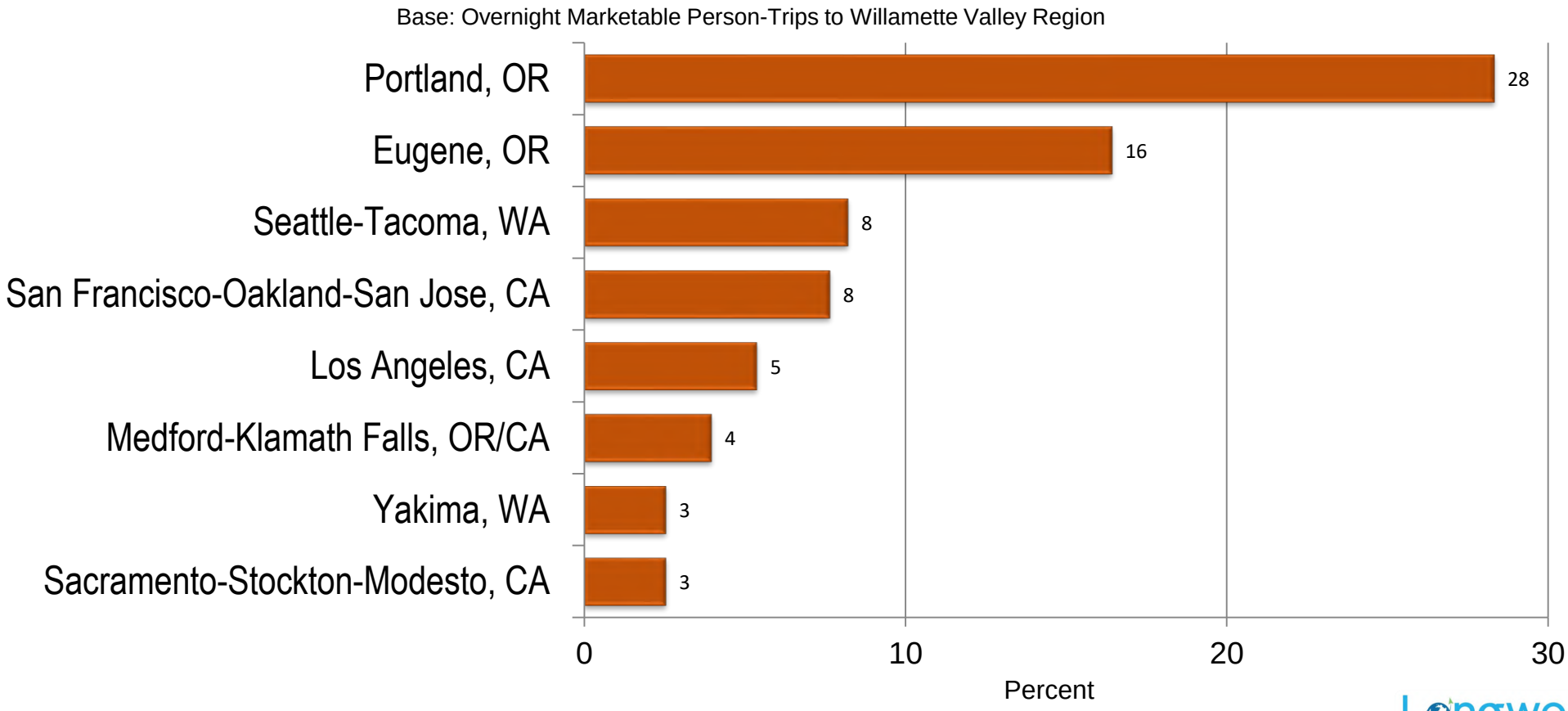
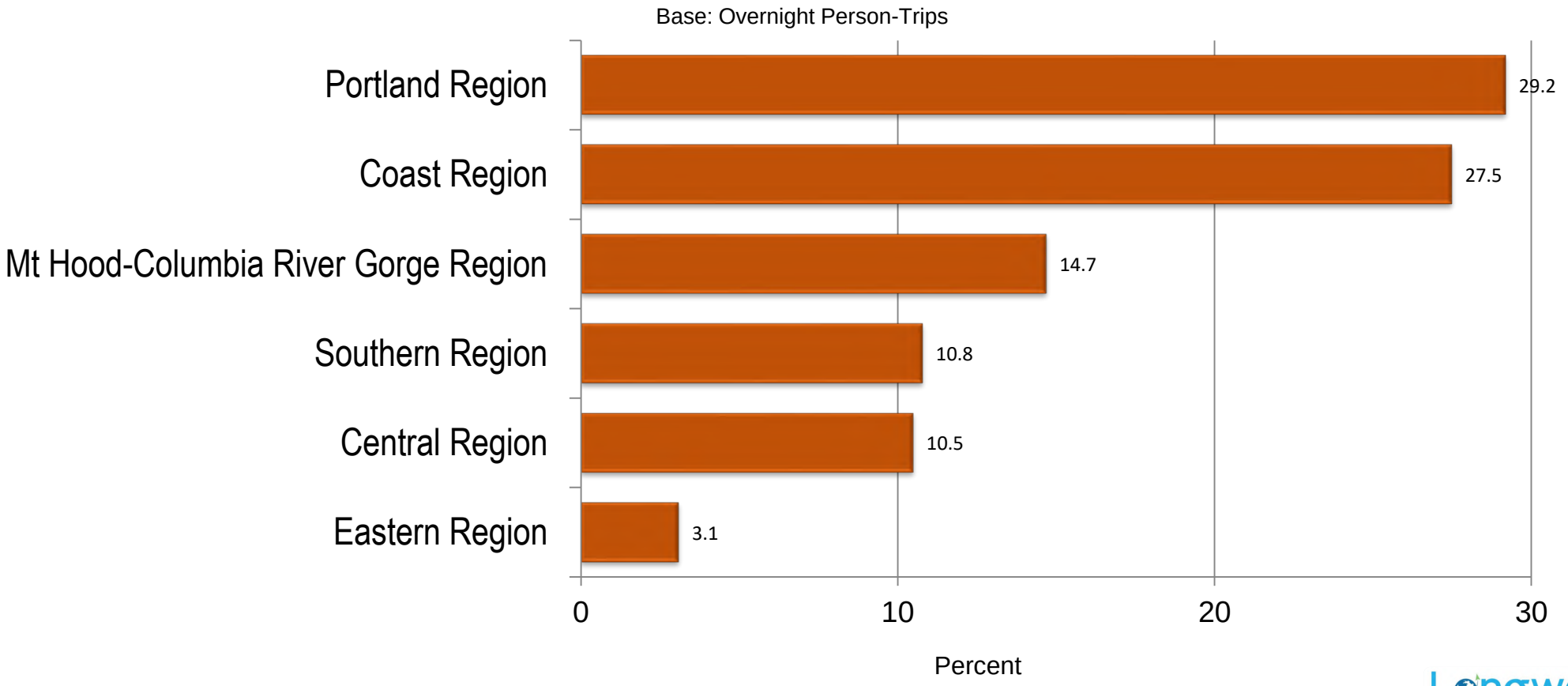
DMA Origin Of Trip



Other Oregon Regions Visited on Willamette Valley Region Trip



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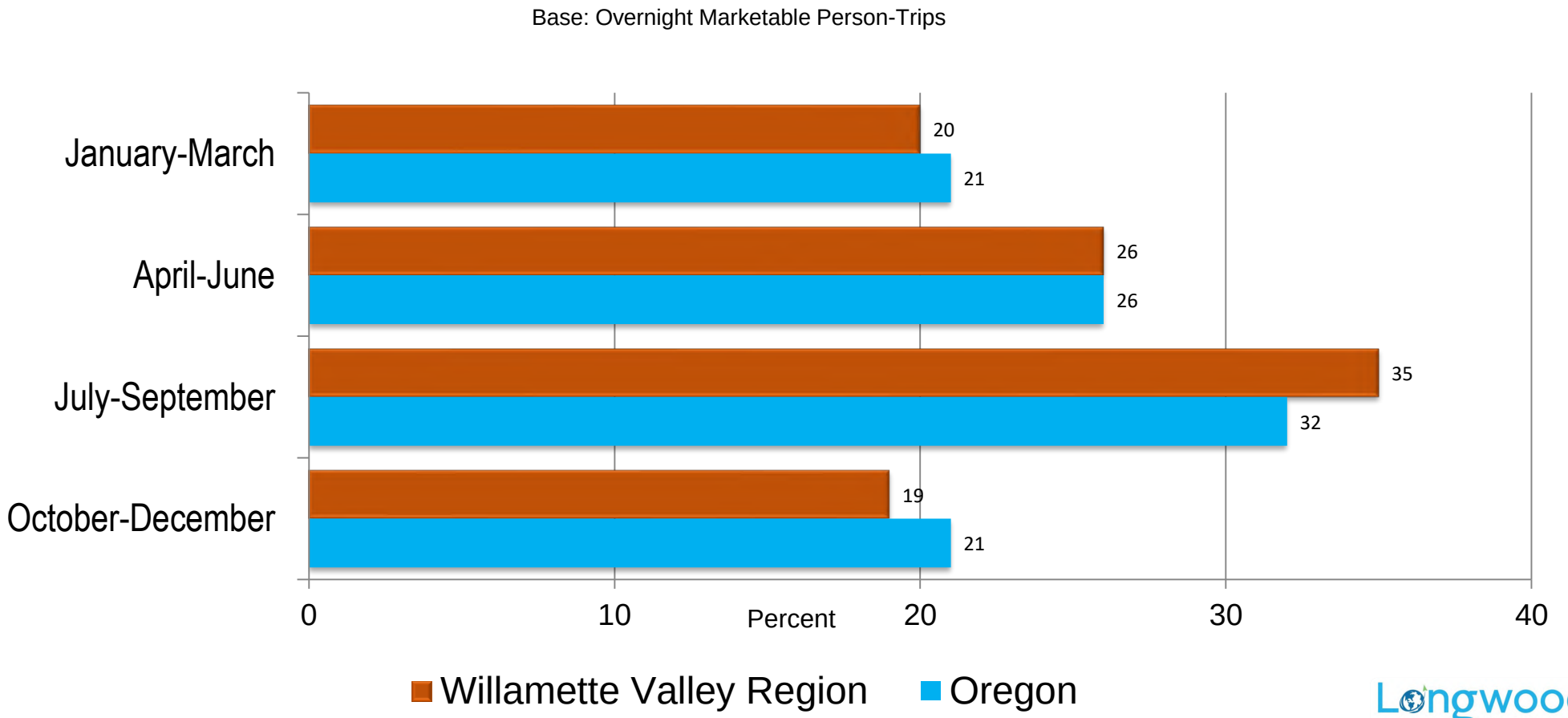
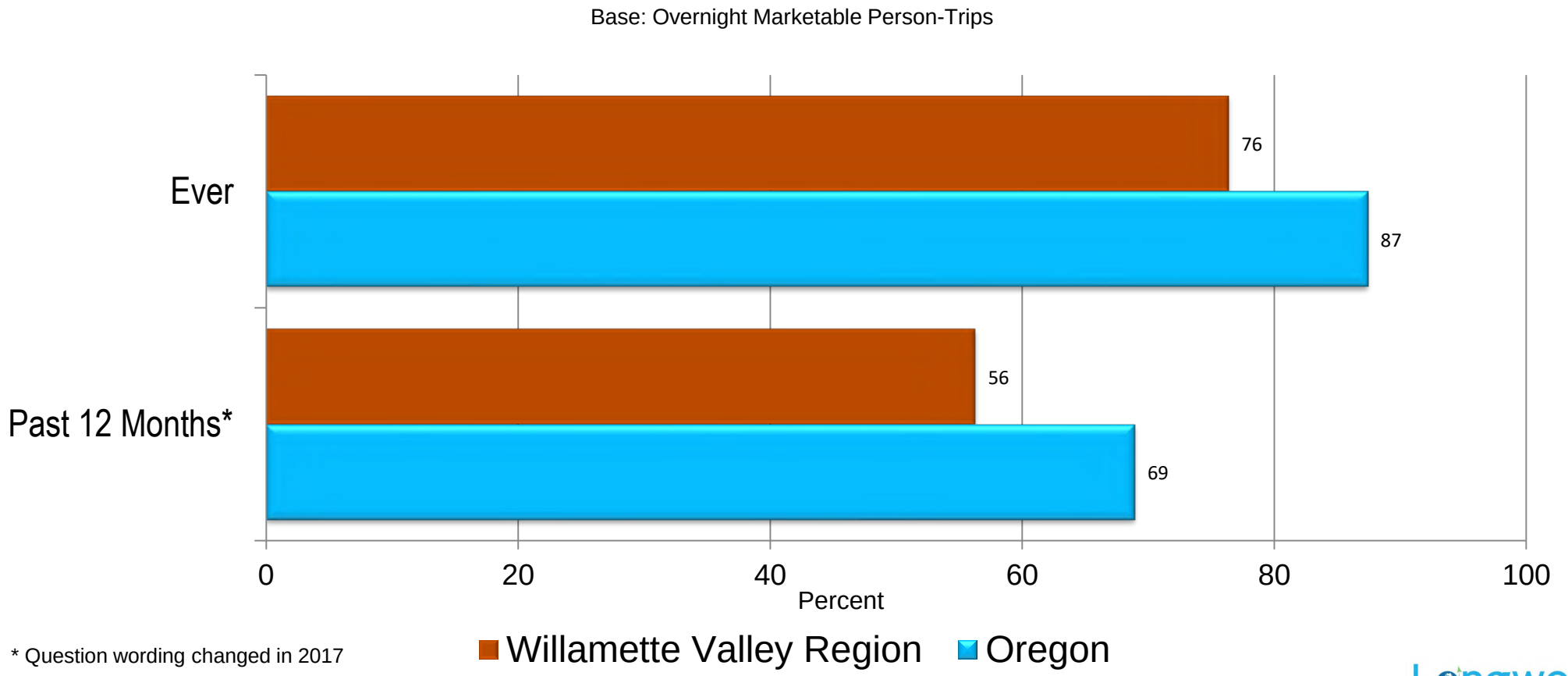
Season of Trip



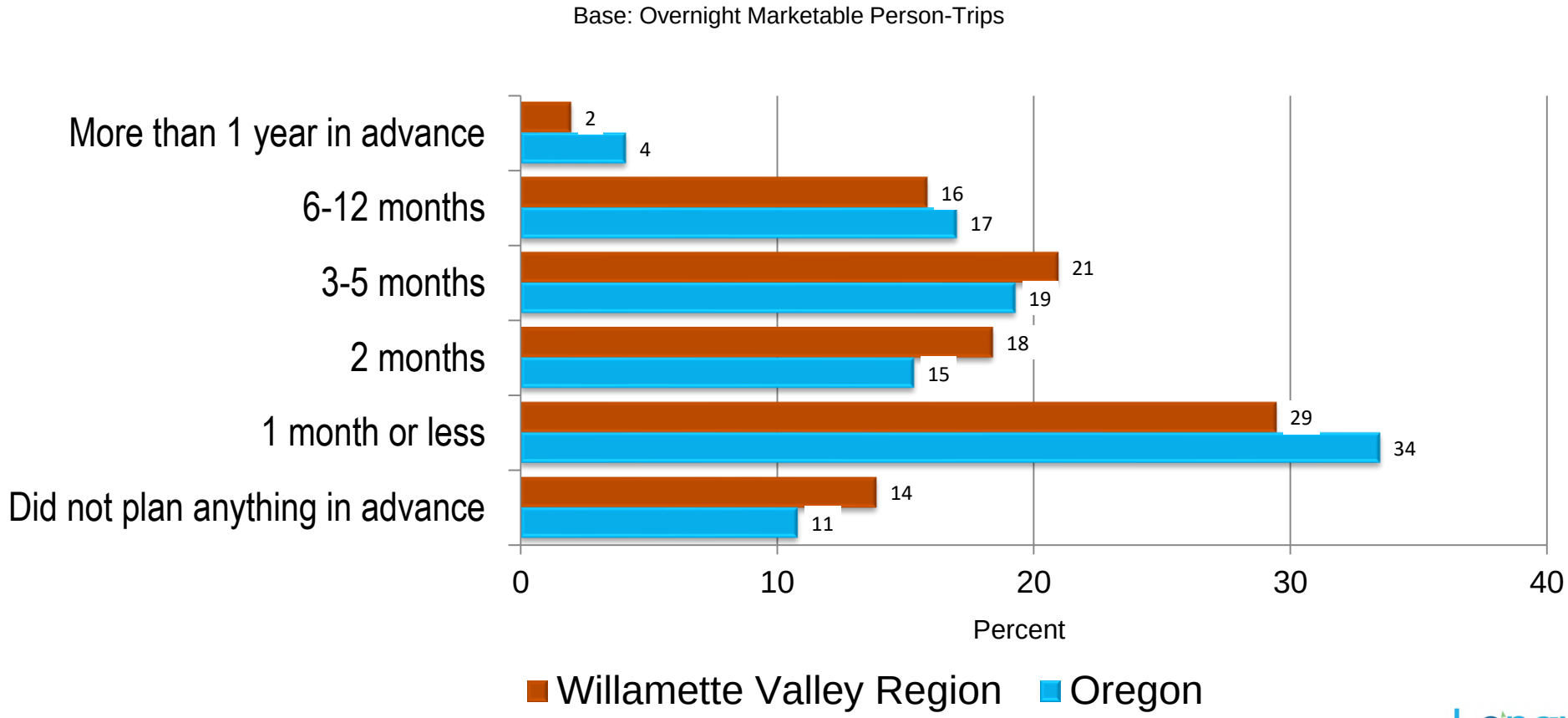
Past Visitation to Oregon*



* Question wording changed in 2017

Length of Trip Planning

Base: Overnight Marketable Person-Trips



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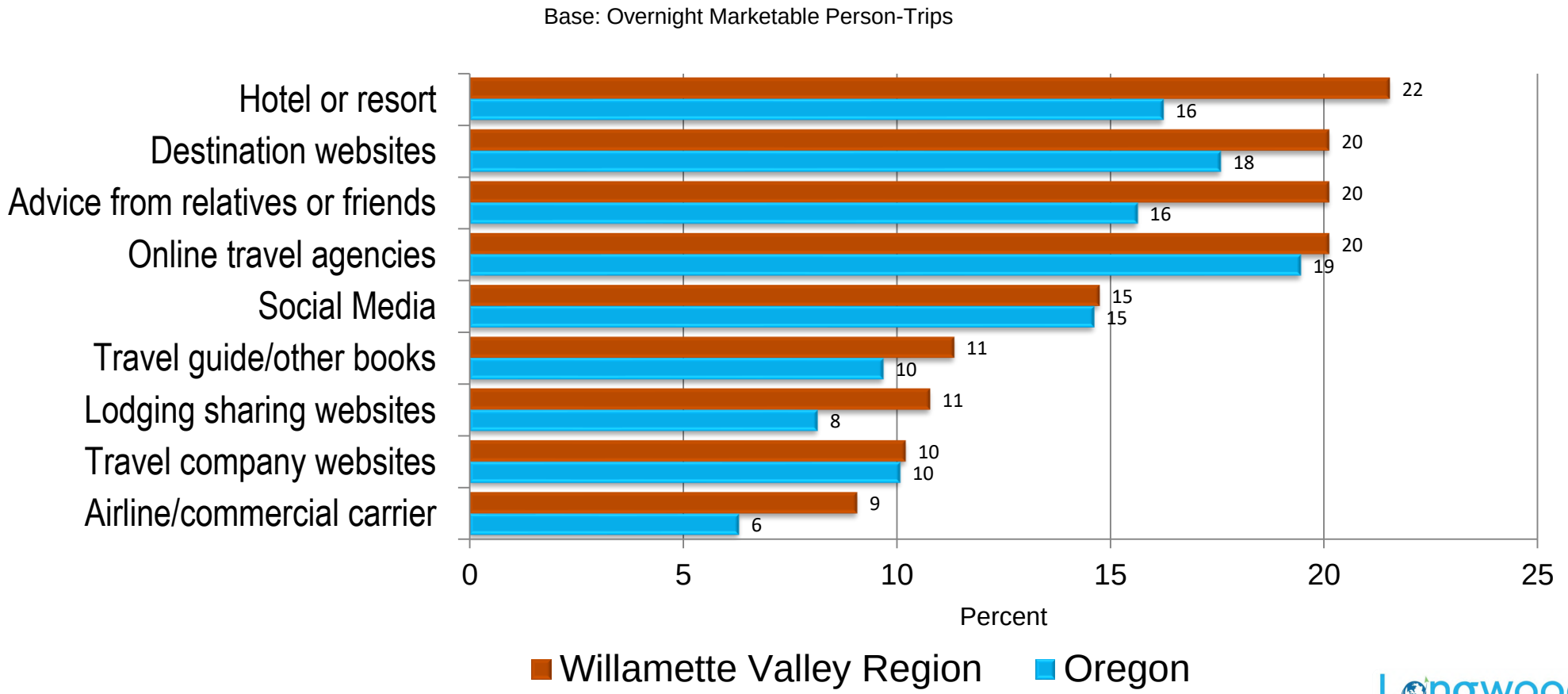
Trip Planning Information Sources



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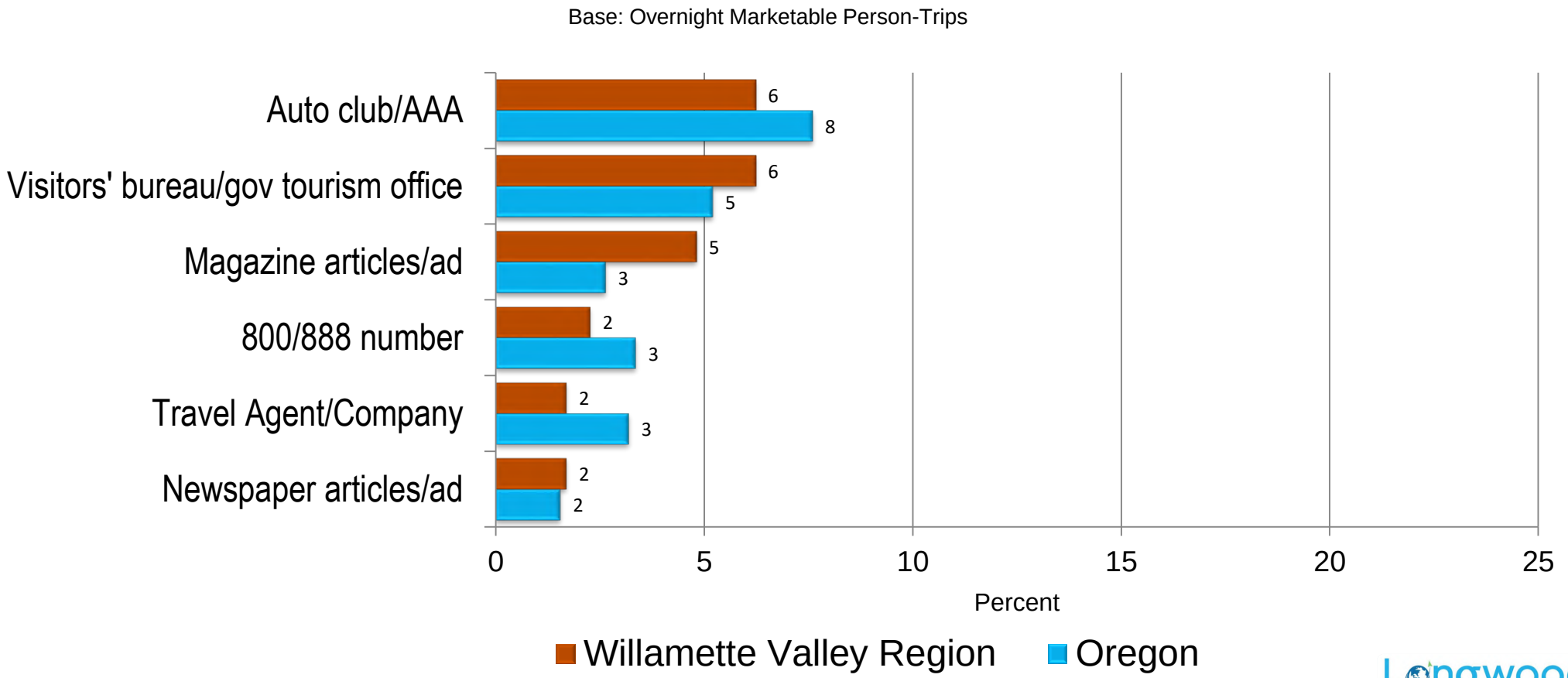
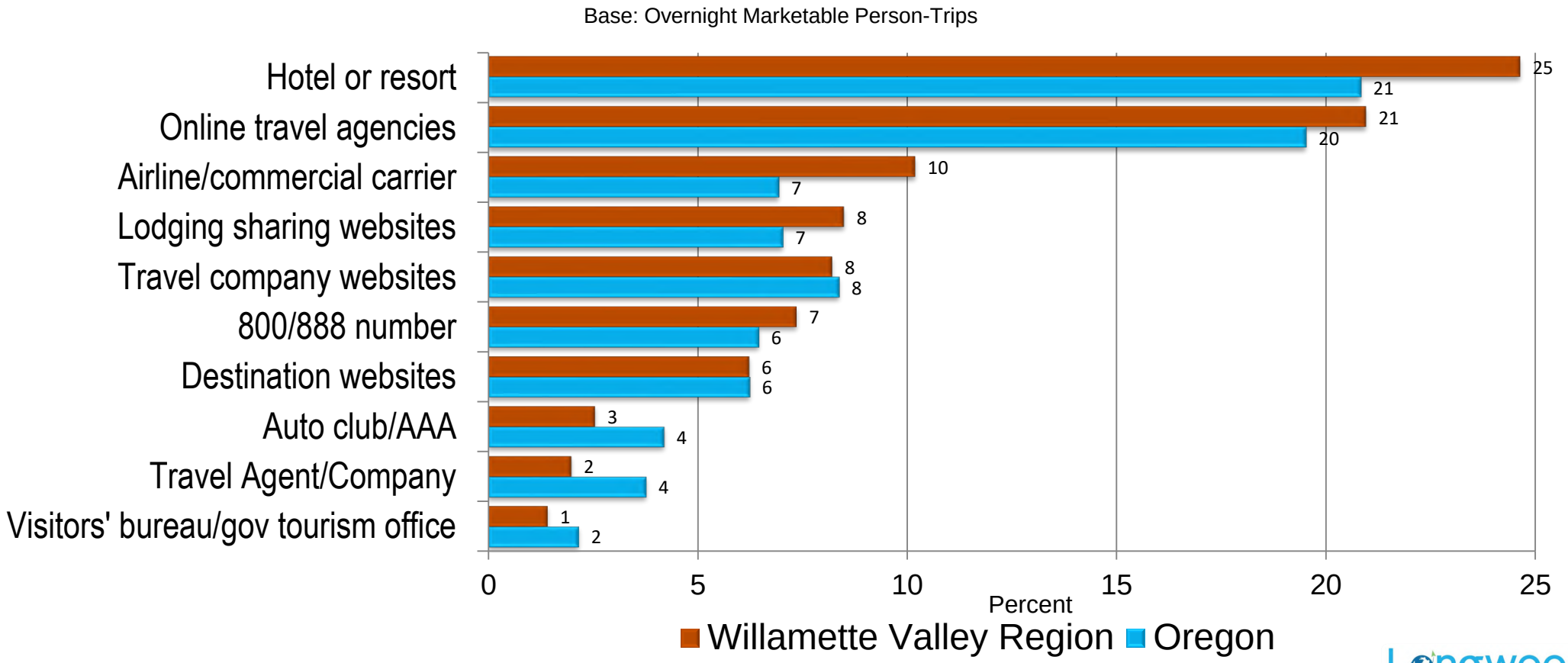
Trip Planning Information Sources (Cont'd)



Method of Booking



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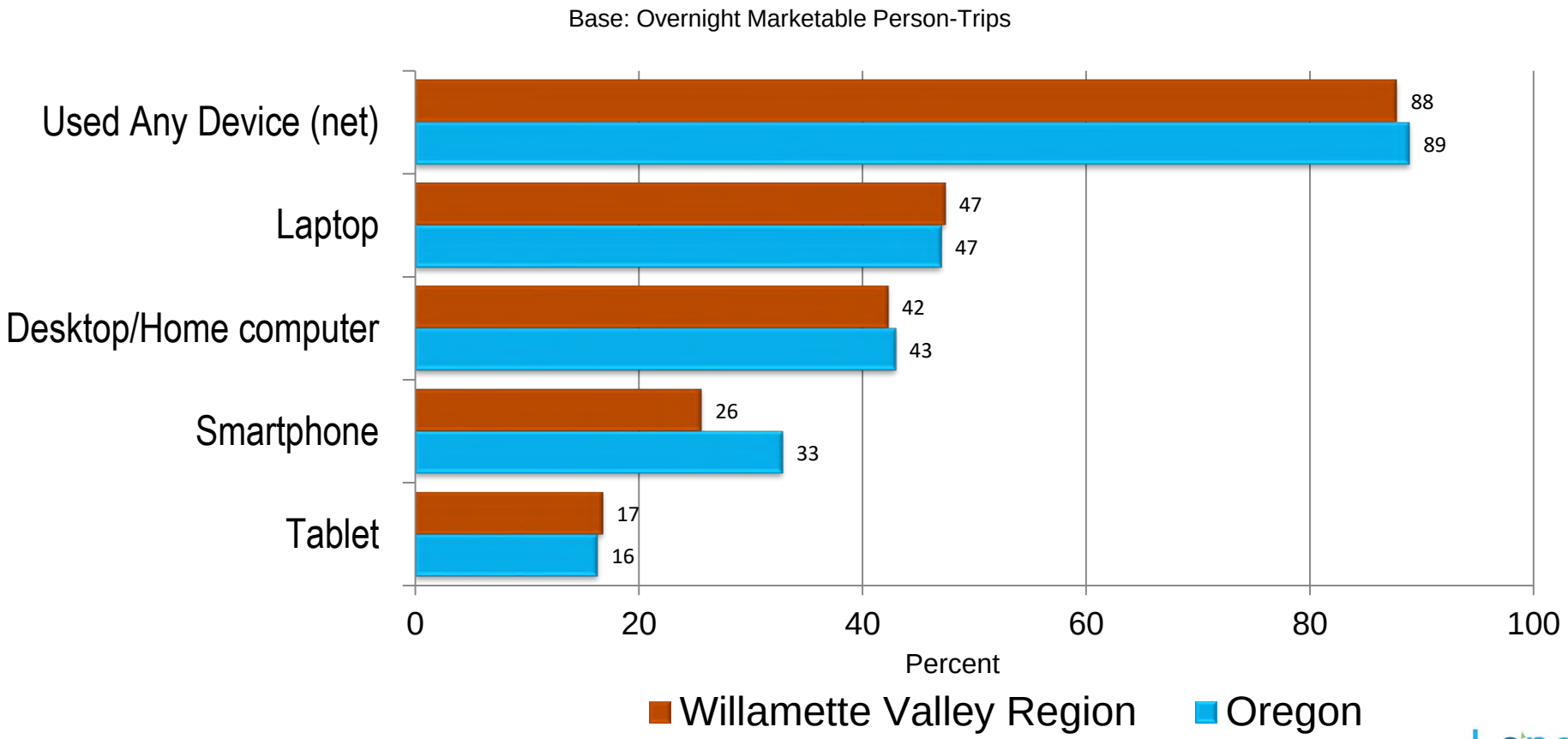
Devices Used for Trip Planning



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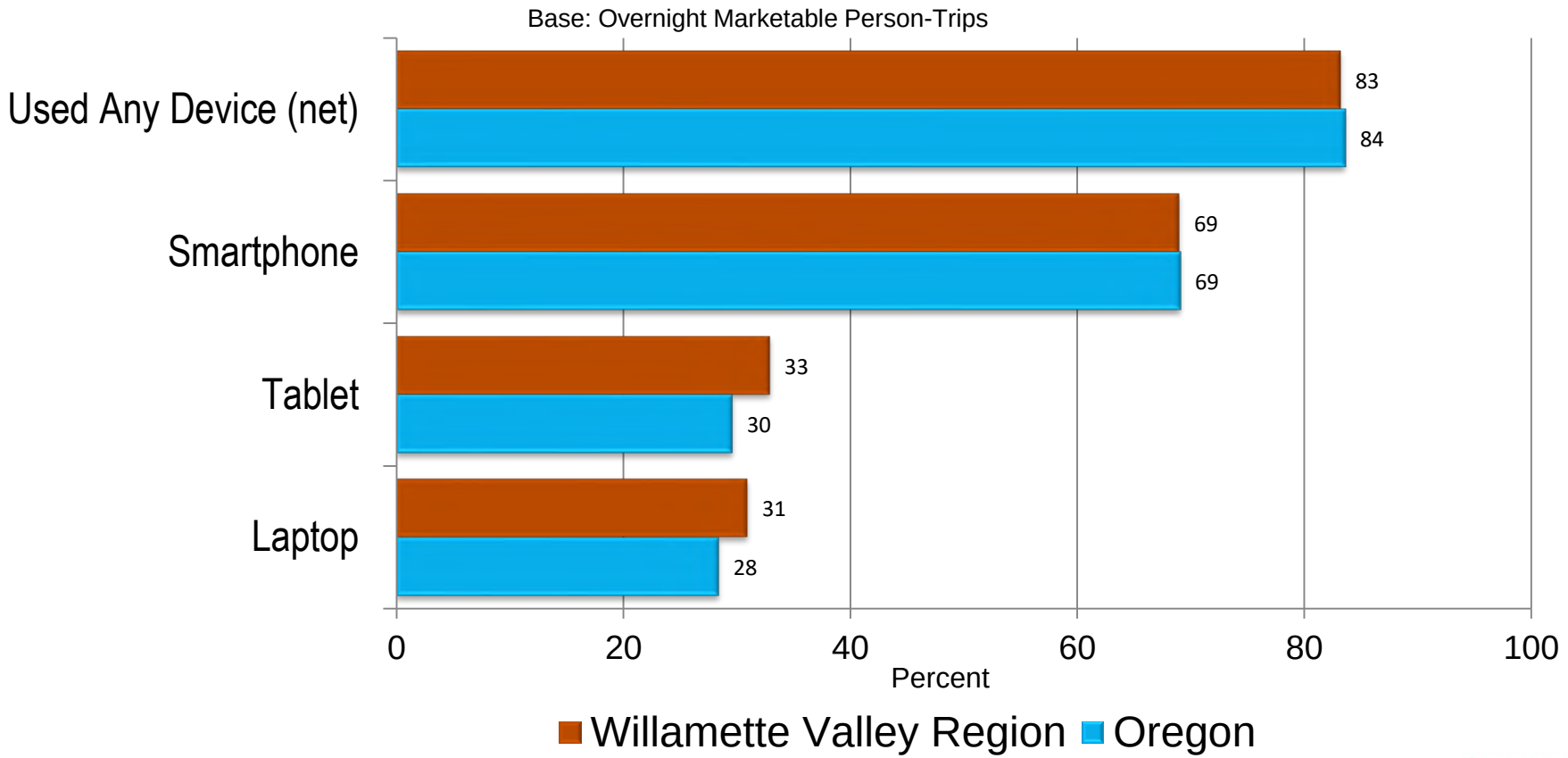
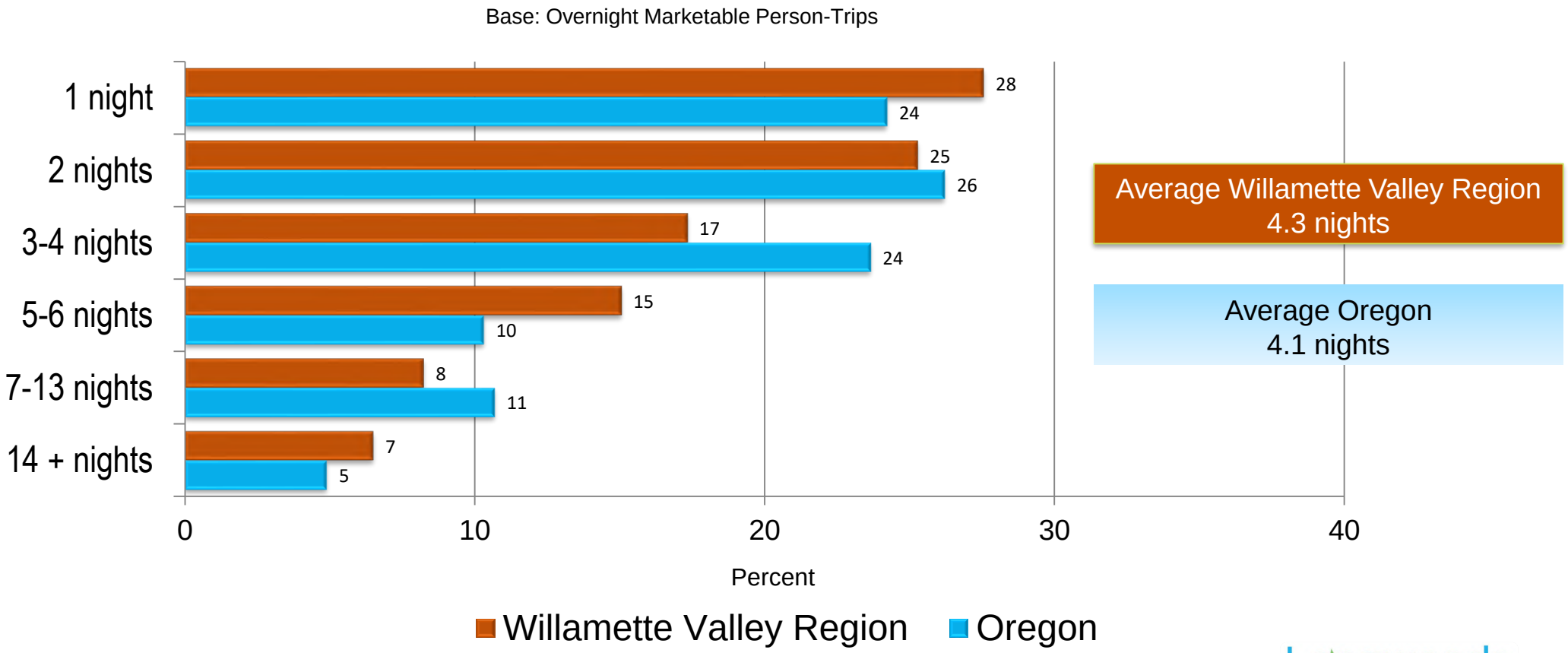
Devices Used During Trip



Total Nights Away on Trip



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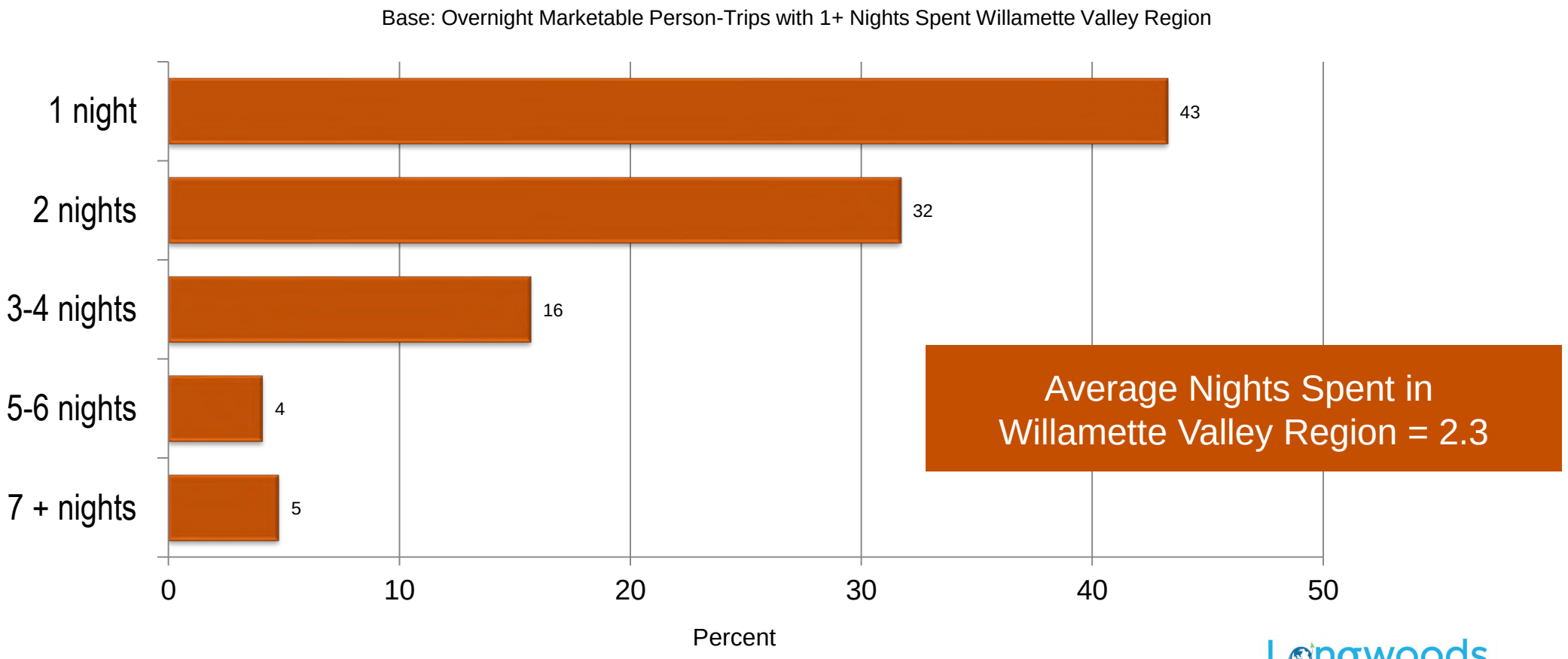
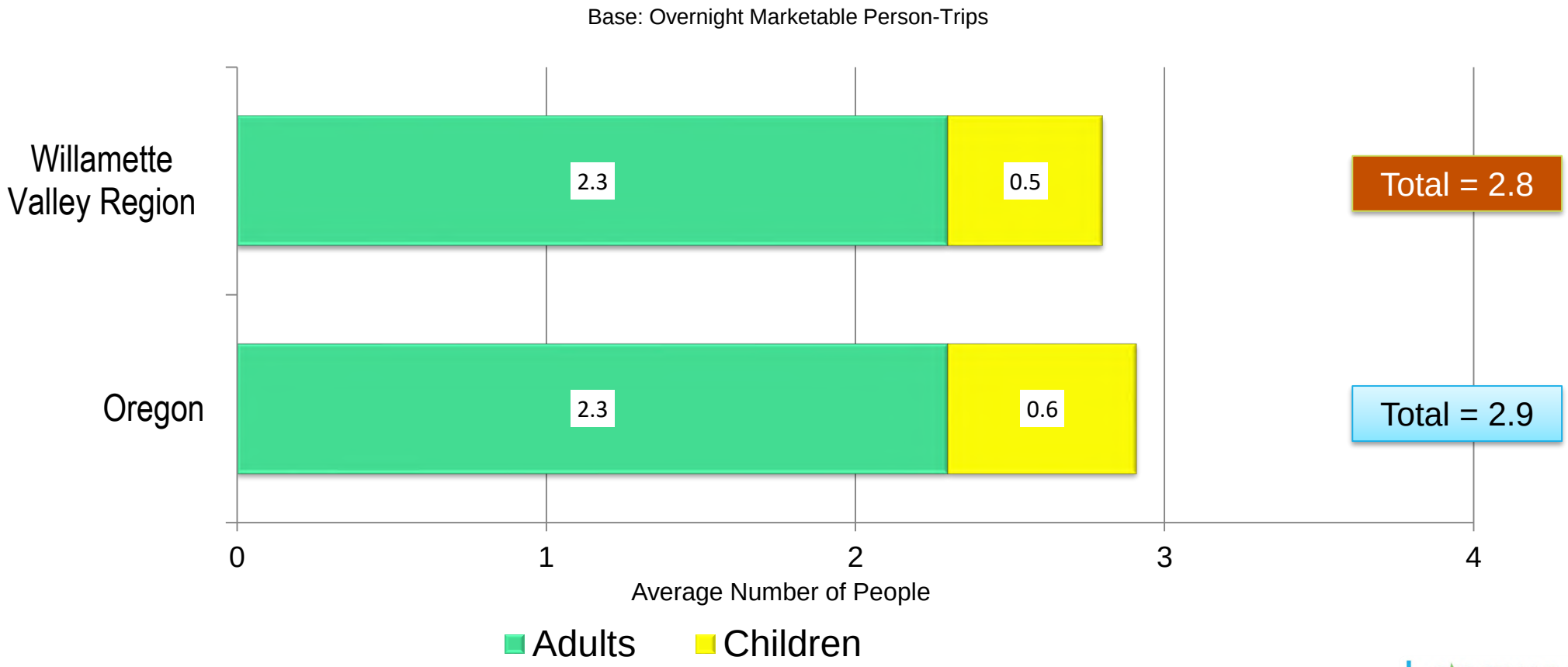
Number of Nights Spent in the Willamette Valley Region



Average Nights Spent in Willamette Valley Region = 2.3

Size of Travel Party



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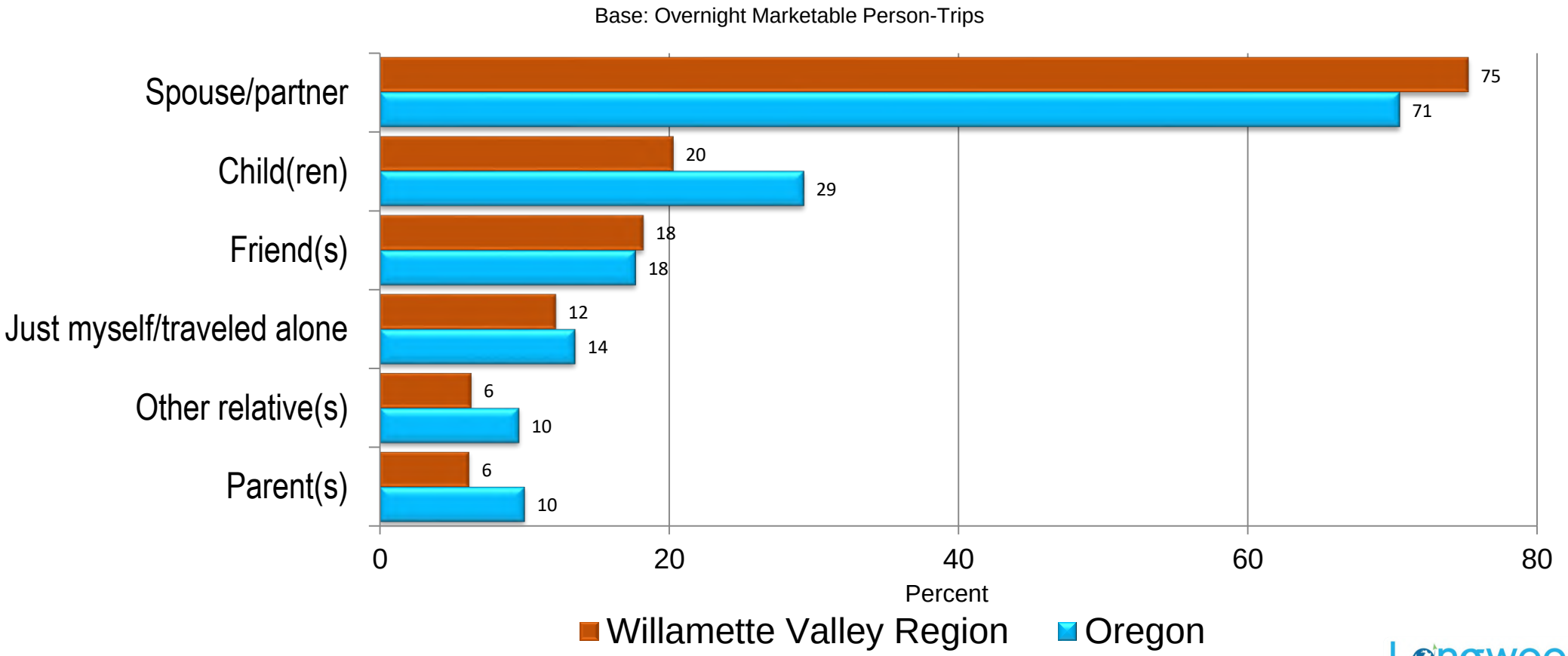
Composition of Immediate Travel Party*



*Question added in 2017; reflects 2017 data only

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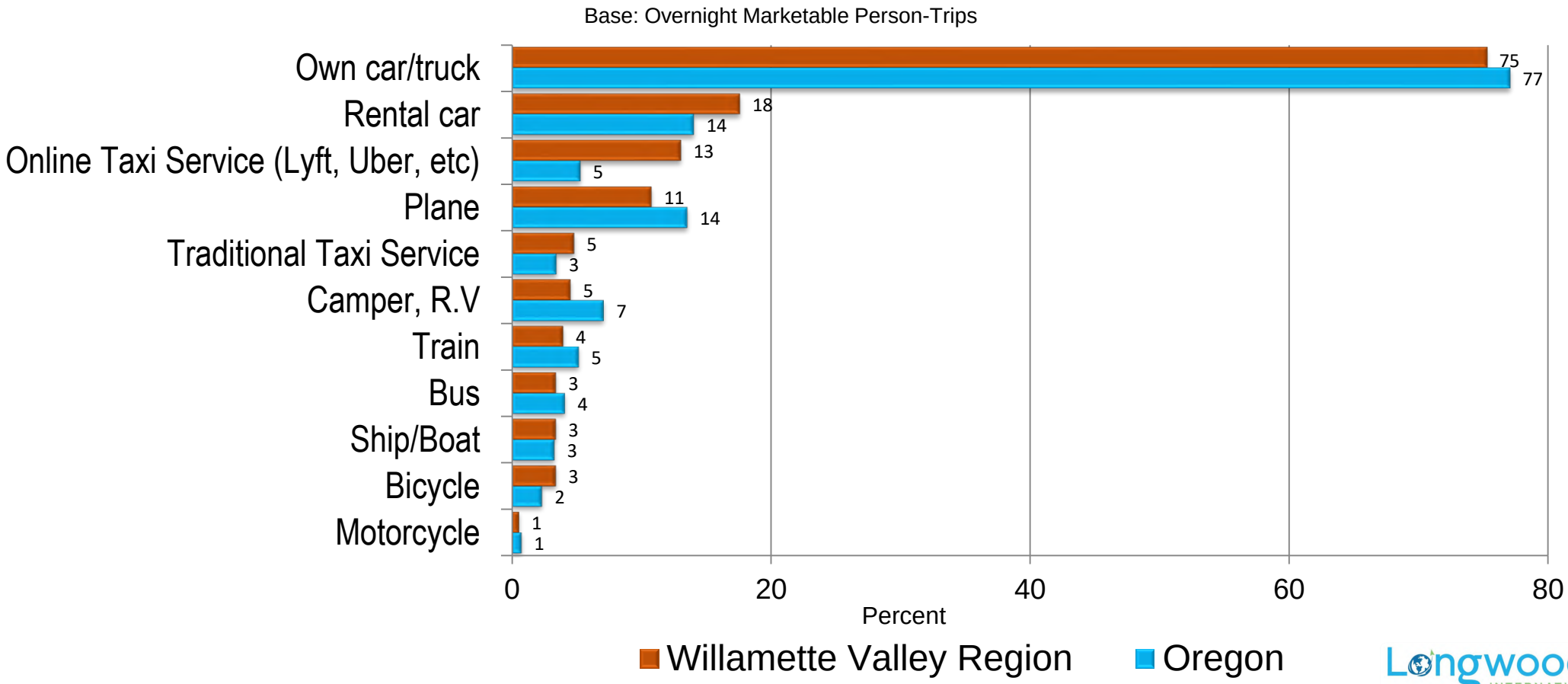
Transportation



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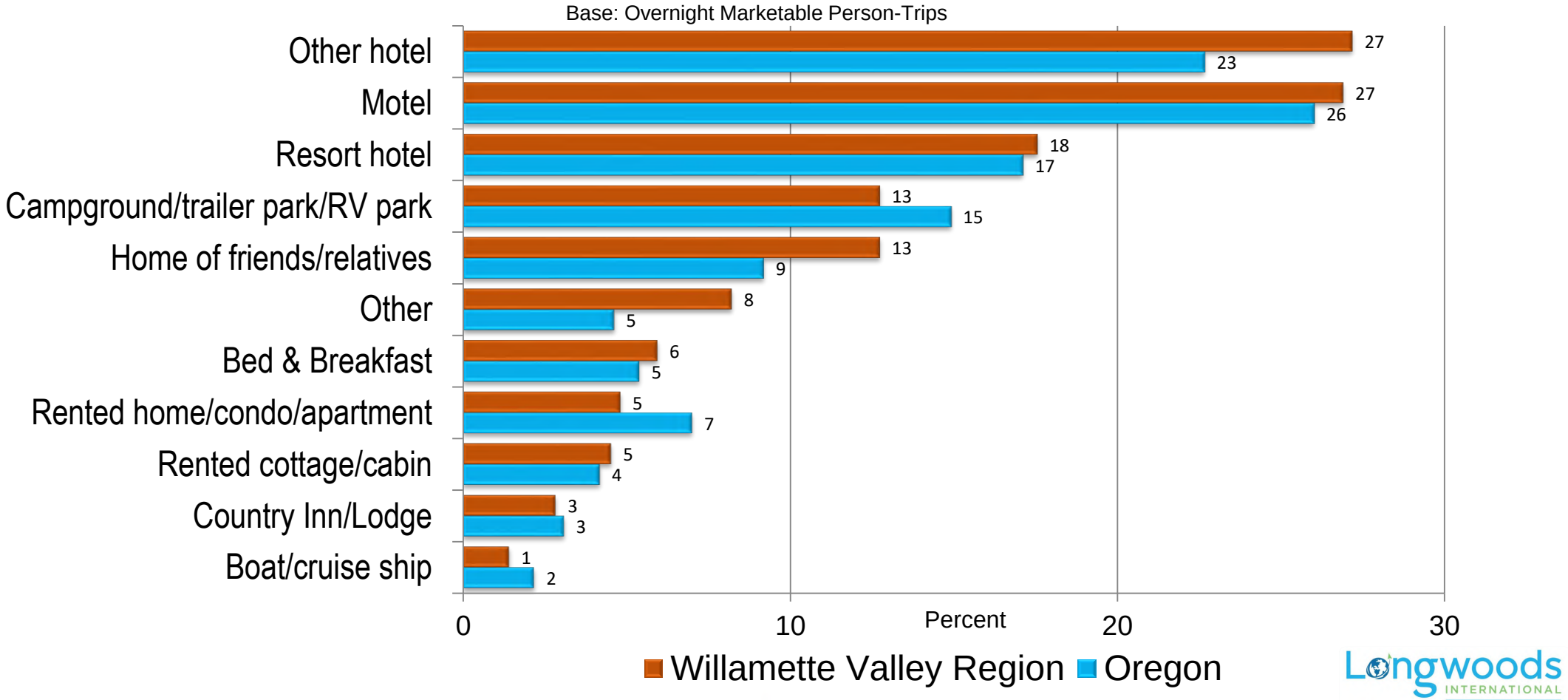
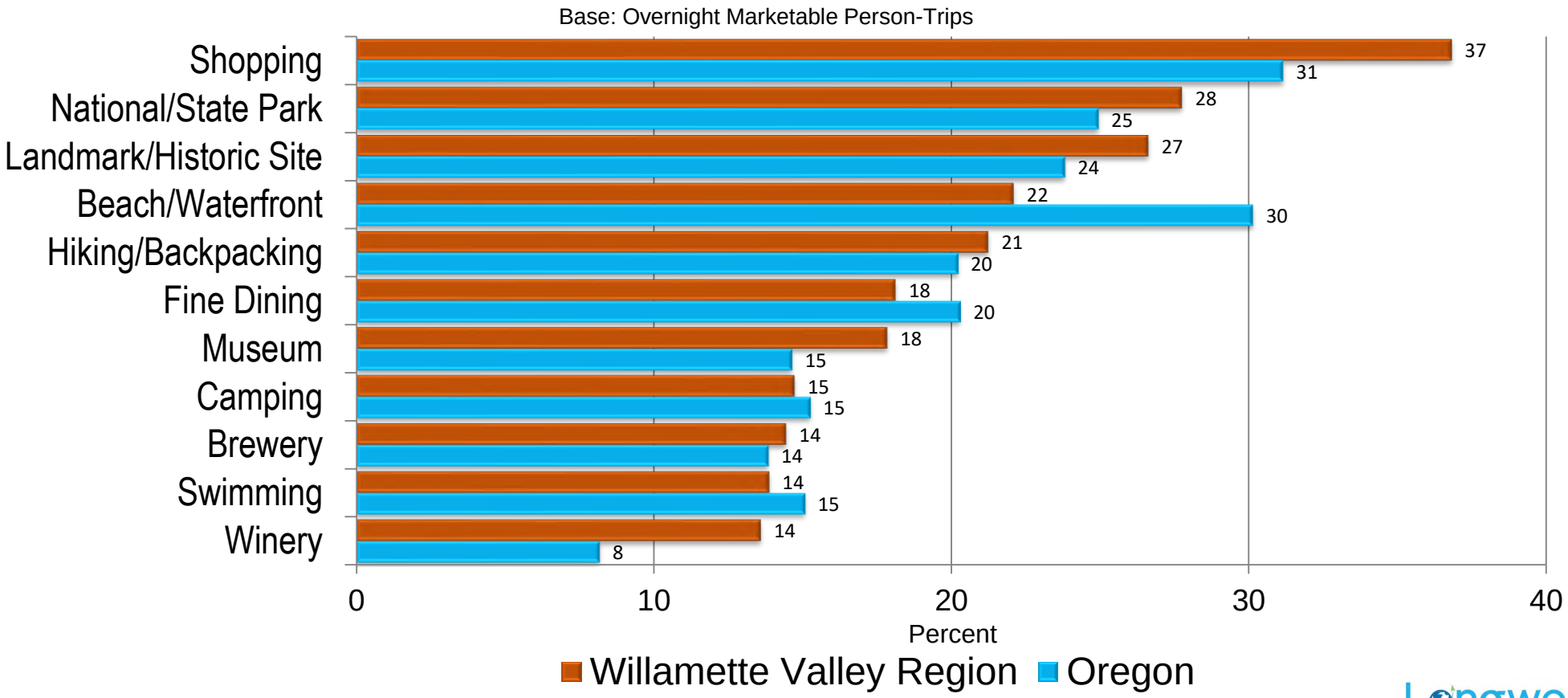
Accommodations



Activities and Experiences



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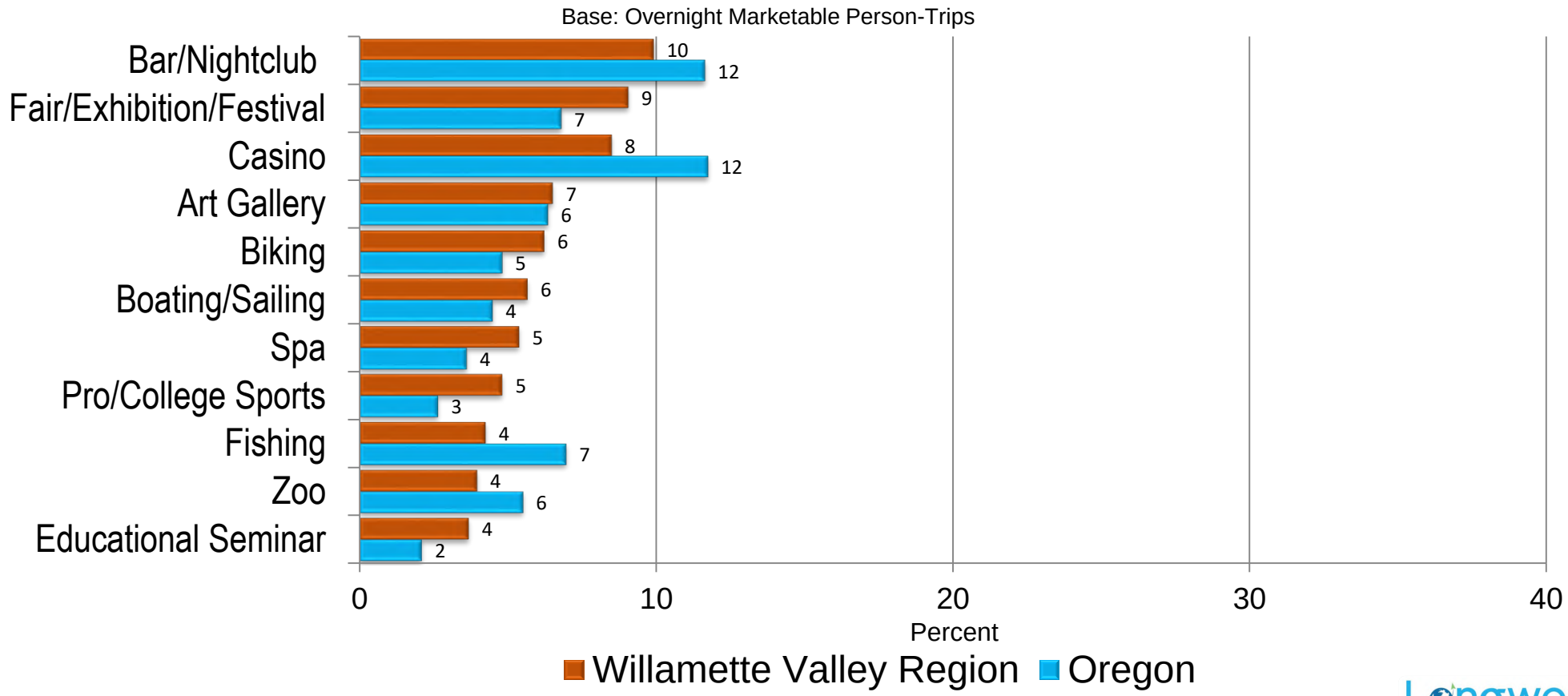
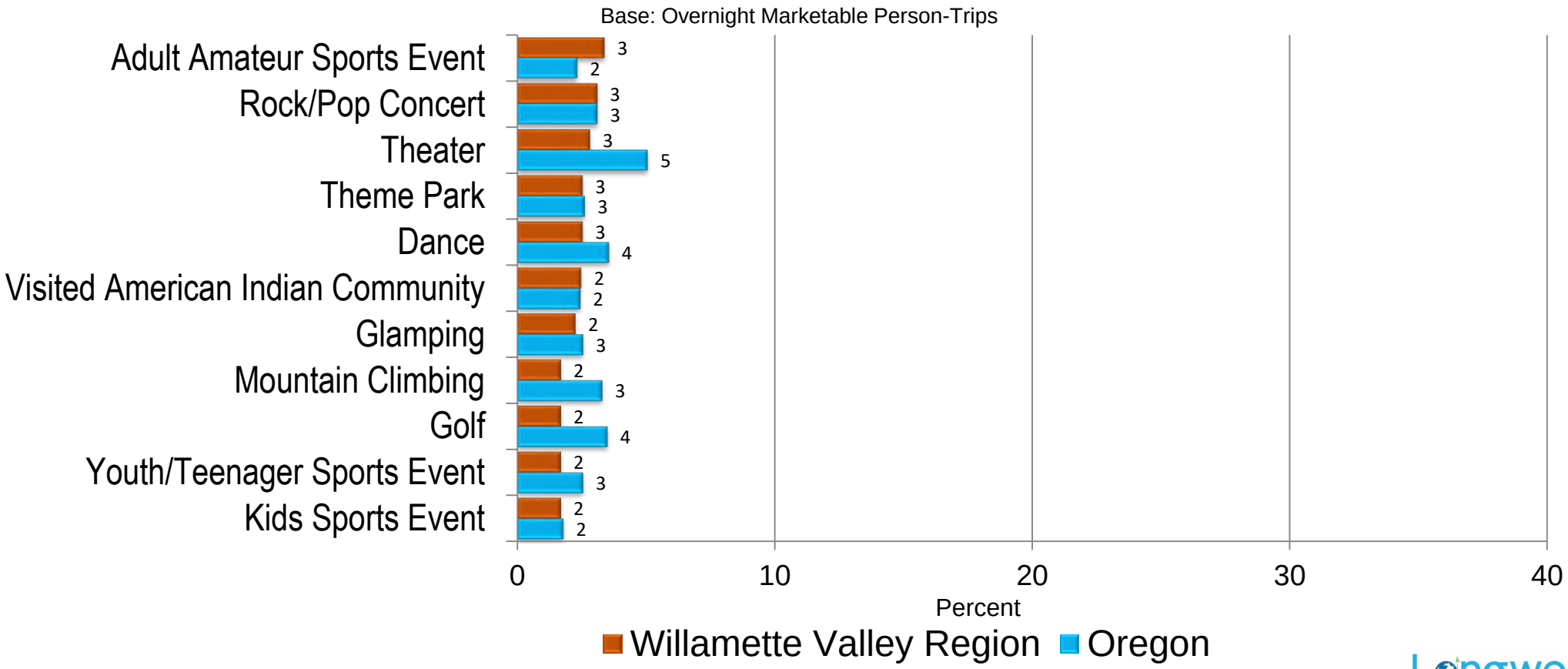
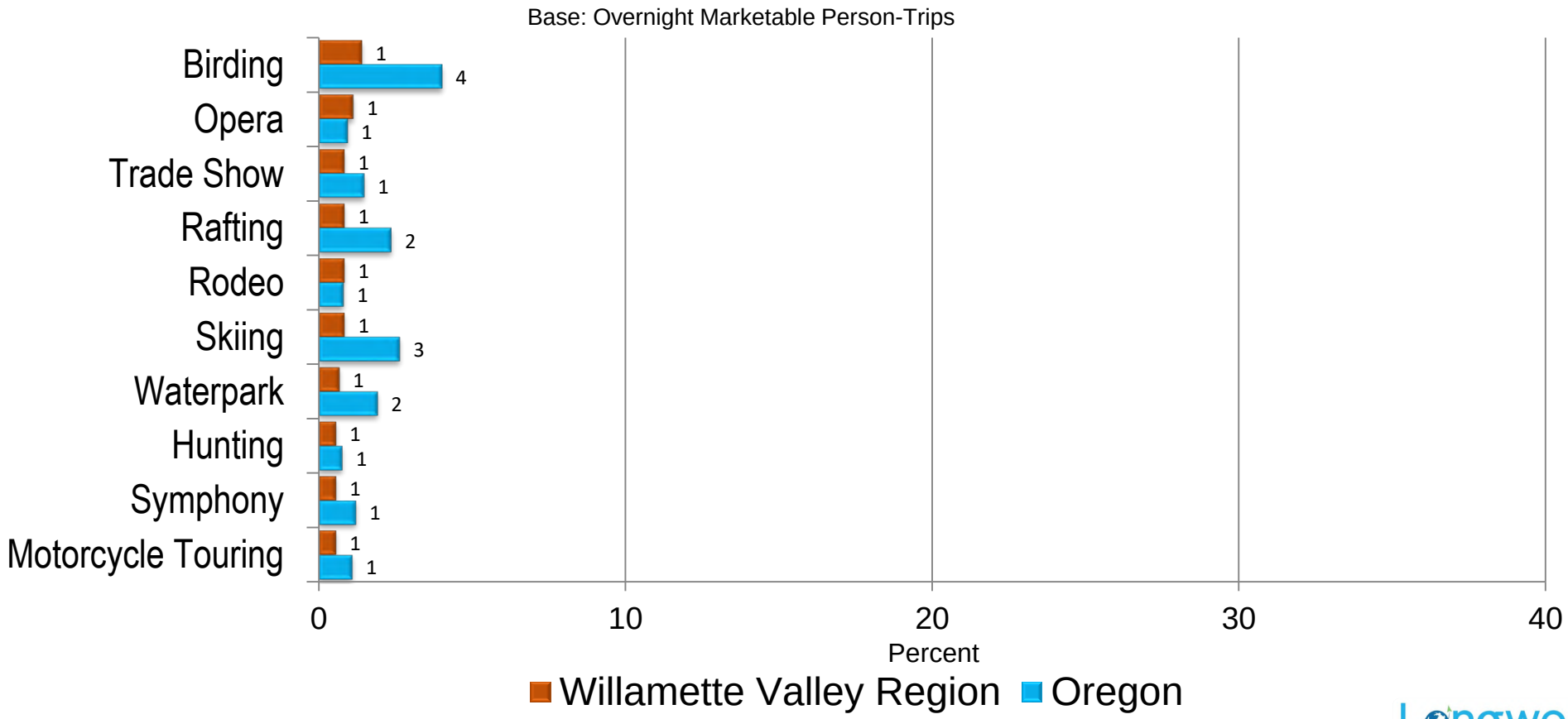
Activities and Experiences (Cont'd)



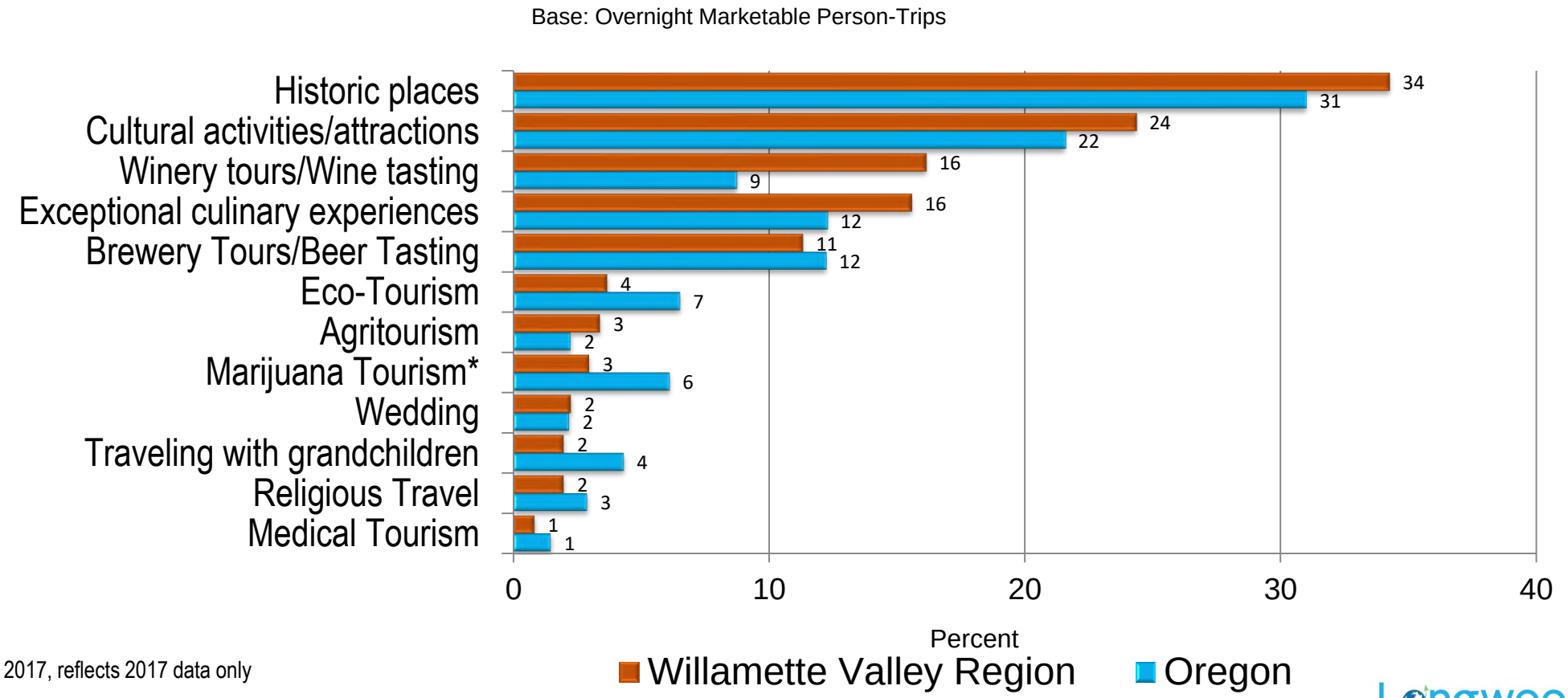
Activities and Experiences (Cont'd)



Activities and Experiences (Cont'd)

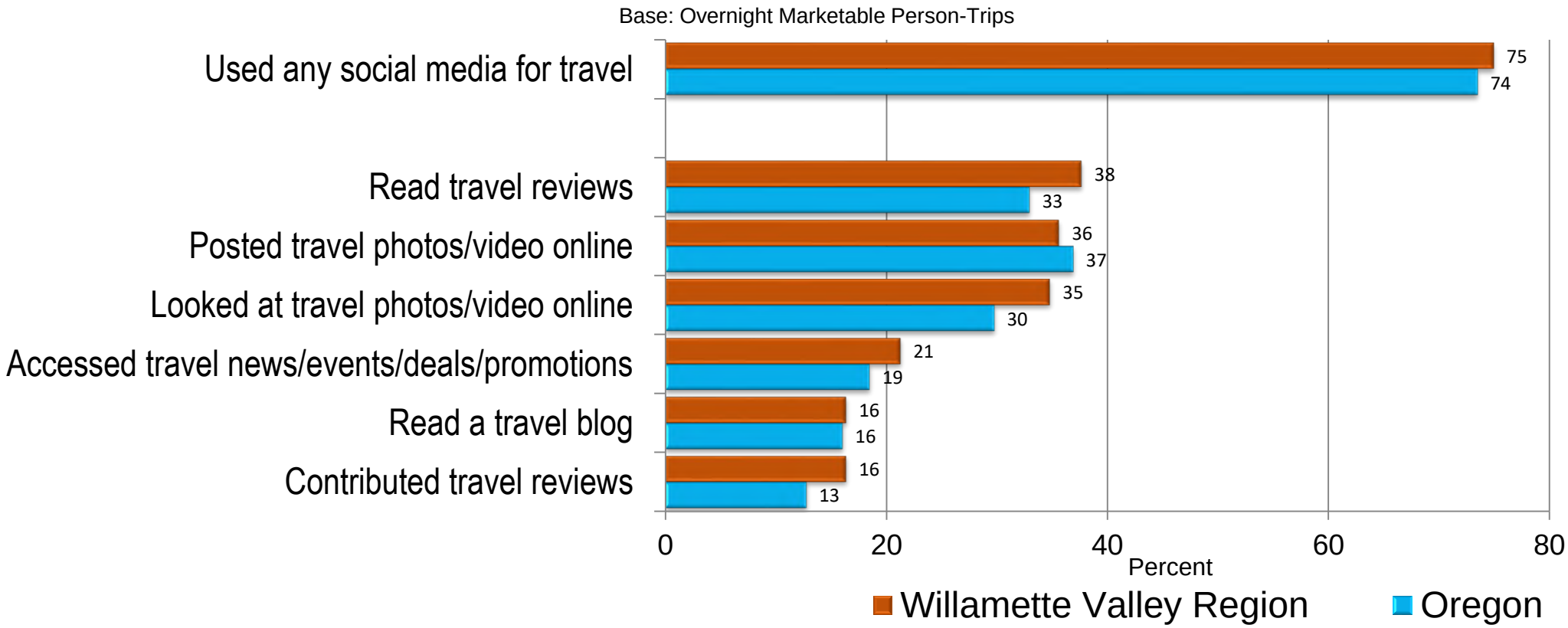


Activities of Special Interest

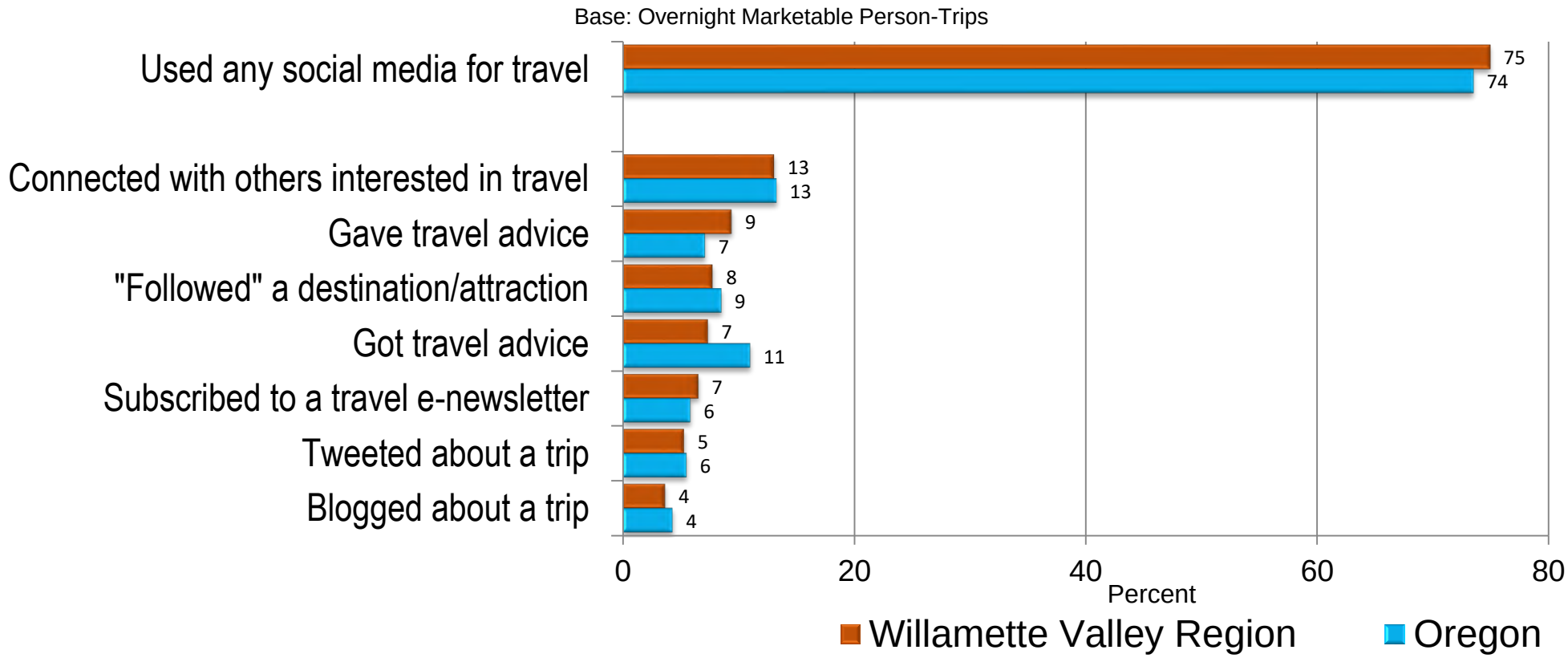


*Added in 2017, reflects 2017 data only

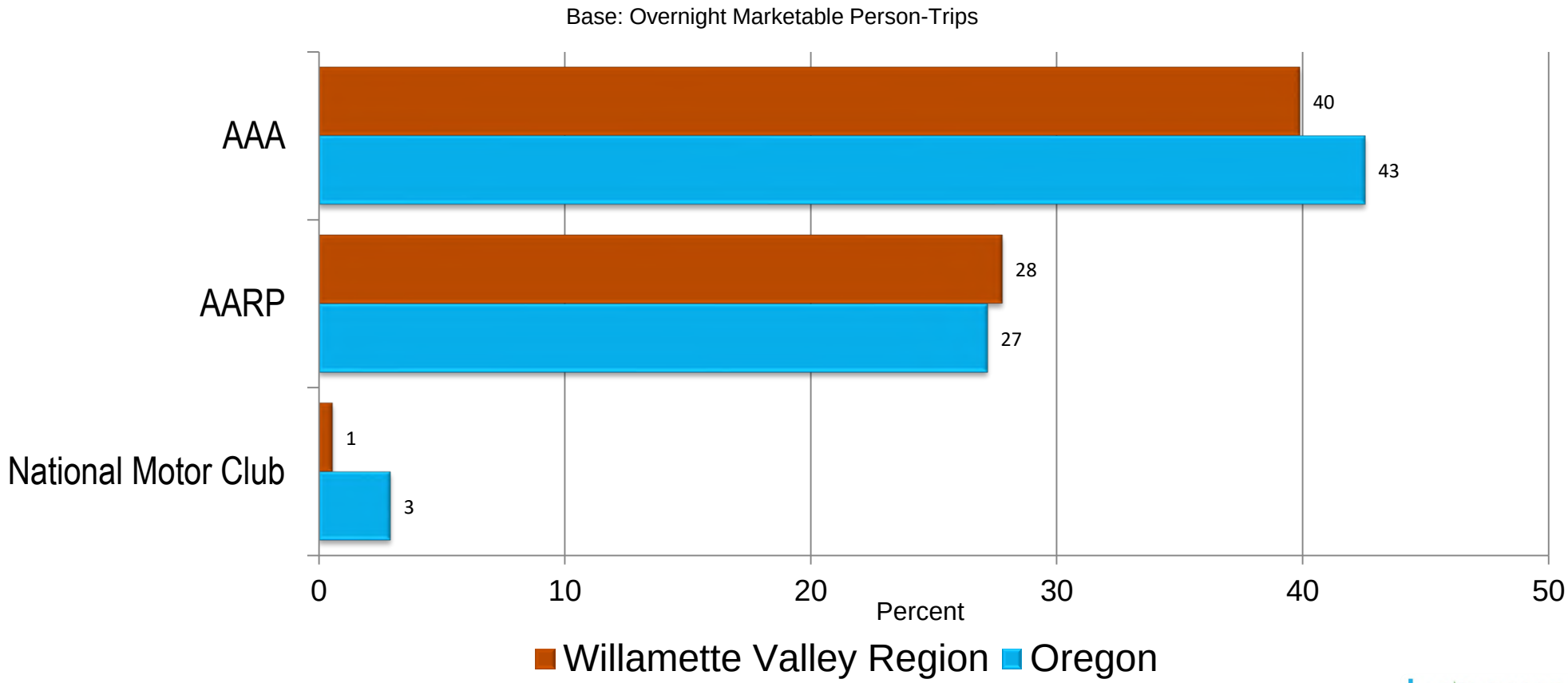
Online Social Media Use by Travelers



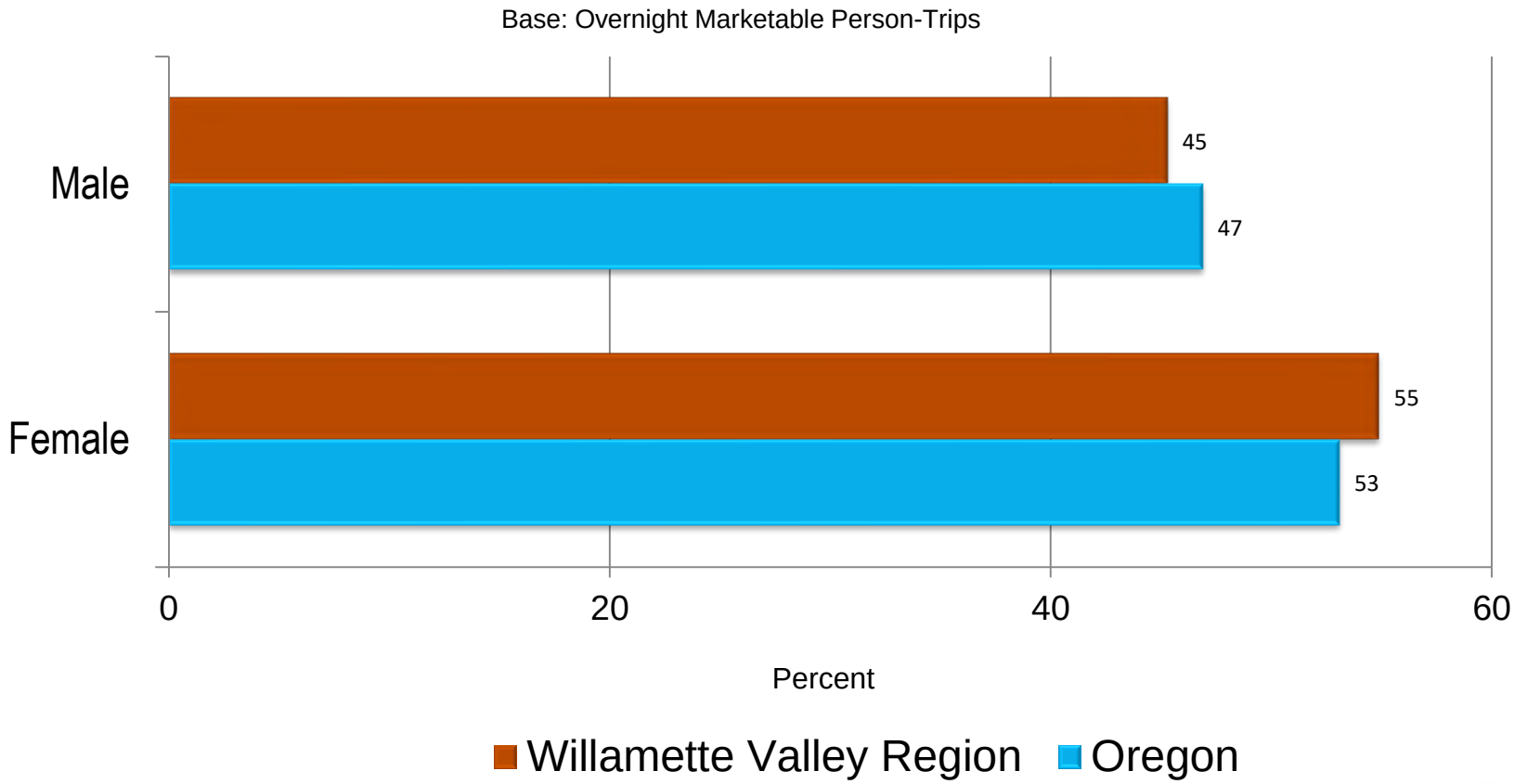
Online Social Media Use by Travelers (Cont'd)



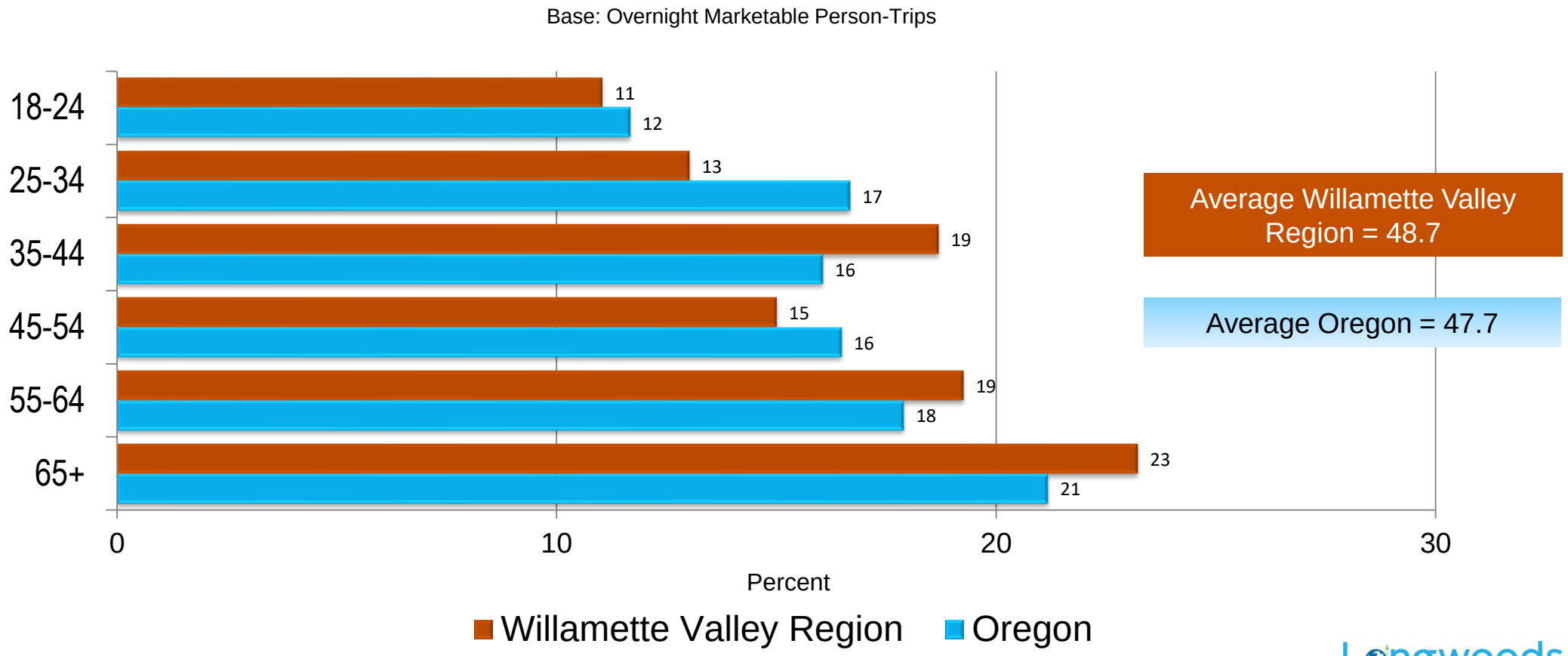
Organization Membership



Gender



Age



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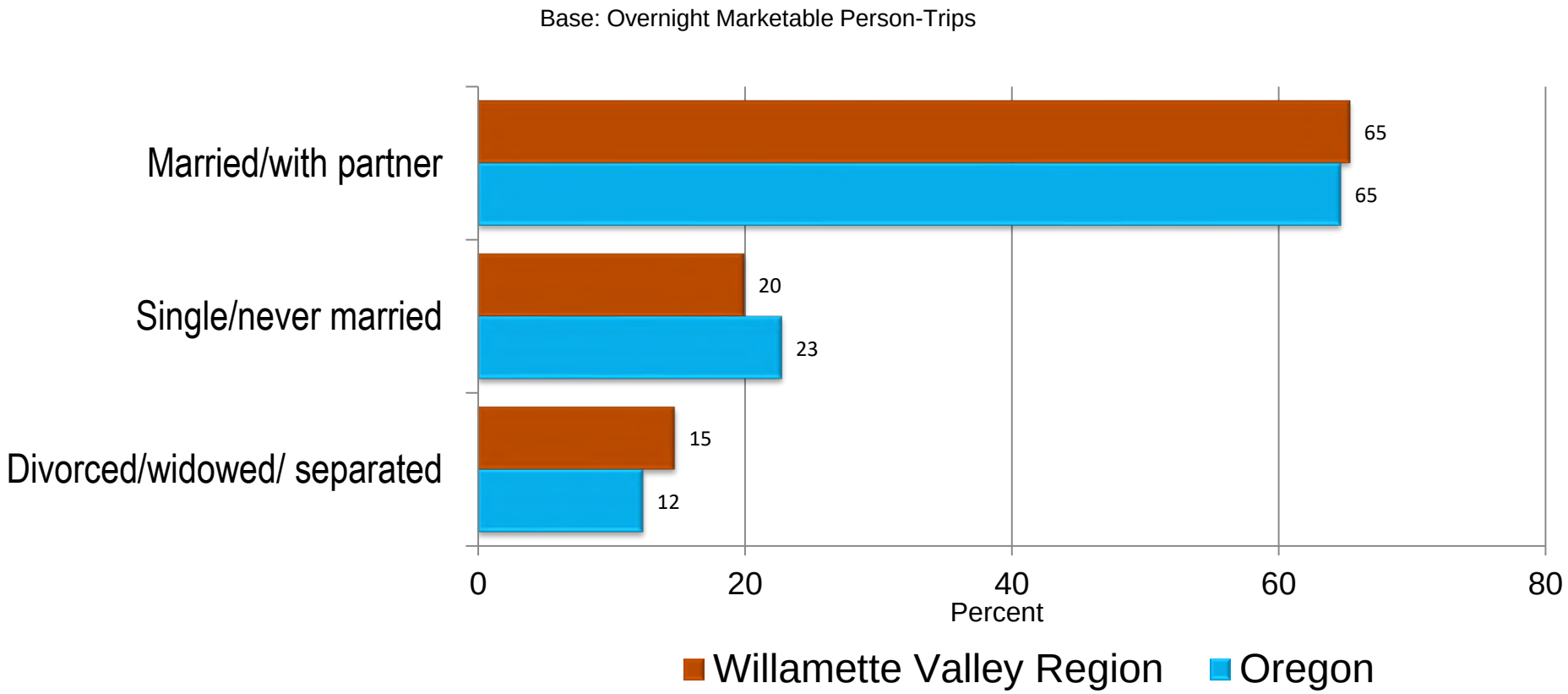
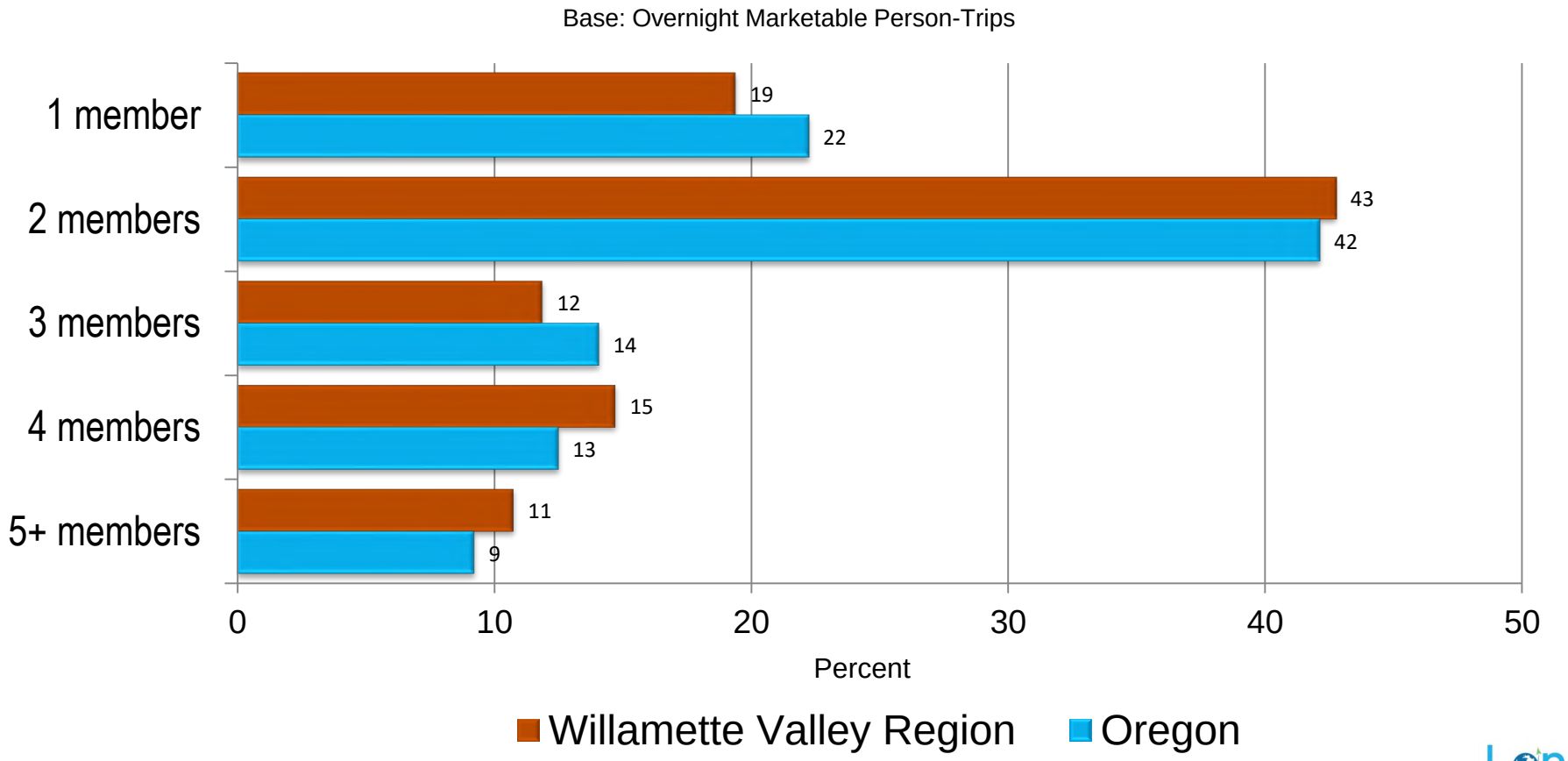
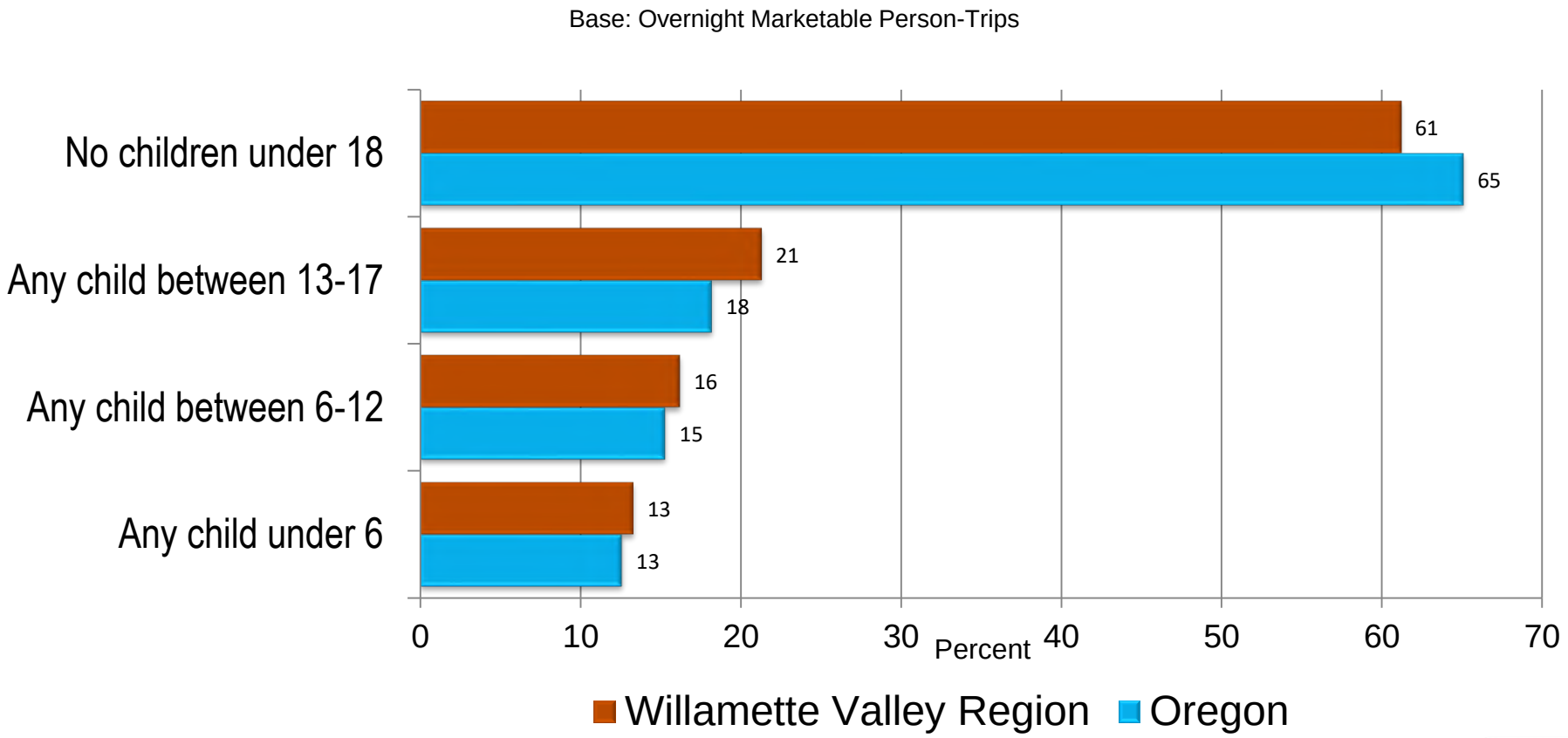
Marital Status



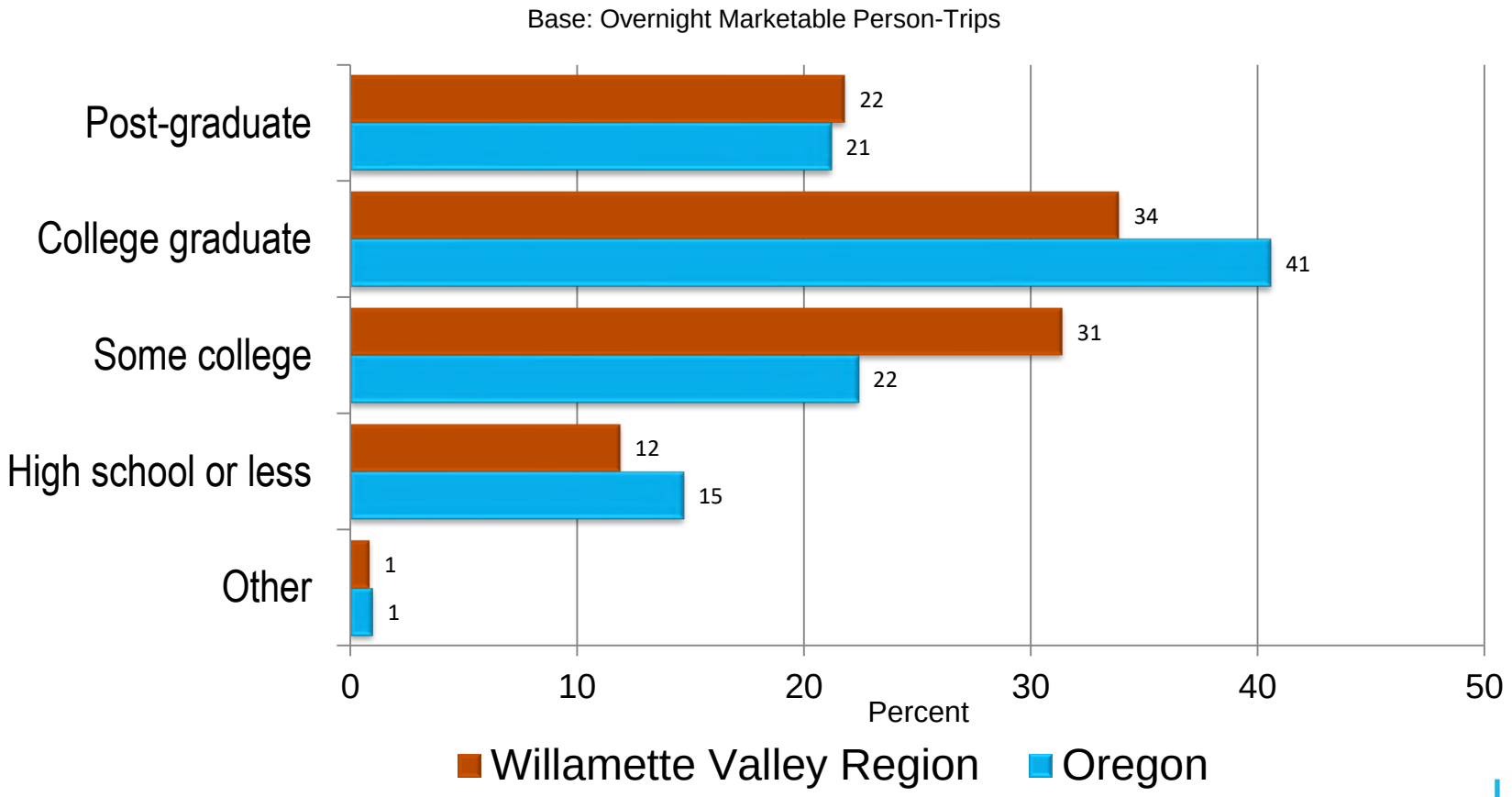
Household Size



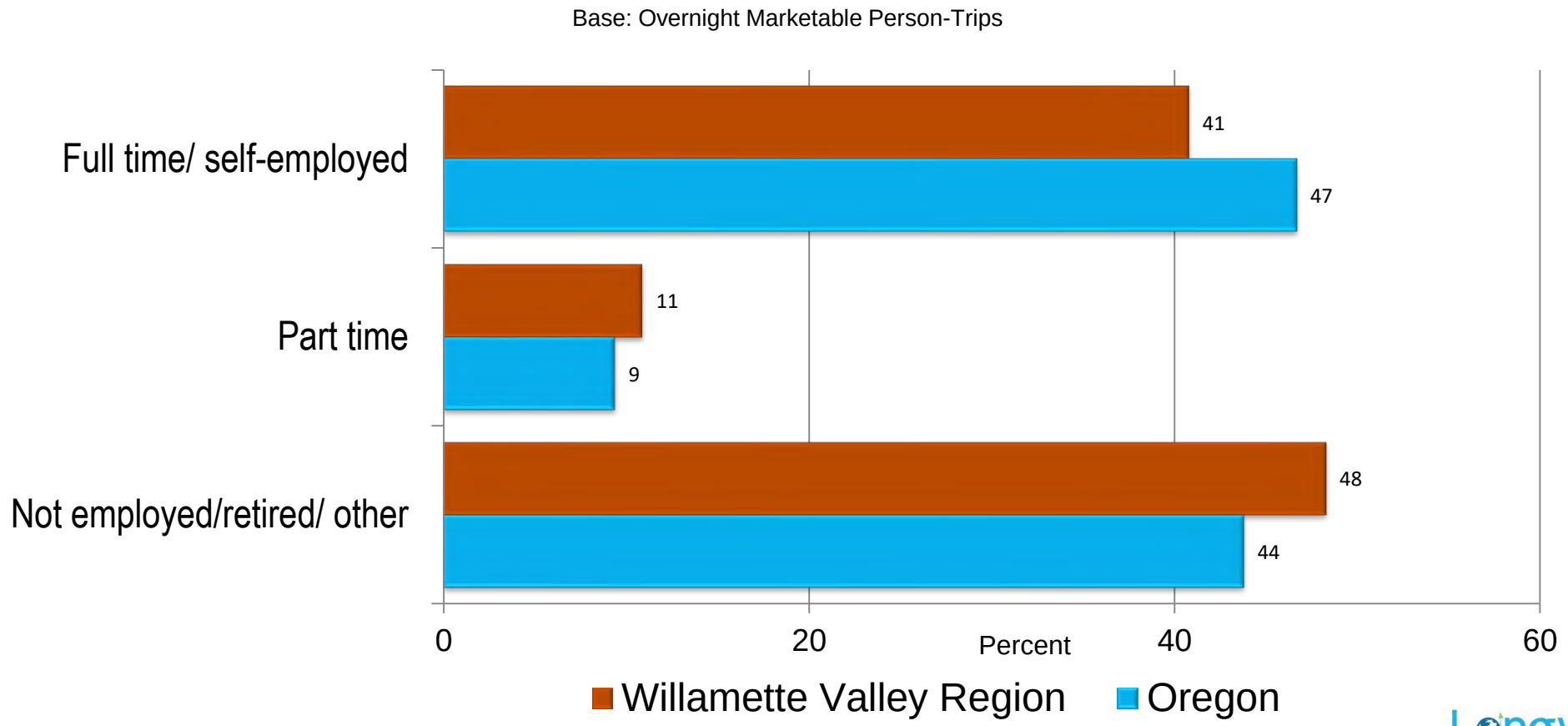
Children in Household



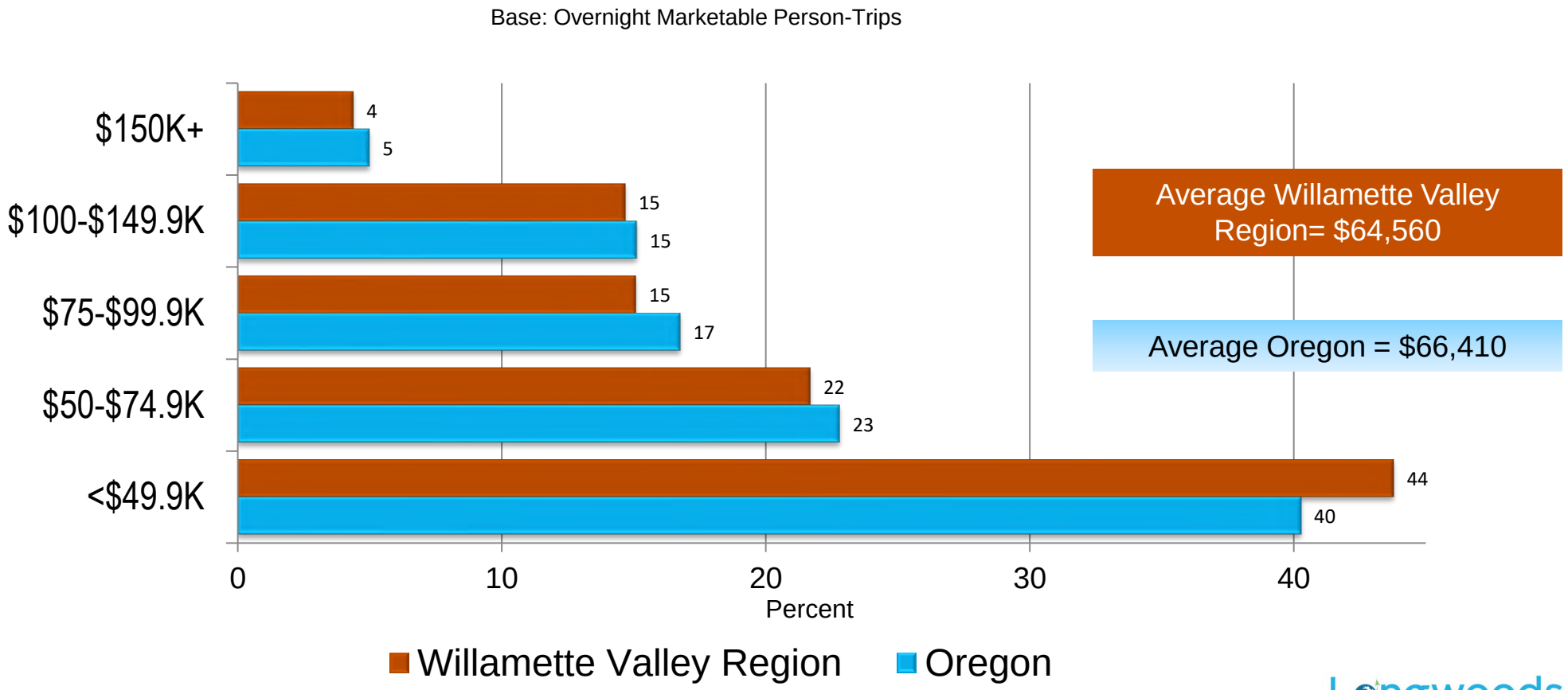
Education



Employment



Household Income



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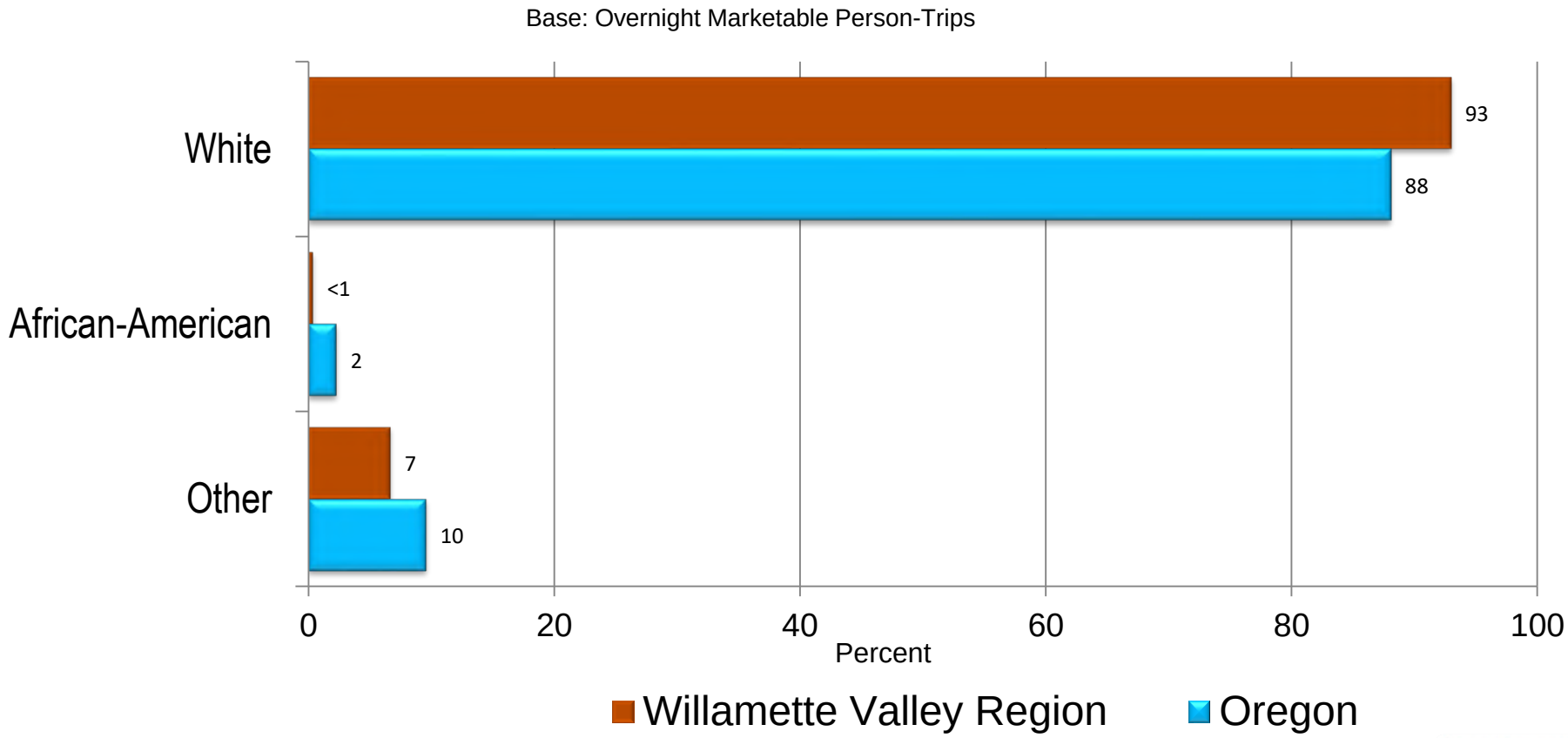
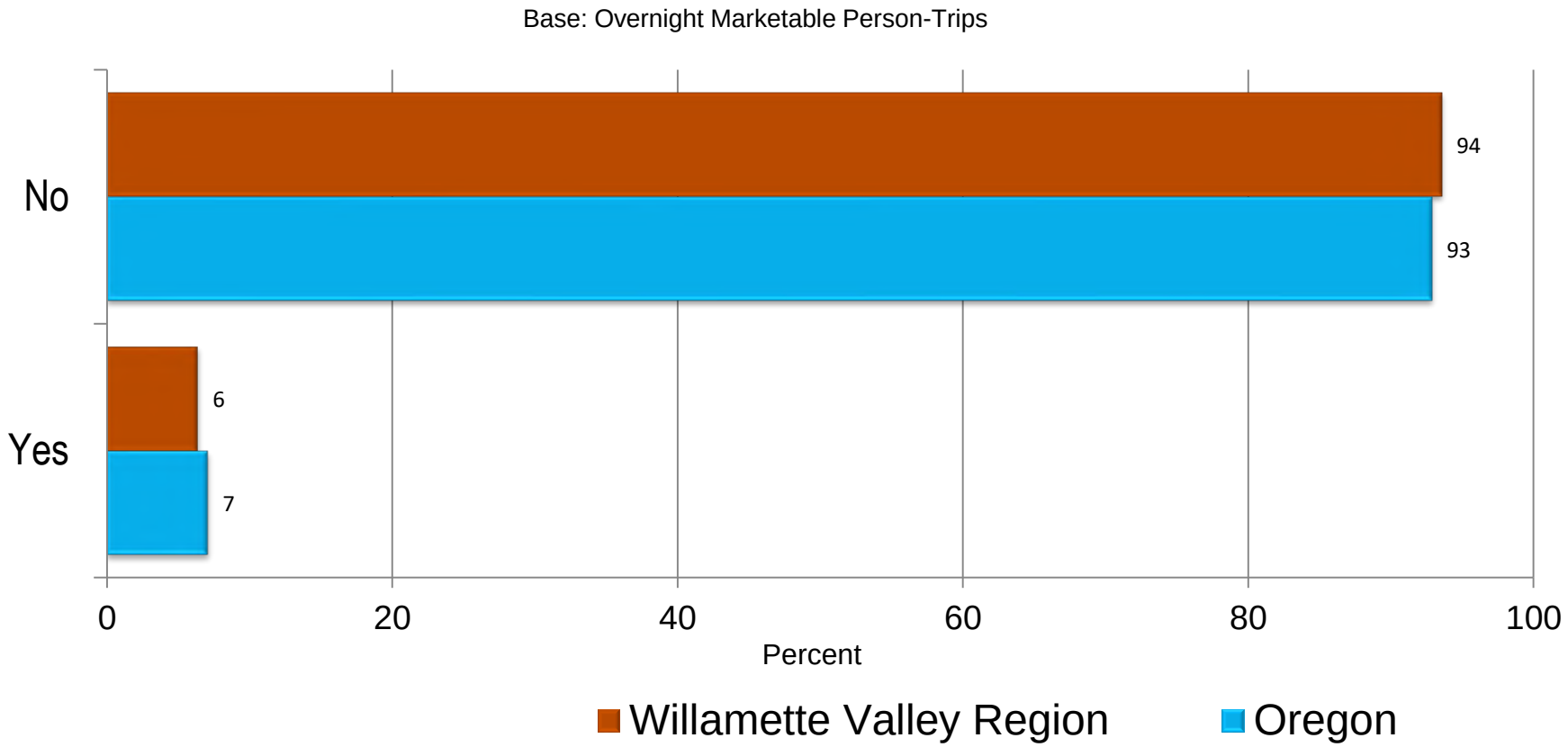
Race



Hispanic Background



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Appendix:
Key Terms Defined

Key Terms Defined

- An **Overnight Trip** is any journey for business or pleasure, outside your community and not part of your normal routine, where you spent one more nights away from home.
- A **Day Trip** is any journey for business or pleasure, outside your community and not part of your normal routine, that did not include an overnight stay. Day trips involve travel of more than 50 miles from home.
- A **Person-Trip** is one trip taken by one visitor.
  - Person-trips are the key unit of measure for this report.

Trip-Type Segments

Total Trips = Leisure + Business + Business-Leisure

- **Leisure Trips:** Include all trips where the main purpose was one of the following:
  - Visiting friends/relatives
  - Touring through a region to experience its scenic beauty, history and culture
  - Outdoors trip to enjoy activities such as camping, hunting, fishing, hiking, and boating
  - Special event, such as a fair, festival, or sports event
  - City trip
  - Cruise
  - Casino
  - Theme park
  - Resort (ocean beach, inland or mountain resort)
  - Skiing/snowboarding
  - Golf
- **Business Trips:**
  - Conference/convention
  - Other business trip
- **Business-Leisure:** a trip for business where, on the same trip, the visitor stayed for at least one additional day to experience the same place or nearby area simply for leisure.

Marketable Trips:
Include all leisure trips, with the exception of visits to friends/relatives

Average Noise Levels Compared in Short-Term Rentals and Long-Term Occupied Homes

When Henry Ford's Model T rolled off the assembly line in 1908, the existing rules of the road were instantly rendered inadequate. In the following decade, pedestrian and passenger fatalities caused by driver misconduct, such as speeding and drunk driving, compelled regulators to respond. Were all drivers culpable for the negative outcomes that drove the legislation? Certainly not. Was it necessary to create regulations to promote public safety? Of course. An obvious parallel exists today as the tidal wave of legislation rises to address the (perceived) negative outcomes of the burgeoning short-term vacation rental industry.

In this article, I endeavor to look at the “noise issue” using data from two **NoiseAware** exploratory studies. The first study compared average noise levels in short-term rentals with noise levels in long-term occupied homes. This eight-week study took place in Charleston across thirty-four short-term rentals and long-term occupied homes. Long-term occupied homes included both tenants with twelve-month leases and owner-occupied properties. This study was conducted in partnership with **HomeAway**. The second study evaluated noise monitoring technology’s ability to resolve noise disturbances more efficiently than relying on code enforcement. This study compared the City of Palm Springs’ published vacation rental hotline data with the data produced by 181 Palm Springs vacation rental homes equipped with noise monitoring systems. This study was conducted in partnership with the **Palm Springs Vacation Rental Tourism Association**.

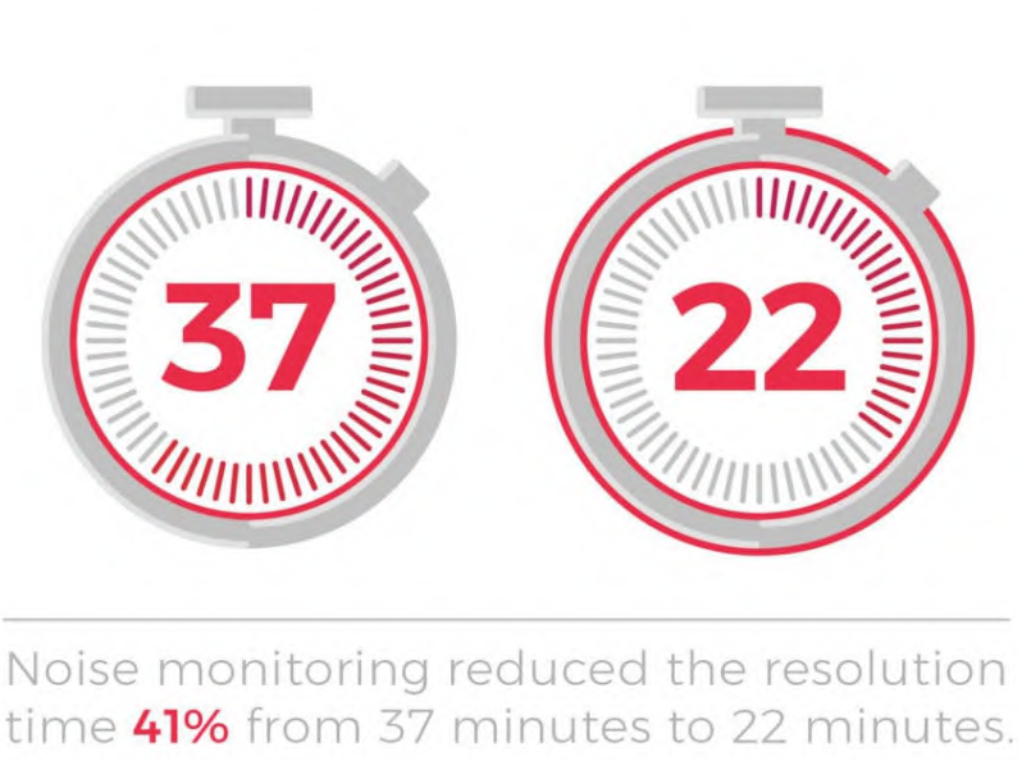
WHAT WERE THE RESULTS?

CHARLESTON STUDY:

The Charleston study sampled over 2.9 million minutes and did not find evidence that the average short-term rental was louder than the average long-term occupied home. In fact, the short-term rental properties were quieter than long-term occupied homes four out of seven days of the week—Sunday through Wednesday. As for which units appeared to have the highest average volume, sleeping capacity most distinctly correlated positively with loudness, not whether a property was used for short-term or long-term occupancy.

PALM SPRINGS STUDY:

During the six-month study period from September 4, 2017, to March 11, 2018, an analysis of the **Palm Springs Vacation Rental Department** data shows that the average response time for the 348 calls was thirty-seven minutes. During the same period, in the vacation rental homes equipped with noise monitoring systems, the average time from noise alert to resolution was twenty-two minutes. Noise monitoring reduced the resolution time 41 percent from thirty-seven minutes to twenty-two minutes.



WHAT DO THESE RESULTS MEAN?

The results of the Charleston study indicate the following:

- Living next to a short-term rental does not necessarily mean you will have a louder neighbor than living next to a long-term occupant.
- The positive correlation of maximum capacity with loudness indicates that the higher the number of occupants at a property—whether short-term or long-term—the greater the chance of potential noise issues.

The results of the Palm Springs study indicate the following:

- Noise nuisance issues are more efficiently resolved using technology than relying on neighbor complaints and code enforcement.
- Resolution of noise issues can be achieved using noise monitoring systems without relying on neighbors to take any action.

WHY ARE THESE RESULTS IMPORTANT?

Vacation rental managers know that the narrative of loud party houses is overblown. Never before has there been data like this available that supports the counter-narrative: that vacation rental properties can be great neighbors. In the regulatory arena, these first-of-their-kind exploratory studies can be powerful tools in the toolbox.

Bringing data to the table is critical in legislative debates. With cities, counties, and more recently, states considering regulatory actions, having data like this should lead to more balanced consideration. We've all heard of the neighbors who show up at City Hall with tales of unruly, loud behavior at the vacation rental next door. Those stories have often driven the narrative that short-term rentals are incompatible with neighborliness. However, the antidote to sensational anecdotes is context and relevant additional information.

These studies help shift the regulatory conversation from punishment and enforcement to an orientation around proactive, self-sufficient solutions. Cities do not want to police low-priority noise nuisance issues—at short-term rentals or long-term residences. So, educating legislators about the existence and effectiveness of noise monitoring technology tempers the inclination to overregulate. The ability to self-police noise issues using technology is a powerful concept, and one that both regulators and neighbors can support.

Just as the Model T ushered the automobile onto Main Street, short-term rentals are now squarely in the mainstream. Because history tends to repeat itself, we are smack in the middle of the reactionary regulatory period. Driver misconduct led to the first wave of

automobile regulations, so it should be no surprise that the collateral impacts of short-term rentals on neighbors and neighborhoods are being hyper-scrutinized.

With noise nuisance issues high on the list of neighbor concerns, it is critical that we have information at our disposal to make these two critical points: short-term rentals do not inherently make for bad neighbors, and when noise issues do arise, there are solutions available to bring efficient resolution without relying on neighbors to lift a finger.

Original Article: https://vrmintel.com/average-noise-levels-compared-in-short-term-rentals-and-long-term-occupied-homes/

The Effect of the Shared Economy on Crime: Evidence from Airbnb*

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Abstract

The rapid growth of Airbnb and the shared economy has made it critically important that we develop a better understanding of the impact of the Airbnb market on other segments of the economy and the safety of neighborhoods. We empirically examine the impact of Airbnb on neighborhood crime. The results indicate that a 10% increase in the number of Airbnb hosts decreases neighborhood crime by over 2.5%. The effect is largest in locations with higher incomes and more expensive housing. The results are robust across a variety of controls for selection bias, endogeneity, and different measures of Airbnb activity.

JEL Codes: R3, 033, M21, I31, L85

Keywords: Shared Economy, Crime, Airbnb

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1 Introduction

The rapid expansion of peer-to-peer markets has garnered substantial interest in both the popular press and academic literature. What is most clear, at this point in time, is that peer-to-peer markets provide a variety of benefits and costs, some of which are easily anticipated while others are harder to foresee. This research focuses on how the peer-to-peer short term rental of real estate property through the Airbnb platform affects safety in a neighborhood.

Airbnb provides a platform where an owner (and sometimes a long term renter) of real estate can, with minimal entry or exit costs, become an Airbnb host and offer the real estate for short term rent. As the use of Airbnb becomes more prevalent, the types of people and the amount of economic activity can change. These changes can influence the type and amount of crime in locations with Airbnb rentals. It is important to study the effects of Airbnb on crime because crime has been shown to have a negative effect on property values and business (Lens and Meltzer, 2016). Although the effects of different policies on crime have been studied in the literature, we are the first paper to use detailed block group level data to study the effects of Airbnb on crime (Stacy, 2018).

The peer-to-peer short term rental of property can have a variety of costs and benefits to the neighborhood. In fact, there is some evidence that short term renters can create a nuisance and disrupt year round residents (Lee, 2016; Gurran, 2018; Schäfer and Braun, 2016; Wachsmuth and Weisler, 2018; Gant, 2016). In terms of crime, the perceived costs of committing a crime may be reduced when partying on vacation. In addition, the amount of crime is related to the opportunity to commit crime. Tourists can provide an increased

opportunity for would-be criminals, because tourists are not familiar with their surroundings, are more likely to be carrying cash, and are spending money on entertainment, food and drink. In short, the introduction of tourists into a location can increase crime by reducing the expected cost and increasing the benefits of committing crime.

However, there are a variety of factors that may reduce crime. For example, tourists increase the presence of people on the street. This can make it more likely that a criminal will be caught and identified, thus deterring crime. There is also evidence that Airbnb raises local house prices and this may lead to gentrification (Wyman and McLeod, 2019; Sheppard et al., 2016). In fact, as part of this gentrification, we find evidence that the introduction of Airbnb to a neighborhood is associated with an increase in sales and employment by establishments that provide amenities (such as restaurants, bars, entertainment, and cultural establishments).

In summary, there are a variety of mechanisms through which Airbnb rentals could affect crime rates. In this paper we conduct an empirical examination at the local or neighborhood level to see if Airbnb increases or decreases crime. We use individual incident level reports provided by the City of Milwaukee in Wisconsin and Airbnb host level information to examine the interplay between Airbnb and crime from before the introduction of Airbnb to the region in 2011 through the end of 2017.

Since Airbnb is not randomly assigned to different parts of the city, we include a wide array of demographic and economic variables to control for the selection process. Neighborhood level (census block group) fixed effects are also included to control for unobserved time invariant local factors. As a result, identification relies on the relationship between neighborhood level monthly changes in Airbnb and crime. Since crime and Airbnb are clearly jointly determined, we use a Bartik style instrumental variable approach. To help control for recent criticism of Bartik style instruments (for example, Goldsmith-Pinkham et al. (2018), Broxterman and Larson (2020)), we construct the instrument using a long-lagged measure of

the extent of tourist attractiveness interacted with worldwide internet searches for Airbnb. Our approach is aided by the fact that crime changes over time and has a high variance. As a result of all these factors, our results indicate that the instrument meets all exclusion restrictions.

We find consistent evidence that having more Airbnb rentals in an area meaningfully reduces crime, suggesting that Airbnb can be a mechanism to help spur gentrification and enhance neighborhood safety. While these results are derived from a single city, they do suggest that in urban areas, especially those with modest growth, the presence of Airbnb can meaningfully improve the safety of a neighborhood.

The remainder of the paper is organized as follows. Section 2 reviews the current state of the literature on Airbnb. Section 3 describes the conceptual framework regarding the effects of Airbnb on crime. Section 4 discusses data sources and descriptive statistics. Section 5 describes our empirical approach and identification strategy. Section 6 presents the empirical results. Section 7 concludes the paper.

2 Literature on Airbnb

Since Airbnb rentals are mostly short term (typically ranging from a single day to about a week), Airbnb is in direct competition with the hotel industry. Airbnb typically offers a lower cost option to a traditional hotel. It also usually provides a different mix of amenities and services (such as food service or on site gyms) and is less regulated and taxed than hotels. Airbnb listings are very flexible because a host can enter and exit the market with only trivial costs. It should be no surprise that this flexible supply of rentable space with a low marginal cost function is an effective competitor with hotels and has its largest impact on hotel revenues during periods of peak demand. While empirical estimates all agree that Airbnb listings reduce revenue and occupancy for hotels, the order of magnitude varies substantially,

ranging from 0.36 to 10 percent reduction in revenue in response to a 10 percent increase in Airbnb listings (Farronato and Fradkin, 2018; Zervas et al., 2017; Mao et al., 2019).

The returns to home ownership generally include both the value of consuming the benefits of property use and any financial gains associated with ownership. Airbnb provides a platform where a homeowner can explicitly earn rent periodically (similar to a dividend yield for corporations or the capitalization rate for commercial property), thus increasing the explicit financial returns of ownership. Through this mechanism and others, Airbnb increases the value of the property itself (Wyman and McLeod, 2019) as well as nearby property (Wyman and McLeod, 2019; Barron et al., 2018; Sheppard et al., 2016; Kim et al., 2017). This is in contrast to multifamily rentals, which tend to depress the value of nearby property. The negative spillovers associated with multifamily housing are typically related to maintenance issues (Iwata and Yamaga, 2008; Gatzlaff et al., 1998; Clauretie and Wolverton, 2006; Stull, 1975; Autor et al., 2014; Turnbull and Zahirovic-Herbert, 2012; Thomas and Neil, 1996; Gatzlaff et al., 1998). Wyman and McLeod (2019) hypothesize that owners of short-term rentals do a better job than long-term rental owners in maintaining their property, because of the quick feedback and the need for reputation-building through the Airbnb listing service. Rapid turnover also gives an owner easier access to the building to resolve maintenance issues.

In addition to having different spillover effects than multifamily property, Airbnb has some direct impacts on the multifamily market itself. For example, due to the conversion of long term rentals into short term rentals, Airbnb is associated with higher long term (or traditional) rental rates (Barron et al., 2018; Horn and Merante, 2017). While an increase in rental income is positive for the owner, it imposes increased costs on existing long-term renters. In worldwide tourist destinations (for example, Berlin, Barcelona, Los Angeles, New Orleans and New York City), formerly residential areas have been converted into rental/tourist-dominated areas. The loss of neighborhood feel and the spatial concen-

tration of tourists has led to complaints of poor tourist behavior and perceptions of increased traffic and decreased safety (Lee, 2016; Gurran, 2018; Schäfer and Braun, 2016; Wachsmuth and Weisler, 2018; Gant, 2016). Concerns about these negative spillovers have led to increased regulations, which typically limit the number of guests and the number of days a property can be available, increase or institute new fees, and in some locations partially ban Airbnb (Nieuwland and van Melik, 2018; Palombo, 2015; Schäfer and Braun, 2016; Leshinsky and Schatz, 2018; Samaan, 2015).

In summary, the literature indicates that there are large economic gains to property owners from becoming Airbnb hosts. On the other hand, the social costs to the neighborhood and residents who rent property in the long-term market may be significant. This paper does not address the relative magnitude of the costs and benefits of peer-to-peer short term renting on a neighborhood, but instead focuses on the relation between Airbnb and local incidence of crime.

3 Motivation and Theory

Becker (1968) posits that a person commits a criminal offense if the expected benefit exceeds the expected cost. That is, a person will only commit a crime in a neighborhood if

$$E[Benefit] > E[cost(P, S, R)] \tag{1}$$

The expected cost of committing a crime is a function of the probability of being caught P, searching cost for potential victims S, and legal punishment if caught R. In a partial equilibrium, as the probability of being caught, search cost for potential victims, and legal punishment increase, it becomes more costly to commit a crime which leads to a lower crime rate. As a result, $\frac{\partial E[cost]}{\partial P} > 0$, $\frac{\partial E[cost]}{\partial S} > 0$, and $\frac{\partial E[cost]}{\partial R} > 0$.

Airbnb affects crime rates through two channels.

Gentrification. First, Airbnb has the potential to change a neighborhood through gentrification. Wachsmuth and Weisler (2018) identify the neighborhoods that have been significantly changed by Airbnb and Airbnb-induced gentrification. McDonald (1986) and Autor et al. (2014) show that gentrification reduces crime. In particular, a pseudo-natural experiment found that removing rent controls in Cambridge, Massachusetts led to a 16 percent reduction in crime.

There are several mechanisms by which Airbnb-induced gentrification can increase the probability of criminals being caught P and thus reduce crime rates. Airbnb generates rental income, which create incentives for hosts to upgrade their properties. Farrell et al. (2011) show that wealthier residents are more likely to invest in private security measures, such as alarm systems, which could increase the probability of a criminal being captured and thereby deter crime. Their research implies that with rental income generated from Airbnb, hosts are more likely to improve safety measures to deter crime and attract tourists.

Furthermore, the increase in property value due to Airbnb leads to an increase in the local property tax base, which can increase resources devoted to crime-fighting. In addition, the rental flow generated from Airbnb discourages property abandonment and foreclosure, which promotes neighborhood stability. Wilson (2012) and Sampson et al. (1997) show that neighborhood turnover increases crime by reducing social cohesion. By contrast, neighborhood stability increases resident attachment to the neighborhood and encourages active engagement, such as participation in neighborhood watch programs and other crime prevention activities.

Figure 1 provides suggestive evidence that one channel for Airbnb-related gentrification is an increase in economic and cultural vibrancy in the neighborhood. Using establishment level data, the figure shows an increase in employment and sales by amenity-producing establishments in locations with Airbnb. In fact, both sales and employment increases by

over 40 percent after entry of Airbnb in a location. These amenity-producing establishments include restaurants, bars, live music, movie theaters, aquariums, museums and other related establishments.

Therefore, in a partial equilibrium, more Airbnb rentals in an area will increase the probability of getting caught committing a crime, $\frac{\partial P}{\partial Airbnb} > 0$. Since the probability of getting caught increases the expected cost of committing crime $\frac{\partial E[cost]}{\partial P} > 0$, Airbnb also increases the expected cost of criminal activities $\frac{\partial E[cost]}{\partial Airbnb} > 0$. Through this channel, the presence of Airbnb in a neighborhood can reduce crime rates.

Spatial Impacts. In the second channel, Airbnb can affect the spatial location of crime. Airbnb brings tourists into residential neighborhoods, and those tourists can become targets of crime or commit crime themselves (especially if popular tourist activities involve use of alcohol or drugs). Therefore, an increase in Airbnb activity can be viewed as reducing the search cost for potential victims $\frac{\partial S}{\partial Airbnb} > 0$. Because $\frac{\partial E[cost]}{\partial S} > 0$, as Airbnb reduces S, the cost of committing a crime is reduced, $\frac{\partial E[cost]}{\partial S} > 0$, which leads to an increase in the incidence of crime.

Overall, in theory, the effects of Airbnb activities on the local crime rate are ambiguous. If the gentrification effects of Airbnb activities dominate the spatial effects, the net effect of Airbnb will be to decrease crime rates in neighborhoods with more Airbnb.

4 Data

We collect and merge information from various data sources to create a panel data set for the city of Milwaukee. Since crime is typically committed locally and is spatially clustered (Metz and Burdina, 2018), smaller neighborhood geographical units are preferable. Therefore, our unit of observation is the census block group in a given month from June 2011 until June 2017. The variable of interest is the total crime per capita, which we merge with information

about the Airbnb properties in the neighborhood. In addition, we collect demographic data, land use information, tourist related establishment counts, Google searches with the word "Airbnb," and funding rounds by Airbnb.

Our crime data comes from the Wisconsin Incident Based Report (WIBR) for the city of Milwaukee.[1] The data represents police services where a report about a crime was made and does not include calls made for other police services. Each crime receives a time, an address or location, and a classification (arson, assault offense, burglary, criminal damage, homicide, locked vehicle, sex offense, theft or vehicle theft). For incidents that did not report latitude and longitude, we georeference each occurrence using google maps API. The incident level data is aggregated to the census block group and month.

Airbnb data comes from AirDNA,[2] a company that collects information from each property available in the Airbnb website. The property and host information includes the number of bedrooms, number of baths, capacity measured as maximum number of guests allowed in the house, type of listing (i.e. Entire home/apt, Private room, shared room, etc.), location, rating measured in stars, and cancellation policy. The data also contains monthly performance information for each property. This includes reservation data measured by the number of times and the number of days the property was booked, the number of days the property was available for rent, the Average Daily Rate (ADR), and the total revenue.

Figure 2 shows the time series of the total number of crimes committed in the city of Milwaukee and the number of properties in Airbnb over our time period. The total number of crimes between June 2011 and June 2017 is 386,256. While there is a strong seasonal pattern to crime, there is no obvious long term trend, especially since 2014.

AirDNA tracks more than 11,400 listed properties in Milwaukee and, as the figure indicates, the number of properties available for rent though Airbnb has been increasing steadily

[1] https://data.milwaukee.gov/dataset/wibr
[2] https://www.airdna.co

since the middle of 2014. Figures 3 and 4 show the spatial distribution of Airbnb hosts and the log of crime per capita. The growth of Airbnb has focused on locations near downtown, along Lake Michigan, and close to the waterfront park system and Summerfest grounds (the location of a large summer musical festival). Crime is spread around the city but tends to be higher in the northwest quadrant of the city.

Table 1 describes each variable, as well as its source, and Table 2 provides summary statistics. For ease of interpretation, we include all variables in their level forms. Some variables are transformed by taking natural logs for estimation. There are just over 39,000 observations in the block group monthly panel data set. There is substantial variation in all variables. For example, the average count of Airbnb hosts within a census block group is 0.31 with a minimum of 0 and a maximum of approximately 33. There are on average 6.21 crime incidents of crime per 1,000 people per month and per block group, but the numbers vary from 0 to over 233. Following the literature on crime, we include a variety of controls for economic conditions and demographic information. In general, indicators of social and economic stress (disorder in the crime literature), as well as lower income and social inequality, are expected to be associated with higher rates of crime (Grogger, 1998; OBrien and Sampson, 2015; Alba et al., 1994; Boggess and Hipp, 2010; Cornwell and Trumbull, 1994; Cook, 2008; Kelly, 2000, See for example,). To control for these factors, we use the American Community Survey and collect a variety of measures at the census block group level. These control variables include measures of income, poverty, unemployment, race, educational attainment, age, renter versus homeowners, and the mode of transportation to work. Property vacancy rates are included to proxy for stress and the opportunity to commit a property-related crime. Inequality is measured using the income Gini coefficient at the Tract level and the ratio of median to mean income within the block group. The ACS data is reported annually and interpolated (straight line) across all months within the year.

The last three variables, which we will discuss in more detail later in the paper, relate

to the construction of our preferred instrumental variable (to identify the impact of Airbnb on crime). The variable Establishments 1990 is the number of establishments in 1990 that indicate the attractiveness of a location for tourists. For example, we include establishments identified as lodging, restaurants, bars, entertainment (such as music and theater venues), sports and athletics, gambling, zoos, aquariums, museums, and so on. These establishments include not only places where tourists stay overnight, but also the key activities that tourists would be attracted to and engage in. The source for this data is the Dun and Bradstreet establishment data compiled into a panel in the National Establishments Time Series (NETS) data set. To identify time varying interest in, or demand for, Airbnb, we include a measure of worldwide searches for "Airbnb" found in Google Trends. Google sets this measure to 100 in the time period when searches for Airbnb are at the highest level ever. A value of 60 in a particular time period indicates that searches were 60 percent of the all-time high. For Airbnb searches, the all-time high occurred after our data set ends in 2017. As a result, our maximum observed Google Trend measure is slightly less than 90. These two variables (Google Trend and Establishments 1990) are multiplied together in the style of a shift-share or Bartik instrumental variable: the share is measured by the count of establishments and the shift is measured by Google searches.

5 Empirical Methodology

We start with the following regression equation to estimate the effect of Airbnb on crime per capita:

$$lnY_{it} = \alpha + \beta lnAirbnb_{it} + \eta X_{it} + \delta_i + \theta_t + \varepsilon_{it} \tag{2}$$

where lnY_{it} is the natural log of one plus the number of crimes per thousand residents in block group i in year-month t, $lnAirbnb_{it}$ is the natural log of one plus the number of Airbnb properties, X_{it} is a vector of observed time-varying block group characteristics, δ_i is used to

control unobserved block group level factors, θ_t controls for unobserved time-varying factors that affect all block groups equally, and ε_{it} represents an identically and independently distributed random error term.

The empirical challenges include both the non-random selection of locations by Airbnb hosts and the possibility that crime could attract or deter Airbnb. Our approach to these selection issues is twofold. First, we include a large number of control variables. The observable controls include measures that describe each neighborhood along various dimensions related to crime – social and economic distress and the ease of the opportunity to commit a crime, X_{it}. In addition, to control for unobservables, the specification includes census block group fixed effects, δ_i reflecting time invariant neighborhood characteristics along with a vector of year*month fixed effects, θ_t, to control for seasonal variation in crime and overall or city-wide trends in crime over time. Therefore, the identification relies on the difference between the monthly time variation of the block relative to the city, after controlling for all observables. All of these controls limit concerns that missing variables could bias the results.

However, if crime itself directly causes Airbnb to locate in a census block, these controls will not be sufficient to rule out reverse causation. To address this endogeneity issue, we construct an instrumental variable which is plausibly uncorrelated with ε_{it} but likely to affect the Airbnb activities. Specifically, we construct a shift-share or Bartik-style instrument where the shift is measured through worldwide Google searches for "Airbnb"(the variable Google Trend), $google_t$, and the share is represented by a long-lagged measure of tourist-related establishments (the variable Establishments 1990), $amenity_{i,1990}$. Thus our instrument is $z_{it} = google_t \cdot amenity_{i,1990}$.

Following Barron et al. (2018), we use the worldwide Google Trends search index for the term "Airbnb" in constructing our instrument. The index measures the quantity of Google searches for "Airbnb" in each year-month t, and as shown in Figure 5, reflects the extent of interest in Airbnb across the world. It is implausible for worldwide searches for Airbnb

to be even tangentially related to changes in crime incidences at the census block group in Milwaukee. In contrast, worldwide interest in Airbnb is likely correlated with interest in Airbnb in Milwaukee. See Figure 5 for a plot of the Google Trends index of worldwide and Milwaukee Airbnb searches from year 2011 to 2018.

The variable Google Trend will only extract the time varying portion of Airbnb, but not the variation that is related to geography and intensity of interest. For that, we turn to a count of amenities that would make a neighborhood attractive to tourists, 1990 Establishments. Airbnb listings tend to be higher in more touristy areas with abundant amenities. However, such a measure will still create significant endogeneity problems if the count is contemporaneous with our data set. Our solution is to disentangle this measure from crime by using a long lag, more than 20 years. Crime tends to be volatile and unstable over time and space; it is common for crime rates to change dramatically and quickly in local neighborhoods. By contrast, the types of establishments that support tourism are likely to be more stable and long-term. In fact, the correlation of the log of establishments in 1990 with the log of establishments in 2015 is 0.5, indicating that the "touristy" nature of a location does have some persistence. Both of these factors – the volatility of crime rates and the long-term stability of establishments – help us create a valid instrument.

We also will test three other potential instruments. In the first, we interact the funding or capital raising history of Airbnb with 1990 Establishments to create the variable Venture Capital IV. Table 3 provides the history of the Airbnb funding rounds. In our specification, the variable, which we refer to as Venture Capital, indicates a new funding round by being increased by one unit. So, Venture Capital increases from 1 to 12 as the funding rounds occur over time. Venture capital infusions provide exogenous (to Milwaukee neighborhoods) shocks to Airbnb's ability to expand (Mao et al. (2019)). Hence, this variable will function as a proxy for supply changes in Airbnb over time that are not related to crime. In the second potential instrument, we focus on the number of establishments in the food and

accommodation industry in 1990, as a more limited measure of location amenities. This is interacted with Google Trend to create the Food IV variable. The last instrument we test includes a measure of property use derived from the 2005 City of Milwaukee master property file to approximate the zoning regulation at each location. It is the fraction of land in the block group that is zoned for residential (multifamily or single family) use. Again, it is interacted with 1990 Establishments to create the variable Zoning IV.

5.1 Validity of the Instrument Variable

For our instrument to be valid, the exclusion restriction requires that the instrument z_{it} be uncorrelated with the error term ε_{it}, that is, $cov(z_{it}, \varepsilon_{it}) = 0$. The year month fixed effect and block group fixed effect have absorbed the unobserved variation at the block group level and year month level. Our exclusion restriction requires Google trend $google_t$ and tourist-related establishments in 1990, $amenity_{i,1990}$ to be uncorrelated with unobserved block group, time-varying shocks; and it is unlikely that the changes to crime rates across all block groups are systematically correlated with Google trend $google_t$ and tourist-related establishments in 1990.

Given that Google Trend is plausibly exogenous, our cross-sectional exposure variable (1990 Establishments) must be uncorrelated with the unobserved block-group-specific, time-varying shocks to the crime rate. Therefore, it is important to discuss the validity of the instrument variable.

One intuitive approach to support the validity of the instrument is to test whether the instrument variable directly affects crime in block groups that never had any Airbnb listings. If the instrument is valid, it should correlate to crime only through its effect on Airbnb listings and thus should not directly affect crime in areas that never had any Airbnb listings. To test this, we regress the log of total crime rate per capita on different instrumental variables, using data from block groups that were never observed to have Airbnb listings, while controlling

for economic and demographic variables.

Table 4 reports the regression results. Column (1) shows that, conditioned on time fixed effects, block group fixed effects, and economic and demographic factors, there is no statistically significant relationship between our preferred instrument and crime. Column (2) shows that Venture Capital IV does not correlate with crime, and column (3) shows that Food IV also does not directly affect crime. However, column (4) does not provide support for the validity of Zoning IV, because there is a significant relationship between the instrument and crime.

In the second approach, we randomize the number of Airbnb listings. The randomization eliminates the source of variation needed for our instrument to work. If the instrument is valid, it affects crime only through the variation in Airbnb listings. As a result, we should observe zero correlation between Airbnb listing and crime – the instrument should fail to identify the causal effect of Airbnb. This approach follows Christian and Barrett (2017) and Barron et al. (2018). We randomly generate numbers from a uniform distribution and then randomly assign a number as the number of Airbnb listings to each block group. Column (1) in table 5 shows the same regressions as column (3) of table 7, except that the data for Airbnb listings in table 5 is randomly generated. As expected, there is no statistically significant relationship between the randomly generated Airbnb listings and crime, which supports the validity of our instrument.

6 Empirical Results

6.1 Main Results

Table 6 reports the base Ordinary Least Squares (OLS) results using a variety of control variables. All regressions cluster the standard errors at the block group level of geography. The first column shows that Airbnb is negatively correlated with the crime rate. However,

columns 2, 3 and 4 show that once block group fixed effects and year-month fixed effects are include, OLS finds no correlation between Airbnb and crime. These results help to control for the non-random way in which Airbnb selects locations but do not control for reverse causation (crime directly impacting Airbnb).

Table 7 presents the base instrumental variable results. As with the OLS results, all regressions include block group fixed effects and year-month fixed effects. The standard errors are clustered by block group. Airbnb is instrumented using the interaction of Google Trends searches and the count of 1990 tourist related establishments, $IVcount_{it}$. The results are very stable. In fact, in column 3, our preferred specification, a 10% increase in Airbnb decreases crime per capita by 2.68%. These results indicate that the gentrification effect of Airbnb dominates the spatial effect. The Kleibergen-Paap F statistics indicate that the instrumental variable provides sufficient explanatory power to identify, at the one percent level, the impact of Airbnb in the first stage results (Airbnb as a function of all exogenous variables and the $IVcount_{it}$).

The results also indicate that economic distress is associated with higher crime rates. While the control variables tend to have the anticipated sign, not all are statistically significant. However, lower income *is* statistically significant and drives up neighborhood crime. Higher rates of vacant property are also very consistently associated with higher crime rates, with statistically significant results. This is consistent with the crime literature, which suggests that social stability (economic distress) and opportunities to commit crime (search costs, which are reduced by vacant property) are important determinants of neighborhood level crime intensity.

Demographics also play a role in crime. In particular, locations with older populations experience more crime; and neighborhoods in which people rely more heavily on public transit are more susceptible to crime. However, we do not find any evidence that educational attainment, racial composition, home ownership, or income disparity have an impact on crime

rates. These factors may be correlated with the block group fixed effects and the overall time fixed effects.

Goldsmith-Pinkham et al. (2018) indicate that one way to test for whether our instrumental variable meets the exclusion restrictions (that our instrument does not predict crime through different channels than Airbnb), is to run empirical tests examining the stability of the estimated coefficient using alternative instruments. Table 8 conducts this test using three plausible, but not preferred, instruments. Column (1) uses Venture Capital IV as a proxy for supply changes in Airbnb over time that are not related to crime. The Kleibergen-Paap F Statistic indicates that it is a strong instrument. The impact of Airbnb on crime is very similar to the results using our preferred instrument. Column (2) uses Food IV. Again, the coefficient is very similar to the original point estimate and is a strong instrument (the Kleibergen-Paap F Statistic is significant at the 1 percent level). Likewise, Column (3), Zoning IV, shows results that are very similar to our original results. The variable is again an adequate instrument in terms of identification (the Kleibergen-Paap F Statistic is significant at the 1 percent level). However, this last result should be interpreted with caution because land use patterns are typically slow to change over time. This table provides additional evidence that our results are robust and meet the exclusion requirements.

6.2 Neighborhood and Spillover Effects

It is also likely that different types of neighborhoods will react in unique ways to the introduction of Airbnb. To investigate this possibility we create subsamples of neighborhoods based on income and rent. We start by identifying the median income of each block group in our sample. We define high income neighborhoods as the block groups in the top third of the median income distribution; low income neighborhoods are those in the bottom third. The first two columns in Table 9 show that Airbnb has no statistically significant impact on low income neighborhoods but reduces crime in high income neighborhoods. We examine

the role rent in the same way. As with income, Airbnb has no effect on the low rent (bottom third) neighborhoods but reduces crime in the high rent (top third) neighborhoods. It should be noted that the signs are negative in all specifications, but there is a lack of precision in some of the results.Airbnb tends to reduce crime more in more affluent neighborhoods. In other words, positive spillovers from Airbnb are differentiated across wealth when it comes to crime: the most well-off neighborhoods obtain more benefit from the presence of Airbnb rentals. Thus, Airbnb can contribute to even more disparity between urban neighborhoods in terms of safety and stability.

The results so far indicate that the presence of Airbnb tends to reduce crime. However, the impact of Airbnb on crime may spillover into nearby neighborhoods. There is evidence of spatial spillovers when enforcement and deterrence are increased (Bronars and Lott (1998), Galletta (2017) and Rincke and Traxler (2011)). Although most of the spill over evidence suggests that increases in enforcement decreases crime in nearby locations, there is evidence of the opposite too (Bronars and Lott (1998)). In our case, Airbnb impacts crime through a decrease in search cost of potential targets of crime (i.e. more tourists to be a victim of a crime) or though an increase in the opportunity cost through a more vibrant local economy (i.e. more employment). Therefore, spillovers in our case could be positive or negative. For example, if reductions in local crime improve conditions in neighboring blocks, then the spatial spillover would be a positive. This could reinforce the idea that Airbnb is a gentrifying force that drives down overall crime. However, crime can also move to locations where the expected returns to crime are higher. This would reduce the overall positive impact of Airbnb as crime shifts to new neighborhoods. Table 10 tests for these spatial spillovers. Three specifications are included, but they all show the same results. While Airbnb does decrease crime in the local neighborhood, Airbnb in nearby blocks (next to the local neighborhood) increases crime. Our spillover variable $Airbnbtract_{it}$ is defined as the log of 1 + the count of Airbnb hosts in all the census block groups within the census tract, after excluding the count

within the local block. So, it provides a measure of the density of Airbnb surrounding the local neighborhood. Both of these variables are treated as endogenous and instrumented. The instrumental variable use for $Airbnbtract_{it}$ is the preferred IV while using the same geography described above. The coefficient estimates indicate that a 10 percent increase in Airbnb in the local neighborhood with no nearby Airbnb would lead to a reduction in crime of 3.36 percent. If the nearby neighborhoods also see a 10 percent increase in Airbnb, crime is still reduced, but by 2.04 percent (-0.336 + 0.132). In fact, if growth in Airbnb in the nearby neighborhood is a little over 2.5 times more than local neighborhood, local crime can increase.

6.3 Robustness Checks

Table 11 shows that the effect of Airbnb on crime is robust across different measures of Airbnb activity in the block group. Column (2) reports that a 10% increase in maximum number of guests reduces crime per capita by 1.8%. Column (1) shows that as the number of Airbnb reservations increases by 10%, crime per capita also decreases by 1.8%. In column (3) we test the impact of the average daily rate per room. The impact on crime is still negative but is not estimated with enough precision. Overall, the results indicate that more Airbnb, but not necessarily how much it costs, helps to drive down the amount of crime in a neighborhood.

Table 12 examines how the impact of Airbnb varies for different types of crime. Following definitions from Bureau of Justice Statistics, we classify arson, burglary, criminal damage, locked vehicle, theft, and vehicle theft as property crime. Violent crime is defined as any incident related to homicide, assault, or sex offense. Columns (1) and (2) show that Airbnb reduces the prevalence of property and violent crime. Although the point estimates are different, they are statistically indistinguishable from each other. In column (3) we report the results for a linear probability model of homicide. Homicide is coded as 1 if at least

one homicide occurred in the neighborhood and month, otherwise it is 0. This approach is used because the vast majority of observations do not have a homicide and in even fewer observations was there more than one homicide. The results indicate that Airbnb has no relation to the probability of a homicide. In summary, Airbnb reduces both violent and property crime by similar amounts. However, the most severe type of violent crime, homicide, is unrelated to Airbnb.

We also hypothesized that the impact of Airbnb rentals on crime would change across the seasons, because activity levels can change so much in the Milwaukee area. Winter is slow – the weather can be harsh, with an average low temperature of 13 degrees Fahrenheit in January, and there is relatively little activity to attract tourists. By contrast, summer is a very busy time, with a broad array of outdoor festivals that bring hundreds of thousands of visitors into the area throughout the summer months. Given this, it is somewhat surprising that Table 13 shows that Airbnb reduces crime by a similar order of magnitude in all seasons. The consistency of results suggests that the impact of Airbnb is permanent, supporting the theory that the dominant mechanism through which Airbnb reduces crime is long-term gentrification.

All the prior results used a monthly frequency. We interpolated the annual ACS data to fill in the monthly observations of crime and Airbnb. This mismatch of frequencies may lead to misspecification and potentially bias the results. In Table 14 we address this issue by transforming our data set into annual observations. For each observation we take the annual average. As a result, the number of observations is reduced to just over 4000. The annualized results show the same patterns and basic findings as the monthly data. This indicates that the results are robust when the frequency of observations is changed; and the prior results were not biased by any misspecification.

To guard against the concerns of self selection bias, we conduct Coarsened Exact Matching (CEM) and Propensity Score (PS) matching to improve causal inference. Matching ob-

servations prunes observations so that the Airbnb and non-Airbnb observations have more similar empirical support. This reduces the degree to which the causal effects are model dependent, reduces inefficiency, and reduces bias (Ho et al. (2007); Iacus et al. (2011)). Our first approach, CEM, is described in Iacus et al. (2008). CEM forces the matched observations to be relatively close to each other in key observables, allows an unbalanced match (one to many), and weights the matches. 356 matched buckets are created using key determinants of the crime rate (income, age, family, vacancy, public transit) and our preferred instrumental variable (IVcount90). For each bucket, each observation with Airbnb is matched with one or more observations without Airbnb. Our second approach, PS, matches observations that have similar probabilities of have Airbnb. The first stage calculates the propensity using a probit specification including all of continuous exogenous explanatory variables, including IVcount90, and year*month fixed effects. Each observation with Airbnb is matched with its 5 closest neighbors. Table 15 shows the results for the matched samples. Again the instrument performs well for all the samples and the results are consistent. In summary, the results are robust to additional controls for selection bias using a variety of matching techniques.

7 Conclusion

This paper examines the impact of the shared economy on neighborhood safety. We find consistent evidence that Airbnb meaningfully reduces crime. In particular, a 10% increase in Airbnb decreases the local or neighborhood level crime rate by approximately 2.7%. This result is very stable and is robust across different specifications. But this effect is more concentrated in higher income and higher cost areas of the city. We also find some evidence that the local crime reduction is mitigated by an increase in crime in nearby neighborhoods.

There is substantial concern in the popular press, local governments and the academic lit-

erature that Airbnb guests have negative spillovers in a neighborhood. There are perceptions and anecdotal stories that Airbnb guests behave badly while celebrating and enjoying their vacations. In terms of crime, Airbnb guests could both commit crimes themselves or be more easy victims of crime. On the other hand, we find suggestive evidence that Airbnb can help to gentrify a neighborhood by boosting the local economy and increasing the provisions of local amenities (restaurants, shops, galleries, pharmacies, and grocery stores, etc...). In addition, there is some evidence in prior research that short term rentals are maintained better than multifamily property. All of these factors likely play a role in reducing the prevalence of crime as around Airbnb host location. Our results suggest that, on balance, the positive forces of gentrification outweigh negative impacts: Airbnb helps improve neighborhood stability and safety.

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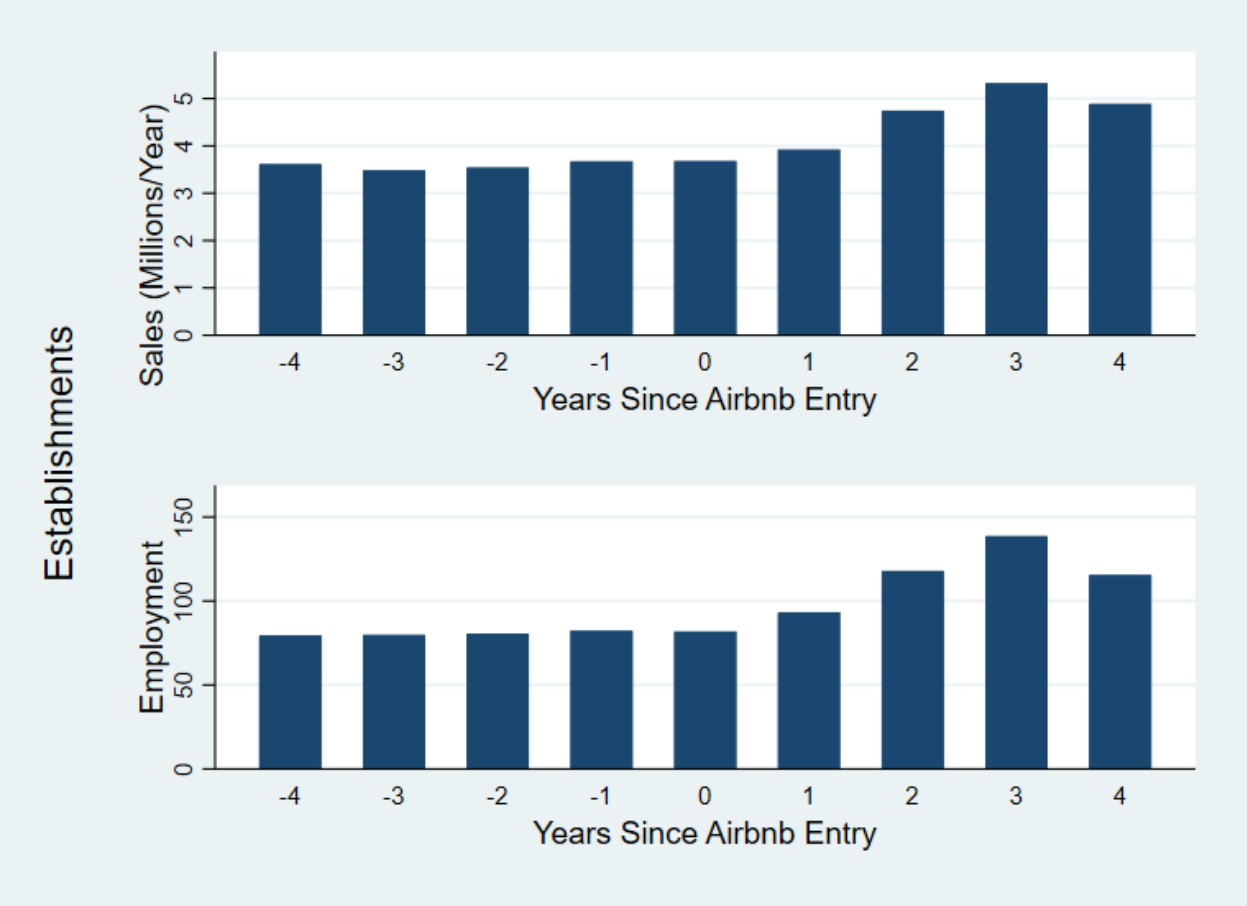
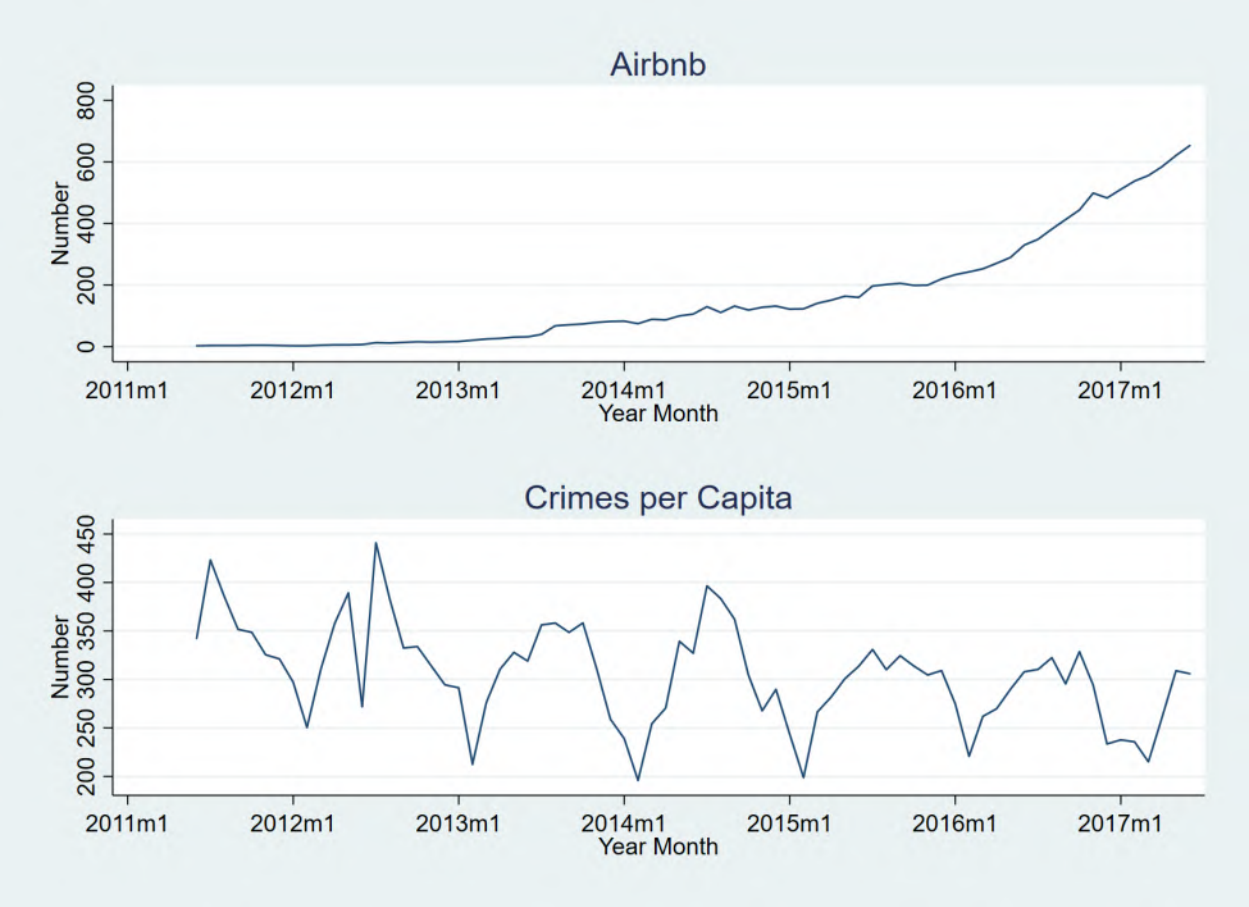
Figure 1: Establishments Sales and Employment

1.png



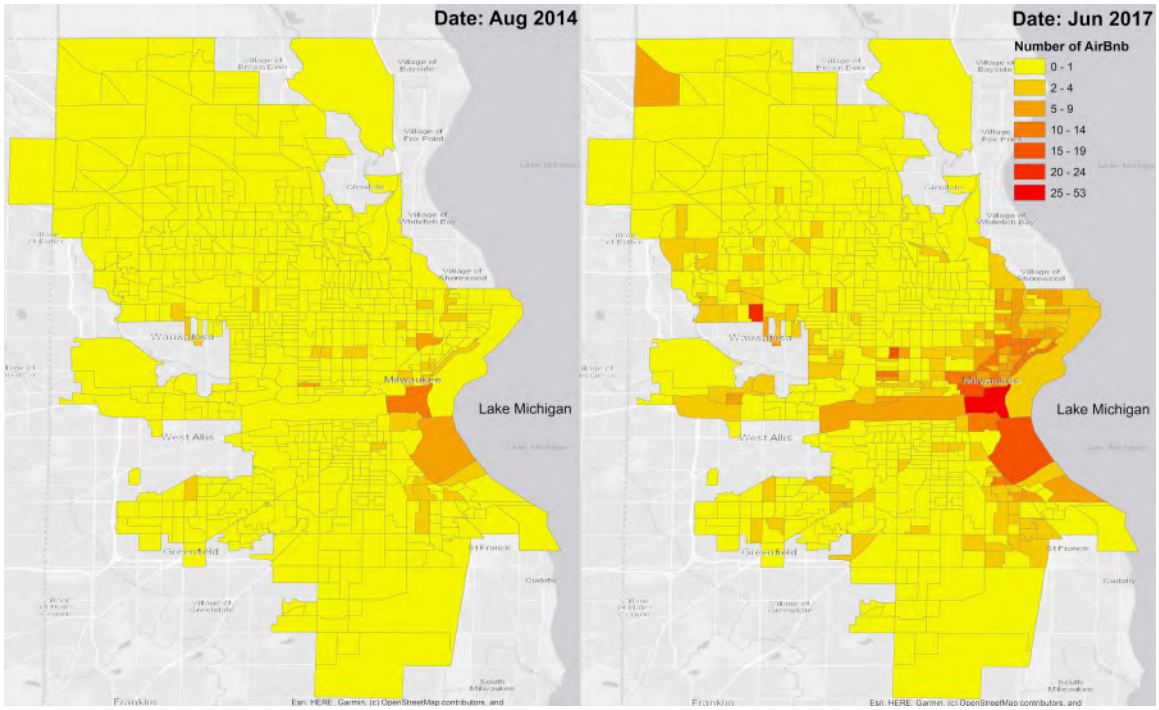
This graph shows average sales (in Millions per Year) and employment (Number of Employees) of amenity-producing establishments at the census block group level, pre and post Airbnb entry. Entry occurs in year 0 and is defined as the first time we observe an Airbnb in a location. These amenity-producing establishments include restaurants, bars, live music, movie theaters, aquariums, museums and other related establishments.

Figure 2: Number of Airbnb and Number of Crime



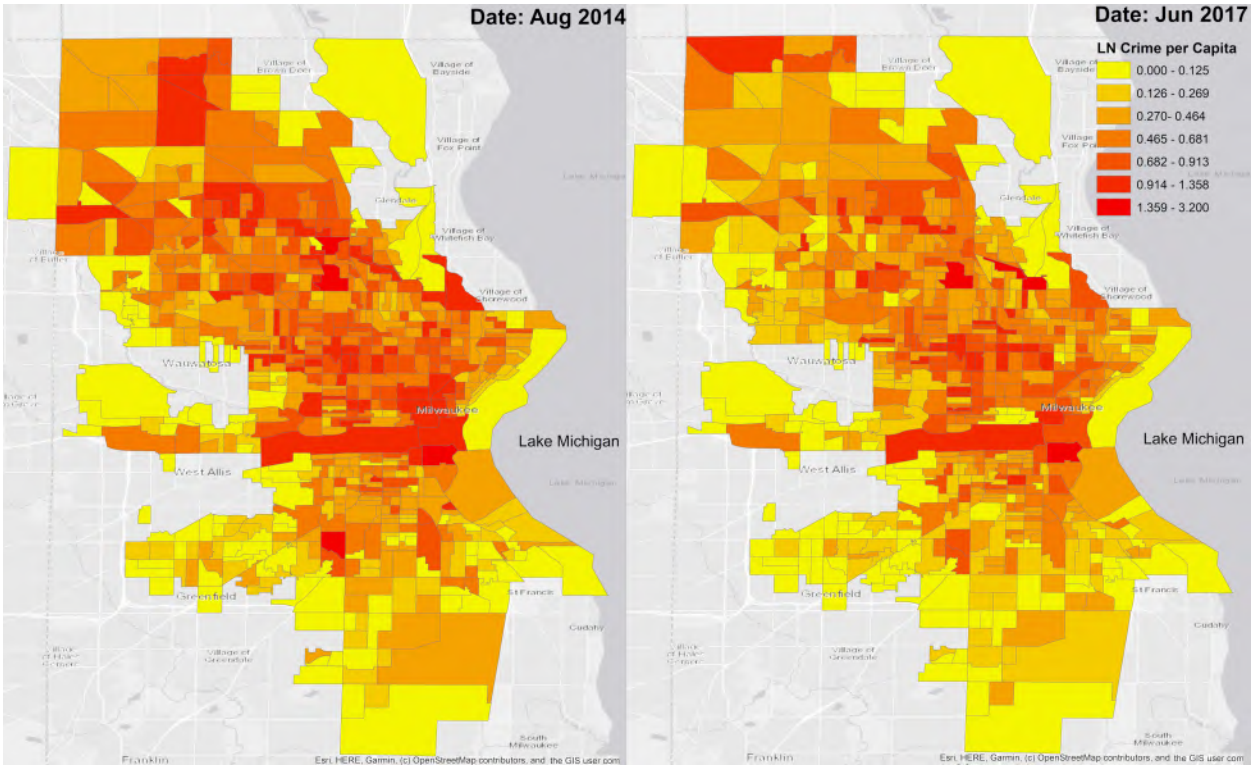
This graph shows the number of Airbnb properties available for rent in the city of Milwaukee in any given month from January 2011 until June 2017. The graph in the lower frame is the number of crimes in the city of Milwaukee per month. The crime data includes arson, assault offense, burglary, criminal damage, homicide, locked vehicle, sex offense, theft and vehicle theft.

Figure 3: Airbnb Count per Census Block Group



These graphs show the count of airbnb in each Census block group, for two time periods in the sample.The graph on the left shows the values for August 2014 and the graph on the right the values for June 2017

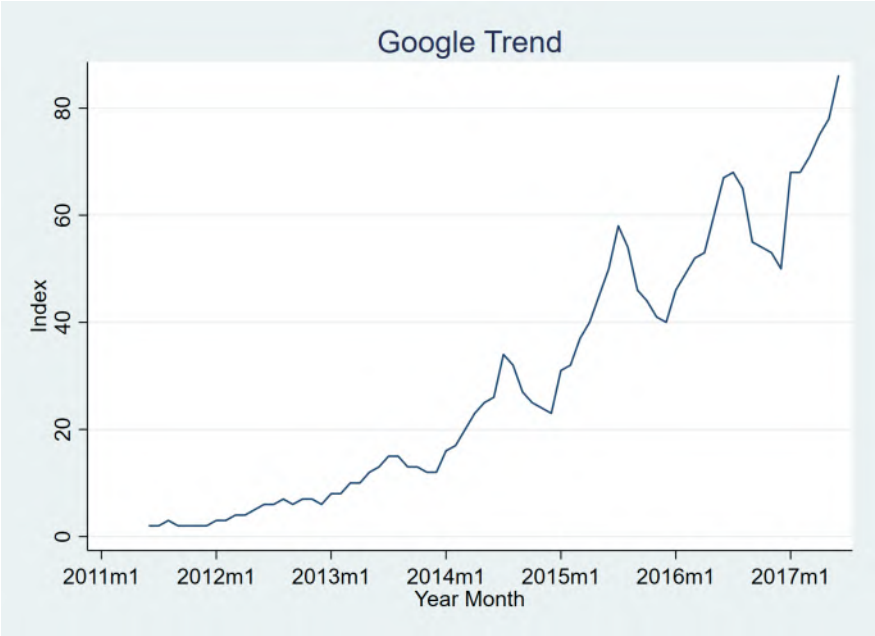
Figure 4: Crime per Census Block Group



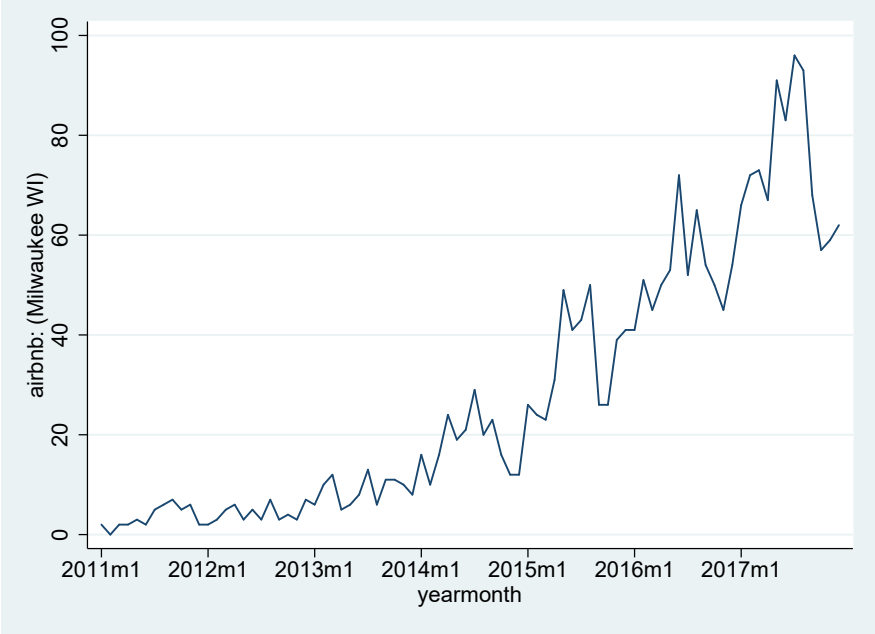
These graphs show the log value of the number of crimes per capita in each Census block group. The graph on the left shows the values for August 2014 and the graph on the right the values for June 2017

Figure 5: Airbnb Google Trends

(a) Worldwide Google Trends Search Index for Airbnb (Worldwide, 2011-2018)



(b) Milwaukee Google Trends Search Index for Airbnb (Milwaukee, 2011-2018)



This graph shows the Google trend index. This index captures the changes in the number of searches in Google for Airbnb.

Table 1: Variables Description

Name	Description	Geography	Source
ln(Crime)	Natural lograthim of the total number of crime related incidences per capita (1,000 people). Total crime includes arson, assault offense, burglary, criminal damage, homicide, locked vehicle, sex offense, theft and vehicle theft.	Block Grp.	MPD
ln(Airbnb)	Natural lograthim of then umber properties available for rent.	Block Grp.	AirDNA
Reservations	Number of the reservations.	Block Grp.	AirDNA
Maximum Guest	Maximun number of guest that are allowed to stay in the properties available for rent.	Block Grp.	AirDNA
ln(Income)	Natural logarithm of the median household income.	Block Grp.	ACS
Poverty	Percentage of the population under the poverty line in the past 12 months.	Block Grp.	ACS
Urate	Unemployment rate calculated by the count of unemployed divided by the population over age 16.	Block Grp.	ACS
Black	Population of black race over total population.	Block Grp.	ACS
College	Percentage of the population with some college and more. This includes people with less than 1 year of college, more than a year but no degree, associate, bachelor's, master's, professional and doctorate degree.	Block Grp.	ACS
Family	Median number of children in the household.	Block Grp.	ACS
ln(Age)	Natural lograthim of median age of the population	Block Grp.	ACS
Renter	Fraction of the housing units that are renter occupied	Block Grp.	ACS
Transit	Fraction of the population that uses public transit as means of transportation (Excluding Taxicab).	Block Grp.	ACS
Vacancy	housing units with a vacant status over all housing units. units.	Block Grp.	ACS
Income Ratio	Ratio of block group median household income to census tract median household income.	Block Grp.	ACS
Gini	Gini Coefficient for household income.	Tract	ACS
Google Trend	Represent worldwide search interest for Airbnb. A value of 100 is the peak popularity. A value of 50 means that the term "Airbnb" is half as popular. A score of 0 means there was not enough data for the term "Airbnb".	Worldwide	Google
Count 1990	The number of establishments in 1990 that increase the appeal of a location to tourists. This includes establishments involved in restaurants, bars, entertainment (for example, music and theater establishments), lodging, sports and athletics, gambling, zoos, aquariums, museums, and others	Block Grp.	DB
Zoning	Represents the percentage of square feet dedicated to residential use in 2005.	Block Grp.	ITMD

Note: MPD(Milwaukee Police Department) data link - https://data.milwaukee.gov/dataset/wibr; AirDNA (Airbnb dats provider) link - https://www.airdna.co/; Google (Google Trend) Trend - https://trends.google.com/trends/explore?date=all&q=airbnb; ACS (American Community Survey) link - https://factfinder.census.gov; DB(Dun and Bradstreet National Establishment Time Series) link - https://www.kauffman.org/entrepreneurship/research/data-resources/; ITMD (City of Milwaukee master poperty file) link - https://data.milwaukee.gov/dataset/mprop

Table 2: Summary Statistics

	Mean	Std. Dev.	Min	Max
Crime	6.21	5.32	0.00	233.46
Airbnb	0.31	1.09	0.00	33.22
Number of Reservations	0.61	3.26	0.00	118
Maximum Number of Guests	1.02	4.76	0.00	140
Daily Rate	70.89	65.47	9.45	2122.09
Income	40,267.08	17,640.97	6,702.00	204,000.00
Poverty	0.27	0.17	0.00	0.89
Urate	0.08	0.05	0.00	0.43
Black	0.38	0.35	0.00	1.00
College	0.29	0.09	0.00	0.79
Family	1.03	0.44	0.00	4.12
Age	248.54	131.94	14.9	741.00
Renter	0.53	0.22	0.00	1.00
Transit	0.09	0.09	0.000	0.77
Vacancy	0.11	0.10	0.00	0.81
Income Ratio	5.98	254.78	0.11	25,396.83
Gini	0.43	0.06	0.29	0.70
IV count90	25.63	37.414	0.00	336.43
Google Trend	29.25	23.67	2.00	86.00
Establishments 1990	2.76	5.68	0.00	52.00
Observations	39,079			

Note: This table provides the descriptive statistic for our sample. Crime is the number of crimes per 1,000 people; Airbnb is measured by the number of Airbnb listings; Number of Reservations is the number of reservations booked in a month; Maximum number of guests is sum of the maximum capacity of all the properties available for rent; Daily rate is the average daily rate of the properties available, only 2,801; Income is median income; Poverty is measured by the fraction of population below poverty line; Urate is the unemployment rate; Black is the fraction of black population; College is the fraction of people has college or graduate degree; Family is the fraction of family with children; Age is the median age of the population; Renter is the fraction of population that are renters; Transit is the fraction of population taking public transit; Vacancy is the property level vacancy rate, which is calculated as one minus owner occupancy rate; Income ratio is the median income ratio of tract to block group; Gini is the gini coefficient of income at the tract level; Google trend is the index of searches of Airbnb in google; Establishments 1990 is the number of tourist related establishments in 1990. For more detail please refer to Table 1.

Table 3: AirBnb Funding Rounds

Type	Date	Amount Raised	Post-money Valuation	Investors
Seed	Jan-09	$20.0 k	$2.5 m	Y Combinator
Seed	Apr-09	$615.0 k		Sequoia Capital, Y Ventures
Series A	Nov-10	$7.2 m	$70.0 m	Ashton Kutcher, Elad Gil, Greylock Partners, Jeremy Stoppelman, Keith Rabois, SV Angel, Sequoia Capital, Y Ventures
Series B-1	Jul-11	$114.9 m	$1.3 b	Andreessen Horowitz, Ashton Kutcher, CrunchFund, DST Global, General Catalyst, Jeff Bezos, Oliver Jung, Sequoia Capital
Series B-2	Jul-11	$2.1 m		A-Grade Investments, Andreessen Horowitz, CF, DST Global, General Catalyst, General Catalyst Partners, Jeff Bezos, Oliver Jung, Sequoia Capital
Series C	Oct-13	$200.0 m	$2.9 b	Airbnb, Ashton Kutcher, CF, Founders Fund, Sequoia Capital
Series D	Apr-14	$519.7 m	$10.5 b	Andreessen Horowitz, Dragoneer Investment Group, Sequoia Capital, Sherpa Capital, T. Rowe Price, TPG
Unattributed	Jun-14			137 Ventures
Series E-1	Jun-15	$1.6 b	$25.5 b	Baillie Gifford, China Broadband Capital, Fidelity Investments, GGV Capital, General Atlantic, Groupe Arnault, Hillhouse Capital Group, Horizons Ventures, Kleiner Perkins Caufield & Byers, Sequoia Capital, T. Rowe Price, Temasek Holdings, Tiger Global Management, Wellington Management
Series E-2	Nov-15	$100.0 m		FirstMark
Debt	Jul-16	$1.0 b		Brand Capital, Citigroup, JP Morgan Chase & Co, Morgan Stanley
Series F	Sep-16	$1.0 b	$31.0 b	Altimeter Capital, CapitalG, Eniac Ventures, Geodesic Capital, Glade Brook Capital Partners, TCV
Secondary	Oct-16			All Blue Capital

Source: https://craft.co/airbnb/funding-rounds

Table 4: IV Validation Test: Correlation Between Instruments and Crime

	(1) Total Establishments	(2) Venture Capital	(3) Food and Restaurant Establishment	(4) Zoning
IV	0.000	-0.048	-0.001	-0.019*
	(0.002)	(0.037)	(0.002)	(0.012)
Poverty	0.452	0.505	0.458	0.505
	(0.635)	(0.621)	(0.631)	(0.649)
Urate	1.664	1.679	1.660	1.857
	(1.195)	(1.197)	(1.194)	(1.187)
Black	0.121	0.081	0.124	0.121
	(0.957)	(0.959)	(0.957)	(0.936)
College	0.431	0.526	0.436	0.517
	(0.905)	(0.916)	(0.903)	(0.872)
Family	-0.374	-0.401*	-0.374	-0.372
	(0.244)	(0.237)	(0.243)	(0.249)
ln(Age)	0.336	0.327	0.339	0.364
	(0.406)	(0.404)	(0.405)	(0.405)
Renter	0.823	0.789	0.826	0.856
	(0.629)	(0.630)	(0.633)	(0.607)
Transit	-0.514	-0.466	-0.519	-0.477
	(1.088)	(1.081)	(1.094)	(1.083)
Vacancy	0.226	0.264	0.239	0.056
	(1.222)	(1.241)	(1.219)	(1.189)
Income Ratio	0.000**	0.000***	0.000**	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)
Gini	-0.070	-0.115	-0.070	-0.114
	(1.118)	(1.146)	(1.121)	(1.058)
Block groups FE	Y	Y	Y	Y
Year-month FE	Y	Y	Y	Y
Instrumental Variable	N	N	N	N
Observations	935	935	935	935

Note: Standard errors are clustered at the block group level. Each column is a regression for block groups that never had Airbnb listing. The dependent variable, which is the log of total crime per capita, is regressed on the instrumental variable and demographic control variables. In column (1), the instrument is our preferred instrumental variable, which is the interaction between google trends and the total number of establishments. In Column (2), the instrument is the interaction of venture capital funding rounds with the total number of establishments. In Column (3), the instrument is the interaction of google trend with the number of food and accommodation establishments. The instrument in the last column is the interaction of google trend with residential zoning.

Table 5: IV Validation Test: Placebo Test

	(1) IV	(2) Venture Capital	(3) Food and restaurant establishment	(4) Zoning
ln(Airbnb)	0.5870	0.9944	0.7253	0.9239
	(0.446)	(1.160)	(0.657)	(0.783)
ln(Income)	0.1204	0.1914	0.1445	0.1797
	(0.160)	(0.280)	(0.194)	(0.235)
Poverty	0.2788	0.291	0.2829	0.2916
	(0.371)	(0.549)	(0.428)	(0.517)
Urate	0.6367	1.2541	0.8462	1.1473
	(0.985)	(2.118)	(1.317)	(1.466)
Black	-0.0624	-0.1033	-0.0762	-0.095
	(0.374)	(0.551)	(0.430)	(0.509)
College	-0.103	-0.0685	-0.0913	-0.0762
	(0.349)	(0.539)	(0.407)	(0.491)
Family	-0.1498	-0.0686	-0.1222	-0.0835
	(0.125)	(0.264)	(0.163)	(0.207)
ln(Age)	0.6678*	0.9374	0.7593	0.8907
	(0.364)	(0.811)	(0.491)	(0.599)
Renter	0.2432	0.2086	0.2315	0.2181
	(0.330)	(0.471)	(0.372)	(0.439)
Transit	-0.3862	-0.3258	-0.3657	-0.3341
	(0.539)	(0.774)	(0.616)	(0.748)
Vacancy	0.6161	0.2597	0.4952	0.3192
	(0.548)	(1.125)	(0.704)	(0.891)
Income Ratio	0.0001***	0.0001*	0.0001***	0.0001**
	(0.000)	(0.000)	(0.000)	(0.000)
Gini	0.3746	0.5478	0.4334	0.5162
	(0.528)	(0.831)	(0.605)	(0.775)
Block groups FE	Y	Y	Y	Y
Year-month FE	Y	Y	Y	Y
Instrumental Variable	Y	Y	Y	Y
KP (F-stat)	2.688	0.798	1.497	1.459
Observations	6,147	6,147	6,147	6,139

Note: Standard errors are clustered at the block group level. ln(Airbnb) is measured by the log of the randomly generated number of Airbnb listings. In column (1), the instrument is our preferred instrumental variable, which is the interaction between google trend and the total number of establishments. In Column (2), the instrument is the interaction of venture capital funding rounds with the total number of establishments. In Column (3), the instrument is the interaction of google trend with the number of food and accommodation establishments. The instrument in the last column is the interaction of google trend with zoning. KP (F-stat) represents the Kleibergen-Paap F Statistic.

Table 6: The Effects of Airbnb on Crime: OLS Estimates

	(1: OLS)	(2: OLS)	(3: OLS)	(4: OLS)
ln(Airbnb)	-0.024***	0.001	0.006	0.003
	(0.008)	(0.015)	(0.015)	(0.014)
ln(Income)			-0.066**	-0.112***
			(0.030)	(0.035)
Urate			0.090	0.219
			(0.179)	(0.167)
College			-0.123	-0.100
			(0.105)	(0.100)
Black			0.054	0.013
			(0.054)	(0.053)
Poverty				0.031
				(0.092)
Family				-0.043
				(0.028)
ln(Age)				0.388***
				(0.058)
Renter				-0.146**
				(0.072)
Transit				0.198*
				(0.113)
Vacancy				0.566***
				(0.104)
Income Ratio				(0.000)
				0.000
Gini				-0.001
				(0.212)
Block groups FE	N	Y	Y	Y
Year-month FE	N	Y	Y	Y
Instrumental Variable	N	N	N	N
Observations	39,079	39,079	39,079	3,9079

Note: Standard errors are clustered at the block group level. The dependent variable is the log of one plus total crime per capita. ln(Airbnb) is measured by the log of one plus the number of Airbnb listings. ln(Income) is the log of median income; Urate is the unemployment rate; College is the fraction of people has college or graduate degree; Black is the fraction of black population; Poverty is measured by the fraction of population below poverty line; Family is the fraction of family with children; ln(Age) is the log of the median age of the population; Renter is the fraction of population that are renters; Transit is the fraction of population taking public transit; Vacancy is the vacancy rate; Income ratio is the median income ratio of tract to block group; Gini is the gini coefficient at the tract level.

Table 7: The Effects of Airbnb on Crime: Instrument Variable Estimates

	(1: IV)	(2: IV)	(3: IV)
ln(Airbnb)	-0.266***	-0.271***	-0.268***
	(0.097)	(0.102)	(0.099)
ln(Income)		-0.044	-0.080**
		(0.031)	(0.038)
Urate		0.145	0.273
		(0.184)	(0.172)
College		-0.208*	-0.172
		(0.117)	(0.112)
Black		0.000	-0.042
		(0.058)	(0.056)
Poverty			0.020
			(0.098)
Family			-0.076**
			(0.032)
ln(Age)			0.349***
			(0.066)
Renter			-0.103
			(0.076)
Transit			0.243**
			(0.116)
Vacancy			0.620***
			(0.107)
Income Ratio			(0.000)
			0.000
Gini			0.078
			(0.225)
Block groups FE	Y	Y	Y
Year-month FE	Y	Y	Y
Instrumental Variable	Y	Y	Y
Kleibergen-Paap F Statistic	21.288	20.37	19.511
Observations	39,079	39,079	39,079

Note: Standard errors are clustered at the block group level. The dependent variable is the log of one plus total crime per capita. ln(Airbnb) is measured by the log of one plus the number of Airbnb listings. ln(Income) is the log of median income; Urate is the unemployment rate; College is the fraction of people has college or graduate degree; Black is the fraction of black population; Poverty is measured by the fraction of population below poverty line; Family is the fraction of family with children; ln(Age) is the log of the median age of the population; Renter is the fraction of population that are renters; Transit is the fraction of population taking public transit; Vacancy is the vacancy rate; Income ratio is the median income ratio of tract to block group; Gini is the gini coefficient at the tract level. KP (F-stat) represents the Kleibergen-Paap F Statistic.

Table 8: Alternative Instrument Variables

	(1) Venture Capital	(2) Food and Accommodation	(3) Zoning
ln(Airbnb)	-0.219***	-0.283**	-0.251**
	(0.083)	(0.110)	(0.113)
ln(Income)	-0.086**	-0.079**	-0.083**
	(0.037)	(0.039)	(0.039)
Urate	0.263	0.276	0.267
	(0.170)	(0.173)	(0.173)
College	-0.159	-0.176	-0.172
	(0.108)	(0.113)	(0.109)
Black	-0.032	-0.045	-0.041
	(0.055)	(0.057)	(0.058)
Poverty	0.022	0.020	0.024
	(0.096)	(0.099)	(0.097)
Family	-0.070**	-0.078**	-0.073**
	(0.030)	(0.032)	(0.032)
ln(Age)	0.356***	0.347***	0.352***
	(0.064)	(0.066)	(0.066)
Renter	-0.111	-0.101	-0.108
	(0.075)	(0.077)	(0.075)
Transit	0.235**	0.246**	0.234**
	(0.115)	(0.117)	(0.117)
Vacancy	0.611***	0.623***	0.618***
	(0.105)	(0.107)	(0.108)
Income Ratio	0.000	0.000	0.000
	0.000	0.000	0.000
Gini	0.064	0.083	0.071
	(0.220)	(0.227)	(0.226)
Block groups FE	Y	Y	Y
Year-month FE	Y	Y	Y
Instrumental Variable	Y	Y	Y
Kleibergen-Paap F Statistic	19.65	16.031	13.929
Observations	39,079	39,079	38,967

Note: Standard errors are clustered at the block group level. The dependent variable is the log of one plus total crime per capita. ln(Airbnb) is measured by the log of one plus the number of Airbnb listings. All other explanatory variables are the same as in the prior table. The instrumental variable for Column (1) is the interaction of venture capital funding data with total number of establishments in year 1990.The instrumental variable in Column (2) is the interaction of google trend index with the number of food and accommodation establishment. Instrumental variable in Column (3) is the interaction of google trend index with fraction of properties zoned as residential in 2005.

Table 9: The Effect of Airbnb by Neighborhood Type

	(1) Low Income	(2) Middle Income	(3) High Income	(4) Low Rent	(5) Middle Rent	(6) High Rent
ln(Airbnb)	-0.268	-0.084	-0.336***	-0.441	-0.441	-0.177**
	(0.439)	(0.107)	(0.119)	(0.354)	(0.354)	(0.076)
ln(Income)	-0.178***	-0.126	0.114	-0.160	-0.160	-0.014
	(0.061)	(0.088)	(0.075)	(0.122)	(0.122)	(0.062)
Urate	0.248	0.185	-0.369	0.265	0.265	-0.17
	(0.227)	(0.294)	(0.448)	(0.317)	(0.317)	(0.283)
College	0.061	-0.069	-0.213	-0.073	-0.073	-0.182
	(0.162)	(0.197)	(0.207)	(0.186)	(0.186)	(0.169)
Black	-0.098	0.14	0.042	0.062	0.062	-0.056
	(0.104)	(0.096)	(0.104)	(0.118)	(0.118)	(0.088)
Poverty	-0.142	0.223	0.095	-0.178	-0.178	0.052
	(0.165)	(0.166)	(0.239)	(0.211)	(0.211)	(0.167)
Family	-0.042	-0.128***	-0.100	-0.126**	-0.126**	-0.021
	(0.047)	(0.049)	(0.072)	(0.063)	(0.063)	(0.054)
ln(Age)	0.269***	0.332***	0.458***	0.095	0.095	0.436***
	(0.103)	(0.087)	(0.149)	(0.114)	(0.114)	(0.113)
Renter	-0.279*	-0.133	0.007	-0.126	-0.126	-0.036
	(0.143)	(0.123)	(0.148)	(0.155)	(0.155)	(0.120)
Transit	0.385**	0.234	0.282	-0.047	-0.047	0.170
	(0.158)	(0.197)	(0.319)	(0.197)	(0.197)	(0.206)
Vacancy	0.720***	0.767***	0.447**	0.592**	0.592**	0.397**
	(0.149)	(0.193)	(0.212)	(0.232)	(0.232)	(0.156)
Income Ratio	-0.000***	-0.000***	0.000***	0.059	0.059	-0.000***
	0.000	0.000	0.000	(0.094)	(0.094)	0.000
Gini	0.052	0.616*	-0.301	-0.087	-0.087	-0.508
	(0.389)	(0.319)	(0.489)	(0.404)	(0.404)	(0.352)
Block groups FE	Y	Y	Y	Y	Y	Y
Year-month FE	Y	Y	Y	Y	Y	Y
Instrumental Var.	Y	Y	Y	Y	Y	Y
KP (F-stat)	1.909	14.478	12.897	2.573	2.573	15.112
Observations	14,084	13,148	11,845	12,464	12,464	13,503

Note: Standard errors are clustered at the block group level. The dependent variable is the log of one plus total crime per capita. Each column is a different regression. Low is the bottom one-third of the distribution. Middle is the middle third, of the distribution. High is the top one-third of the distribution. KP (F-stat) represents the Kleibergen-Paap F Statistic.

Table 10: Spillover Effects of Airbnb

	(1: IV)	(2: IV)	(3: IV)
ln(Airbnb)	-0.333***	-0.339***	-0.336***
	(0.11)	(0.11)	(0.11)
ln (Airbnb tract)	0.132***	0.137***	0.132***
	(0.03)	(0.03)	(0.03)
ln(Income)		-0.049	-0.090**
		(0.03)	(0.04)
Urate		0.096	0.219
		(0.19)	(0.17)
College		-0.211*	-0.179
		(0.12)	(0.11)
Black		0.034	-0.010
		(0.06)	(0.05)
Poverty			0.030
			(0.10)
Family			-0.075**
			(0.03)
ln(Age)			0.346***
			(0.07)
Renter			-0.133*
			(0.07)
Transit			0.261**
			(0.12)
Vacancy			0.602***
			(0.11)
Income Ratio			0.000
			0.00
Gini			0.077
			(0.23)
Block groups FE	Y	Y	Y
Year-month FE	Y	Y	Y
Instrumental Variable	Y	Y	Y
Kleibergen-Paap F Statistic	10.117	10.02	9.655
Observations	39,079	39,079	39,079

Note: Standard errors are clustered at the block group level. The dependent variable is the log of one plus total crime per capita. Independent variable of ln(Airbnb tract) is the log of one plus the number of Airbnb in the neighboring blocks within the same census tract. The instrumental variable used for Airbnb tract is the interaction of google trend with the number of establishments in 1990 for the neighboring block groups within the same census tract. KP (F-stat) represents the Kleibergen-Paap F Statistic.

Table 11: Alternative Airbnb Measures

	(1) Reservations	(2) Max Guest	(3) Daily Rate
ln(Airbnb)	-0.188***	-0.182***	-0.439
	(0.067)	(0.069)	(1.309)
ln(Income)	-0.089**	-0.080**	-0.199
	(0.037)	(0.039)	(0.876)
Urate	0.268	0.266	0.864
	(0.169)	(0.178)	(5.545)
College	-0.17	-0.178	-1.051
	(0.110)	(0.115)	(2.690)
Black	-0.032	-0.056	-0.709
	(0.055)	(0.059)	(1.582)
Poverty	0.026	0.010	-0.487
	(0.097)	(0.101)	(2.708)
Family	-0.068**	-0.076**	-0.225
	(0.030)	(0.032)	(0.226)
ln(Age)	0.368***	0.352***	0.159
	(0.062)	(0.067)	(0.856)
Renter	-0.103	-0.091	-0.021
	(0.075)	(0.078)	(1.461)
Transit	0.248**	0.255**	-1.151
	(0.116)	(0.119)	(2.313)
Vacancy	0.609***	0.622***	1.412
	(0.105)	(0.109)	(1.042)
Income Ratio	0.000	0.000	0.000
	0.000	0.000	0.000
Gini	-0.024	0.067	-0.342
	(0.224)	(0.232)	(4.280)
Block groups FE	Y	Y	Y
Year-month FE	Y	Y	Y
Instrumental Variable	Y	Y	Y
KP (F-stat)	22.095	17.647	0.152
Observations	39,079	39,079	3,830

Note: Standard errors are clustered at the block group level. The dependent variable is the log of one plus total crime per capita. The alternative measures for Airbnb include the log of one plus the number of reservations, log of one plus the number of maximum guests, and the log of one plus the daily rate per room. KP (F-stat) represents the Kleibergen-Paap F Statistic.

Table 12: The Effect of Airbnb by Type of Crime

	(1) Violent Crime	(2) Property Crime	(3) Homicide
ln(Airbnb)	-0.156**	-0.174*	0.004
	(0.070)	(0.092)	(0.027)
ln(Income)	-0.075***	-0.055	-0.008
	(0.029)	(0.036)	(0.008)
Urate	0.074	0.341**	0.043
	(0.147)	(0.169)	(0.036)
College	-0.131	-0.122	-0.012
	(0.092)	(0.105)	(0.021)
Black	0.029	-0.070	0.000
	(0.041)	(0.055)	(0.011)
Poverty	-0.059	0.063	-0.003
	(0.078)	(0.096)	(0.020)
Family	-0.037*	-0.063**	-0.003
	(0.022)	(0.031)	(0.006)
ln(Age)	0.167***	0.359***	0.000
	(0.050)	(0.065)	(0.011)
Renter	-0.041	-0.112	-0.015
	(0.057)	(0.072)	(0.014)
Transit	0.247***	0.153	0.004
	(0.089)	(0.124)	(0.020)
Vacancy	0.364***	0.572***	0.038
	(0.081)	(0.103)	(0.024)
Income Ratio	0.000	0.000	0.000
	0.000	0.000	0.000
Gini	0.170	-0.017	0.078
	(0.166)	(0.219)	(0.052)
Block groups FE	Y	Y	Y
Year-month FE	Y	Y	Y
Instrumental Variable	Y	Y	Y
KP (F-stat)	19.511	19.511	18.67
Observations	39,079	39,079	44,874

Note: Standard errors are clustered at the block group level. The dependent variable is the log of one plus total crime per capita. The Homicide regression is run as a linear probability regression, where the dependent variable is 1 if there was a homicide in the month and 0 otherwise. KP (F-stat) represents the Kleibergen-Paap F Statistic.

Table 13: The Seasonal Effect of Airbnb on Crime

	(1) Jan-Mar	(2) Apr-Jun	(3) Jul-Sep	(4) Oct-Dec	(5) Festivals
ln(Airbnb)	-0.341***	-0.228**	-0.291**	-0.202	-0.291**
	(0.129)	(0.102)	(0.122)	(0.123)	(0.122)
ln(Income)	-0.052	-0.046	-0.098**	-0.135***	-0.098**
	(0.055)	(0.042)	(0.046)	(0.051)	(0.046)
Urate	0.322	0.314	0.205	0.317	0.205
	(0.271)	(0.193)	(0.205)	(0.248)	(0.205)
College	-0.243	-0.072	-0.097	-0.339**	-0.097
	(0.157)	(0.118)	(0.125)	(0.144)	(0.125)
Black	-0.131	0.000	-0.051	-0.015	-0.051
	(0.086)	(0.058)	(0.063)	(0.082)	(0.063)
Poverty	0.017	0.142	0.002	-0.114	0.002
	(0.142)	(0.110)	(0.114)	(0.144)	(0.114)
Family	-0.088*	-0.035	-0.063*	-0.134***	-0.063*
	(0.046)	(0.036)	(0.036)	(0.040)	(0.036)
ln(Age)	0.242***	0.439***	0.431***	0.304***	0.431***
	(0.067)	(0.082)	(0.100)	(0.067)	(0.100)
Renter	0.019	-0.057	-0.188**	-0.154	-0.188**
	(0.104)	(0.086)	(0.085)	(0.099)	(0.085)
Transit	0.349**	0.210*	0.151	0.304*	0.151
	(0.162)	(0.125)	(0.125)	(0.162)	(0.125)
Vacancy	0.481***	0.656***	0.731***	0.530***	0.731***
	(0.156)	(0.114)	(0.122)	(0.140)	(0.122)
Income Ratio	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Gini	0.185	0.312	-0.158	-0.129	-0.158
	(0.297)	(0.241)	(0.276)	(0.306)	(0.276)
Block groups FE	Y	Y	Y	Y	Y
Year-month FE	Y	Y	Y	Y	Y
Instrumental Var.	Y	Y	Y	Y	Y
KP (F-stat)	17.817	20.086	16.339	17.429	16.339
Observations	9,395	10,239	9,765	9,680	9,765

Note: Standard errors are clustered at the block group level. The dependent variable is the log of one plus total crime per capita. The Festival season is July, August and September. KP (F-stat) represents the Kleibergen-Paap F Statistic.

Table 14: The Effect of Airbnb: Annual Data

	(1: OLS)	(2: OLS)	(3: OLS)	(4: OLS)	(5: IV)	(6: IV)	(7: IV)
ln(Airbnb)	-0.051**	-0.001	0.001	-0.003	-0.365***	-0.390***	-0.392***
	(0.025)	(0.022)	(0.023)	(0.021)	(0.125)	(0.133)	(0.131)
ln(Income)			-0.071*	-0.107**		-0.030	-0.050
			(0.041)	(0.047)		(0.042)	(0.049)
Urate			0.072	0.177		0.158	0.259
			(0.234)	(0.220)		(0.233)	(0.220)
College			-0.21	-0.176		-0.341**	-0.287**
			(0.137)	(0.130)		(0.149)	(0.142)
Black			0.005	-0.026		-0.095	-0.134*
			(0.077)	(0.074)		(0.080)	(0.078)
Poverty				0.081			0.074
				(0.122)			(0.124)
Family				-0.046			-0.102**
				(0.035)			(0.040)
ln(Age)				0.556***			0.486***
				(0.080)			(0.089)
Renter				-0.178*			-0.101
				(0.095)			(0.096)
Transit				0.17			0.245*
				(0.136)			(0.136)
Vacancy				0.758***			0.858***
				(0.135)			(0.134)
Income Ratio				0.000			0.000
				0.000			0.000
Gini				0.03			0.137
				(0.278)			(0.281)
Block groups FE	N	Y	Y	Y	Y	Y	Y
Year FE	N	Y	Y	Y	Y	Y	Y
Instrumental Variable		N	N	N	Y	Y	Y
Kleibergen-Paap F Statistic					19.341	18.581	17.615
Observations	4,024	4,024	4,024	4,024	4,024	4,024	4,024

Note: Each variable is the annual average and matches the frequency of the ACS data with the crime and Airbnb data.

Table 15: The Effect of Airbnb: Matched Sample

	(1) CEM	(2) PS: 1 to 5
Airbnb	-0.213*	-0.223*
	(0.119)	(0.133)
Income	-0.089	0.019
	(0.084)	(0.107)
Urate	0.282	0.407
	(0.333)	(0.448)
College	-0.064	-0.461
	(0.188)	(0.342)
Black	0.083	-0.008
	(0.137)	(0.213)
Poverty	0.002	0.143
	(0.201)	(0.239)
Family	-0.121*	-0.244***
	(0.064)	(0.076)
Age	0.277**	0.142
	(0.119)	(0.161)
Renter	-0.270	0.123
	(0.171)	(0.203)
Transit	0.394*	-0.151
	(0.232)	(0.303)
Vacancy	0.482	0.981***
	(0.344)	(0.256)
Income Ratio	-0.000***	0.000
	0.000	0.000
Gini	0.105	0.444
	(0.417)	(0.432)
Block groups FE	Y	Y
Year-month FE	Y	Y
Instrumental Variable	Y	Y
Kleibergen-Paap F Statistic	7.671	13.135
Observations	17,195	11,781

Note: The results in the first column use the coarsened exact matching method. The results in the second column us the propensity scoring matching method (1 to 5 nearest neighbors). Standard errors are clustered at the block group level.

SUPPORT LINCOLN COUNTY JOBS. SAVE LINCOLN COUNTY'S ECONOMY!

A vocal minority in Lincoln County is rushing to pass a ballot measure to ban Short-Term Rentals.

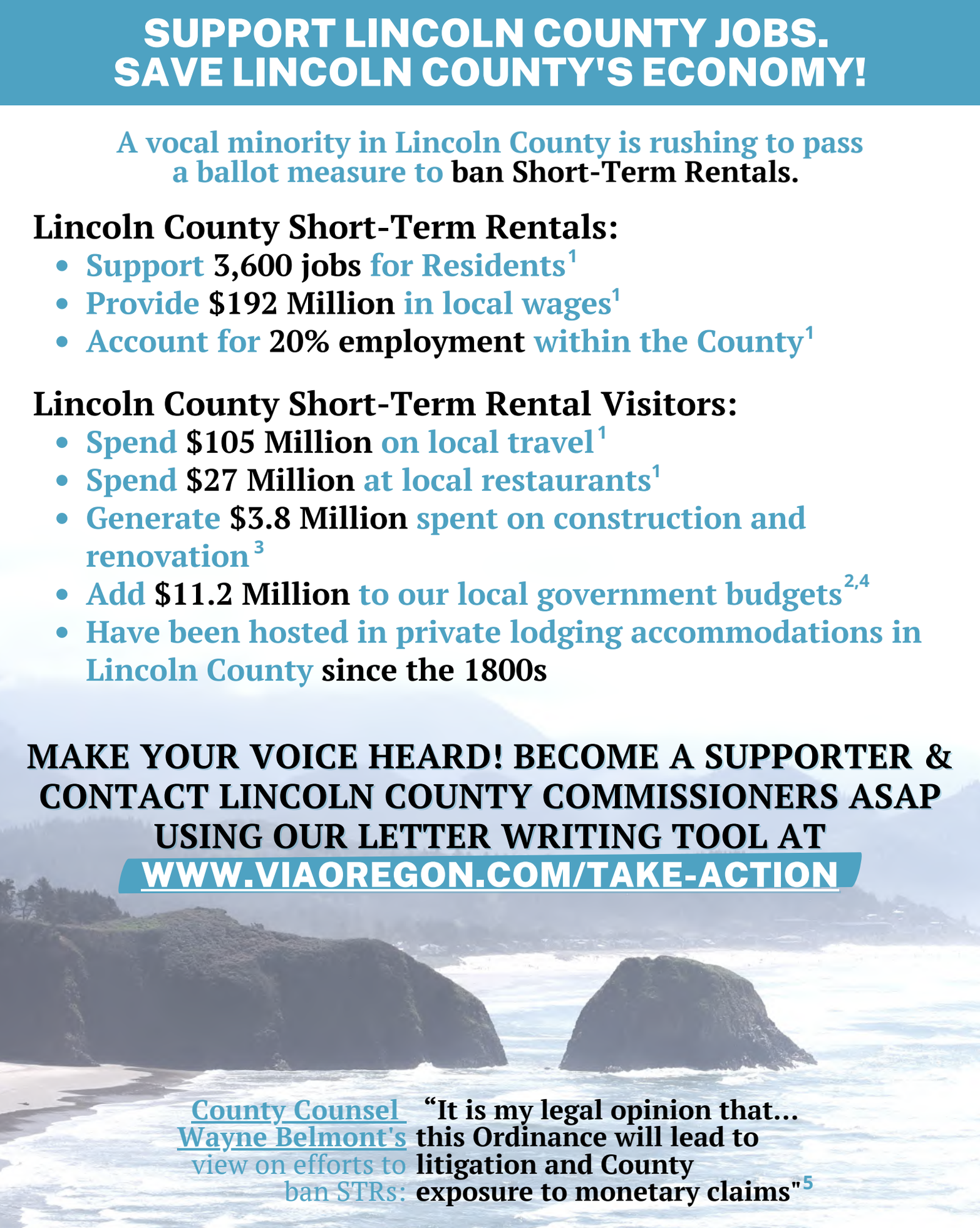
Lincoln County Short-Term Rentals:

- Support 3,600 jobs for Residents[1]
- Provide $192 Million in local wages[1]
- Account for 20% employment within the County[1]

Lincoln County Short-Term Rental Visitors:

- Spend $105 Million on local travel[1]
- Spend $27 Million at local restaurants[1]
- Generate $3.8 Million spent on construction and renovation[3]
- Add $11.2 Million to our local government budgets[2,4]
- Have been hosted in private lodging accommodations in Lincoln County since the 1800s

MAKE YOUR VOICE HEARD! BECOME A SUPPORTER & CONTACT LINCOLN COUNTY COMMISSIONERS ASAP USING OUR LETTER WRITING TOOL AT WWW.VIAOREGON.COM/TAKE-ACTION



County Counsel Wayne Belmont's view on efforts to ban STRs:

"It is my legal opinion that... this Ordinance will lead to litigation and County exposure to monetary claims"[5]

1: Travel Impacts Analysis provided by Dean Runyan Associates for Newport Oregon, with Travel Impacts Extrapolated to Lincoln County
2: Data for rentals per municipality, ADR, and occupancy averages provided by AirDNA
3: Aggregate value of all Construction Permits issued by Lincoln County in 2019
4: Lodging Tax Municipal Code for the cities of Yachats, Newport, Waldport, Seal Rock, Lincoln City, Depoe Bay, Gleneden Beach, Otis, Otter Rock, South Beach, and Toledo
5: November 16, 2020 Memorandum to Lincoln County Board of Commissioners regarding 15 Neighborhoods' proposed ballot initiative

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Assessing and Responding to Short-Term Rentals in Oregon

ENABLING THE BENEFITS OF THE SHARING ECONOMY

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Table of Contents

Abstract

Assessing and Responding to Short-Term Rentals in Oregon:
Enabling the Benefits of the Sharing Economy

Local, regional, and state governments across the country struggle to manage the impacts of short-term rentals (STRs), and the sharing economy more generally. Often referred to as vacation rentals, STRs are not new to the housing market yet, in the last decade, technology has greatly influenced their prevalence. Private, web-based businesses such as Airbnb, VRBO, HomeToGo, LUXbnb, CouchSurfing, HomeAway, FlipKey, and VaCasa, have given people access to a user-friendly, global marketplace for home sharing.

As the sharing economy proliferates, STRs have often flown under the radar of government taxation and regulation. Accordingly, many perceived negative impacts of STRs exist including the loss of tax revenue and impacts on traditional lodging businesses, neighborhoods, housing affordability, and housing availability. Still, the widespread use of these platforms show evidence of many localized benefits. Some of these benefits include allowing property owners to earn income by renting out their unused space, offering tourists an experience that is more unique, and among others, driving visitors to places not conventionally accessible for tourists (spurring economic activity in new areas and communities).

Because this economic activity, as it used today, is a relatively new phenomenon, existing research is sparse and tends to focus on large/mega cities. Thus, this research fills an important gap by focusing on small, tourism-oriented towns in Oregon. We address the following research questions in this paper: 1) What is the prevalence and characteristics of short-term rentals in Oregon? 2) What is the revenue potential of short-term rentals in Oregon? 3) What are the existing perceptions around short-term rentals in Oregon? 4) How are short-term rentals currently being regulated in Oregon? 5) To what extent do short-term rentals compete with long-term rentals?

To examine the prevalence of short-term rentals, we rely on city-level data from AirBnB and property-specific data from AirDnA, for cities under 100,000 in population. We also use American Community Survey data to examine the share of total housing units and vacant units with short-term rentals. To understand the positive and negative impacts and the regulatory environment, we rely on a survey administered to city managers and city planners.

This work provides timely and valuable information to small and mid-sized cities regarding a recent trend affecting housing. Planners and city staff need to understand how short-term rentals are affecting their communities and respond with appropriate regulatory controls.

Acknowledgments

A sincere thank you to Rebecca Lewis, PhD and Robert Parker, AICP for providing guidance and direction on this project as committee chairs. In addition, thank you to Beth Goodman for your generous consultation.

Moreover, I would like to thank the University of Oregon's Department of Planning, Public Policy and Management for providing financial support.

Thank you to the many individuals who provided input with survey responses and thank you to AirBnB who has supported this research by proving valuable data.

Questions of More Information?

Oregon communities interested in short-term rental data for their community, county, or region (or who have questions about this report) can contact Sadie DiNatale at Sadie.dinatale@gmail.com.

Executive Summary

This summary briefly outlines the purpose of this project, delineates key findings, and concludes with ways to respond to the impacts of short-term rentals (STRs) in smaller cities.

Introduction

Short-term rentals (STRs) are often defined as housing units that are rented or leased for less than 30 days, although they not officially defined by state or federal authorities. Part of the sharing economy, STRs are representative of a phenomenon in which people are increasingly choosing to share access to goods and services via a lateral or hierarchical exchange (which often includes a monetary exchange as well). This trend has been understood to offer both benefits and costs to communities across the country.

Accordingly, this project uses Airbnb property data for the state of Oregon to understand how this sharing economy activity influences cities with populations fewer than 100,000. Case studies are used to delve deeper into this analysis. A survey sent to Oregon city managers and planning directors complements this research by gauging the existing policy frameworks for STRs in Oregon. This survey provides insight into how cities view STRs and assists in the development of regulatory best practices for responding to STR impacts.

Key Findings

What is the prevalence and characteristics of short-term rentals in Oregon cities with <100,000 people?

- Airbnbs account for more than 5% of total housing in only 16 cities, indicating that short-term rentals are not prevalent in most jurisdictions. Still, we must qualify this statement with the fact that not all short-term rentals are equivalent to one dwelling unit.
- Airbnbs are most prevalent in Central Oregon and the North Coast.
- From 2014 to 2016, the number of new STRs created increased by roughly 180%.
- Short-term rentals tend to be in lower income neighborhoods more commonly.
- Most Airbnb hosts operate a single STR. Of approximately 4,400 hosts, 22% operate more than one STR.
- Approximately 70% of Airbnb hosts rent out their entire home/apartment (either primary or second home) and another 30% of STRs are listed or rented out as a private room (the remaining 1% is listed as a shared room).
- Most STRs are traditional property types. Approximately 60% of all listed properties are houses and another 13% are apartments.

What is the revenue potential of short-term rentals in Oregon cities with <100,000 people?

- Short-term rentals generate substantial revenue in Oregon. Hosts have earned an aggregated $82 million in the last year.
- Nine of the 15 cities with the highest grossing revenue are in the North Coast.
- Eight of the 15 cities with the highest revenue per capita are also located in the North Coast.

- Approximately 70% of Airbnb hosts generate less than $10,000/year in gross revenue for operating their short-term rental(s).
- Transient lodging taxes (TLT) imposed on Airbnbs by the state generate substantial fiscal revenue. The state, imposing a 1.8% TLT on an estimated $82 million, earned approximately $1.5 million from Airbnb STRs in the last year.

To what extent do short-term rentals constrain the supply of housing in Oregon cities with <100,000 people?

- Half of all STRs are reserved for less than 30 days (36% are reserved for 10 or fewer days).
- In more urbanized regions such as Portland Metro and Willamette Valley, STRs are operated as private rooms slightly more than as entire homes.
- Perhaps a more accurate determination of housing supply constraints is the ratio of STRs (entire homes, rented for more than 30 days per year) to total housing units. Using this ratio to measure supply constraints, STRs account for approximately 2% of total housing in the North Coast and approximately 1.8% in Central Oregon.
- For most case study cities, data suggests that STRs are constraining the supply of long-term housing.
    - In case study cities, new STR growth is increasing at a faster rate than newly constructed total housing units.
    - Property owners in resort communities (case studies) can generate more annual revenue off STRs than they can off standard long-term rental units.

What are the existing perceptions around short-term rentals in Oregon?

- In general, survey respondents indicated that while residents shared mixed perceptions about STRs, local elected officials and businesses within the accommodation sector viewed STRs as less problematic.
- STRs provide great benefits including their ability to provide transient lodging tax revenue, to support tourism activities, and to support communities that rely on tourism.
- STRs economically weaken communities by impacting resources such as the availability of housing (especially affordable and rental housing) and police and city staff time who deal with complaints from neighbors/business owners.
- Respondents who agreed or strongly agreed with that statement that STRs evaded policies and regulations in their communities (26%), surprisingly did not all agree that their policies were ineffective.
- Communities who do not see the need to regulate STRs indicated that STRs are either not a problem in their community (e.g. there are no STRs or not enough STRs to regulate) or that STRs fit in with the character of their community and therefore regulation was not necessary.
- Most communities who will potentially develop ordinances to regulate STRs in the next five years will do so primarily to formalize the process and rules associated with it, legitimize existing situations, develop clear and objective standards, and promote fairness.

How are short-term rentals currently being regulated in Oregon?

- STRs are commonly referred to as short-term rentals, transient rentals, or vacation rentals.
- STRs are most commonly defined as units rented for less than 30 days.

- Most regulations for STR require that operators have a license and/or permit (92%) and 81% of respondents also indicated that their community imposes a transient lodging tax (or similar tax) on STRs.
- Respondents also commonly regulate STRs by relying on concentration caps or occupancy requirements.
- Most respondents (60%) find their regulations for STRs, or lack thereof, to be neither effective nor ineffective in managing the economic benefits or negative impacts of short-term rentals.
- STR ordinances were most commonly enforced by issuances of administrative citations (62%) and fines (58%).

Conclusion

We know that the solution to STRs will be different for every city. What is true for Oregon is true for communities across the United States: STRs affect cities dissimilarly and in turn, view STRs diversely. Accordingly, many communities have taken the experimental and incremental approach, not knowing if their policy will truly mitigate the impacts and/or enable the benefits hoped for but needing to trial something.

In the response to short-term rentals, communities should **construct regulations in conjunction with both a local, community conversation and a regional conversation.** This inclusivity aspect is key to construct equitable regulations less likely to be evaded and more likely to mitigate the negative externalities created by STRs and these policies themselves.

Additional best practices are as follows. More information on these practices can be found in Chapter 3.

- Define Short-Term Rentals and Codify Regulations in City Ordinances
- Distinguish Between Short-Term Rentals
- Restrict Use or Incentivize Moderate Use (rather than banning STRs)
- Normalize STRs as a Residential Activity (with Caveats)
- Permit STRs in Premium Areas with Monitoring
- Develop Appropriate Regulatory Standards
- Require STRs to Get a Permit or License
- Require STR Operators to Pay Fees and Taxes

Regarding enforcement, it is difficult for governments to regulate something they do not have complete control over. Initiating community conversations to educate and encourage appropriate use of STRs can, however, induce a culture of self-regulation and compliance.

Recommendations

The following sections break recommendations into minimum requirements and ancillary requirements for cities. Next, I provide recommendations for counties/regions and the State.

Minimum Regulatory Recommendations for All Cities

Whether a city has STRs or not, communities should establish the following regulations, even as a precautionary measure:

1. Legally define STRs as "short-term rentals" and establish a fair frequency of use standard that is complimentary of regional standards.
2. Codify regulations in local ordinance. Impose a guest capacity limit and require inspections.
3. Levy a transient lodging tax (if not imposed at the county level).
4. Require that STR operators register their unit(s) on an annual basis.

Ancillary Regulatory Recommendation with Thresholds for Cities

Variations in number and concentration of STRs should influence policy choices. The following recommendations provide thresholds for ancillary regulations as a starting point. In that, thresholds may vary between communities.

1. Restrict (cap/limit) STRs or incentivize moderate use if STRs account for more than 4% of total housing stock.
2. Impose a clause that revokes a STR permit for properties that receive more than five nuisance complaints in a calendar year.
3. Limit STRs in proximity to other STRs (deconcentrate) when city-wide/area-specific nuisance complaints exceed 25 complaints in a calendar year. Communities should establish a fair distance (e.g. 50 to 200 feet buffer between STRs), weigh equity implications, and re-evaluate buffer distance every two to five years.
    a. Before establishing a buffer distance, cities should increase regulatory standards and evaluate whether nuisance complaints reduce (e.g. establishing minimum parking standards may mitigate parking complaints).

Recommendations for Counties and Regions

Smaller jurisdictions may have difficulties managing STRs. That said, counties/regions should help facilitate proper management of STRs.

1. Levy a transient lodging tax at the county level if barriers exist for cities to impose their own (due to population size, low prevalence of STRs in individual communities, administrative limitations, etc.).
2. Establish a regional representative or liaison to attend Sharing Economy Committee meetings (see first "Recommendation for Oregon"). Regional liaisons should represent multiple counties.

Recommendations for Oregon

Oregon can and should become a leader in the management of STRs. This will require the state to become a leader in sharing economy affairs.

1. Establish a Sharing Economy Committee to facilitate research (including analysis of STR trends) and to assist communities across the state dealing with various issues. The objective of this committee should be one in support of sharing economy activities.

2. Hire a state employee to work directly in sharing economy affairs. Responsibilities should include:
    - Analyze sharing economy trends across the state, country, and globe
    - Communicate initiatives, information, and best practices to governments across the state
    - Provide government assistance in STR management
    - Collaborate with sharing-economy platforms
    - Collect data
    - Participate in global sharing economy networks
    - Coordinate state Sharing Economy Committee meetings, trainings, and workshops
    - Launch policy demonstration studies to pilot regulatory frameworks and options
3. Maintain a neutral Transient Lodging Tax at 1.8% to allow regions and cities to use their tax rates to manage STR growth.
4. Establish a pool of funding to help small communities amend land use ordinances for STRs.

Chapter 1: Introduction

While not officially defined by state or federal authorities, a short-term rental (STR) can be generally characterized as a housing unit that is leased or rented for less than 30 days. It is an arrangement that involves the trade of the temporary, but not future use, of a full or partial housing unit (Flath 1980). Sometimes referred to as vacation rentals, they are not new commodities of the housing market.

In recent years however, technology has greatly influenced the STR and vacation rental market (Varma 2016, Fleetwood 2012). Internet-based businesses such as Airbnb, VRBO, HomeToGo, LUXbnb, CouchSurfing, HomeAway, FlipKey, and VaCasa have given people access to a user-friendly, global marketplace (i.e. Airbnb alone reaches 191 countries). These companies cater to the exchange of short-term rentals under the coordination of a web-interface. Today, with STRs remaining relatively unregulated, just about anyone can rent out a room, their home, or their apartment by following a simple, streamlined process.

Tech-based platforms (i.e. Airbnb; VRBO) that provide a market to short-term rentals are taking advantage of the sharing economy phenomenon. The prevalence of access based services (that employ pay-per-use models rather than ownership of certain goods) has increased in recent years. Technological advances coupled with individuals placing higher value on experiences (rather than possessions) have also aided in this market shift. This phenomenon has allowed businesses and individuals under this access/sharing economy umbrella to cash in on the new opportunities this phenomenon brings. For instance, Airbnb claims approximately 100 million users with 500,000 bookings/night (Smith, 2017) and is expected to earn upwards of $3.5 million/year by 2020 (Gallagher, 2017). With that said, in a survey of Airbnb users, respondents were "nine times more likely to be more satisfied with Airbnb than their hotel stay" (Dillow, 2016).

With the introduction of new, sharing economy, business models came debate about how existing regulations address these new activities. Debate has considered whether the companies that market short-term rentals have also been able to reap greater financial returns by taking advantage of regulatory loop holes (allowing property owners to market their STRs through their site despite not being registered with the appropriate jurisdiction or despite these properties not having permits or paying tax, if applicable).

TERMS

Short-Term Rental (STR): A housing unit, rented or leased for less than 30 days; not officially defined by state or federal authorities

Sharing Economy:
An economic and social activity that mutualizes access to goods/services; tech-based and grown out of the open-source community; involves a peer-to-peer exchange (lateral exchange)

"a sharing economy is a blueprint of a future business idea that explains how to link economic, environmental and social issues"
(Daunorienė et al. 2015)

Access Economy: Suggested term for sharing economy activities which are market-mediated by a tech-based, intermediary company between suppliers and consumers (hierarchical exchange)

Impact:
The measurable effect a specific activity has on a defined area or people

The widespread use of these web-based platforms show evidence of many localized benefits, advertised to include: increasing tourism in local communities, helping property owners earn income by renting out their unused space, offering tourists and visitors the experience of living like a local, and driving visitors to areas tourists did not traditionally flock to.

> "On the one hand, there are those who see the sharing economy as a tool for addressing pressing social justice or environmental issues — such as people establishing time banks, food sharing schemes or those pursing alternative, low carbon lifestyles. At the other end of the spectrum, there are many entrepreneurs who stand to make millions of dollars from their new sharing platforms, mainly by encouraging people to rent out the underutilized goods they own". (Makwana, 2013)

Still, these companies often face criticism for negative impacts (such as nuisance issues or constraining the availability of housing) or for allowing its users to evade local policy. Because of these real and perceived negative impacts, cities have sought to regulate short-term rentals to recoup lodging taxes, prevent impacts on housing affordability, and address neighborhood concerns around noise, traffic, and parking. Accordingly, short-term rentals have gained a reputation of both satisfying a cultural, social, and economic need while not being completely without social and economic consequence.

Purpose

The purpose of the research project is to assess how short-term rentals, as part of the sharing economy, directly impact small and mid-sized cities in Oregon via revenue generation and fiscal revenue potential. This study also looks at ways in which demand for STRs influence the supply of long-term housing. Better understanding these impacts will fill a gap in existing literature, as most studies have focused on how short-term rentals impact large cities or mega-cities. Moreover, the purpose of this project is to gauge existing perceptions and policy frameworks of STRs in Oregon cities as to better understand the political and social climate around this activity. This policy analysis is intended to assist planners and policy makers of small communities respond to and better manage STRs in order to enable the benefits of the sharing economy.

Methodology

This study uses a mixed-method-approach. Data analysis used secondary sources including:

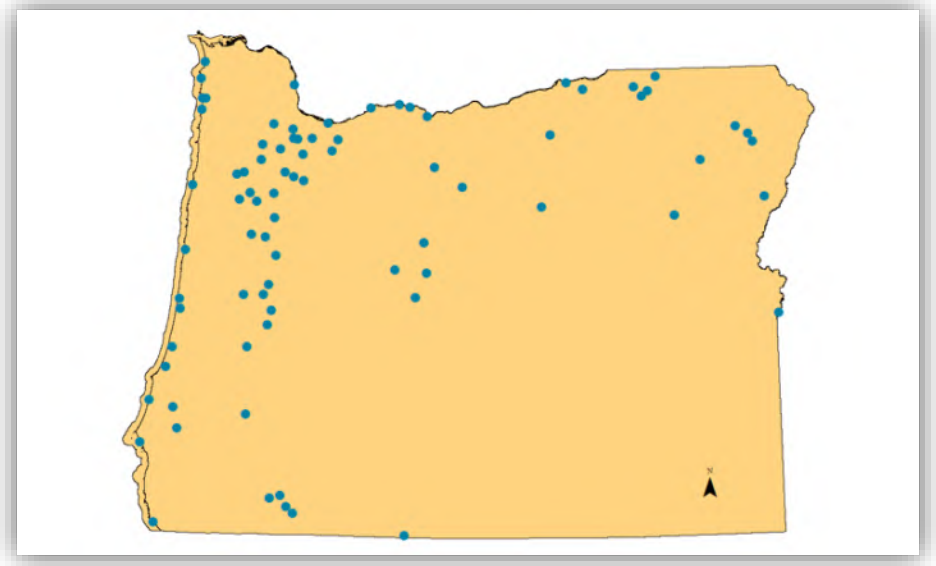
- **AirDnA:** market summary and property performance reports
- **AirBnB:** aggregated industry data by city
- **American Community Survey:** Housing and Population characteristics

Data analysis is used to answer the questions: What is the prevalence and characteristics of short-term rentals in Oregon? What is the revenue potential of short-term rentals in Oregon? And, to what extent do STRs constrain the supply of housing? This analysis specifically looks at cities with a

population of less than 100,000 (communities that have been mostly excluded from existing studies on this topic).

In addition, we created an innovative survey, developed on Qualtrics, to get information about policies and perceptions of city administrators and planners across Oregon. The survey had 32 questions and asked City managers and planners to comment on the ways in which STRs impact their community. Questions also asked City staff to comment on the ways in which various actors perceive STRs in their community. Finally, the survey asked City staff to comment on their existing or potential policy framework for STRs. The survey received 103 responses out of a possible 294 yielding a response rate of 35%.

Map 1.1. Location of Survey Respondents



Source: Responding to Short Term Rentals in Oregon Survey, Q27, 2017.

Further, using a series of selected case studies, I dig deeper into the connection between regulatory frameworks, perceptions of STRs, and the actual impact they create in small to mid-sized cities. Criteria for selection was that the city possess elevated levels of Airbnb rentals as compared to other Oregon cities and/or possess a high percentage of Airbnb rentals as compared to the community's total housing units. Additionally, I ensure that case studies represented a range of city sizes (with populations of under 100,000) and that selected cities came from a range of geographic regions in Oregon. Predominantly, these cities are tourist destinations. A description of the case studies and applicable data is in Appendix B. Case studies are: Ashland, Bend, Depoe Bay, Hood River, Joseph, Lincoln City, Manzanita, Rockaway Beach, Seaside, and Sisters.

Limitations

As in most analyses, several limitations exist. To enable transparency, this study presents the following limitations:

- AirDnA data was heavily relied on for this analysis. While the data set was very useful in explaining both the nature of short-term rentals and their impact in Oregon, margins of error are unknown and thus, its accuracy is questionable. I did compare AirDnA data (presented at the property level) with Airbnb data (limited to the city level) as a sensitivity test in Appendix D and found similarities. AirDnA data was also slightly manipulated by the researcher to remove fake and test listings.

- All STRs are not advertised or listed through the Airbnb platform. For instance, some property owners may use VRBO, HomeAway, and other platforms to market their STRs. Thus, communities may have more STRs than what was documented in this study.

- A limitation to the 'Responding to Short-Term Rentals in Oregon' survey is that not all cities in Oregon participated, meaning these results are not entirely comprehensive. Some communities indicated that they did not take the survey because they do not have any STRs (real and perceived) which may have limited learning about the perspectives of communities who are not currently concerned about this component of contemporary housing discussions.

- A final limitation was time. The researcher was unable to conduct interviews with city administrators or staff planners in each of the case studies cities (or with regional/state housing experts). This restricted the ability to fully compare findings with perceptions and to discuss potential future actions. As a result, full reliance was placed on the applicable city's survey responses (apart from Depoe Bay which was not received) and code review.

Chapter 2: Key Findings

The organization of this chapter[1] is as follows:

1) What is the prevalence and characteristics of STRs in Oregon?
2) What is the revenue potential of STRs in Oregon?
3) What are the existing perceptions around STRs in Oregon?
4) How are STRs currently being regulated in Oregon?
5) To what extent do STRs constrain the supply of housing in Oregon?

Overarchingly, this chapter conveys findings only for cities in Oregon with populations less than 100,000 (unless otherwise specified). ***In that, Portland, Eugene, Salem, and Gresham were excluded from analysis as to focus in on how STRs affect smaller cities in Oregon. Also, excluded from analysis are STRs in census-designated places or towns (as of 2015).***

What is the prevalence and characteristics of short-term rentals in Oregon?

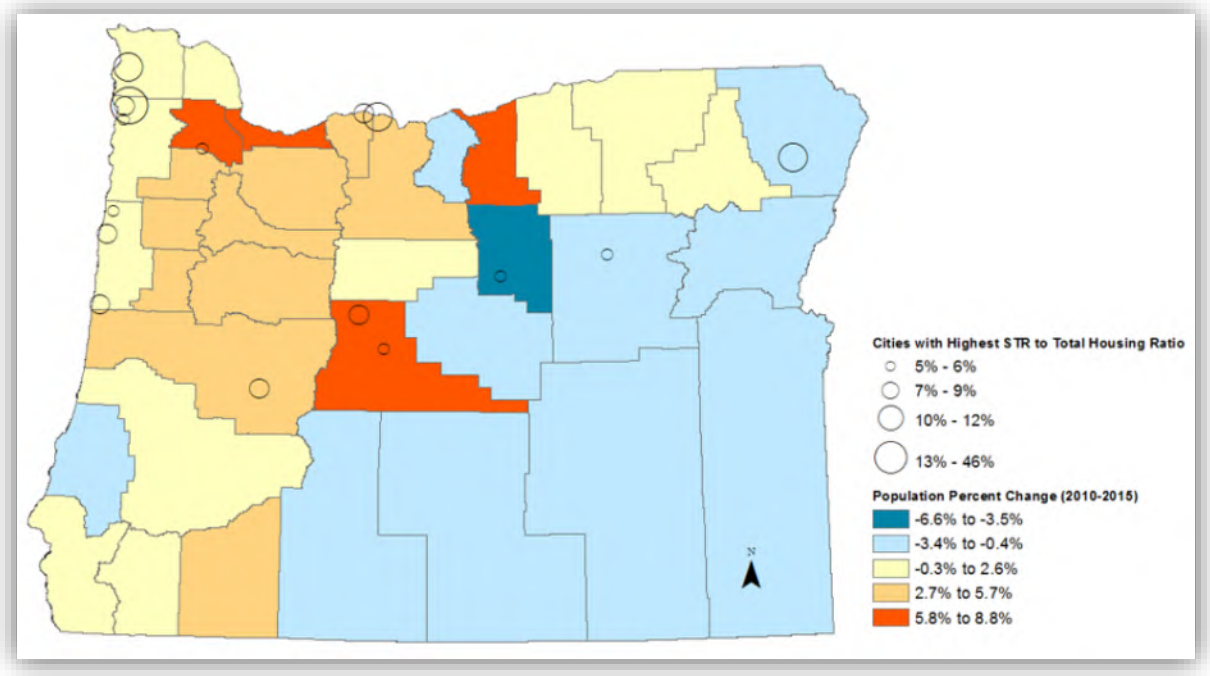
Oregon's four largest cities (Portland, Eugene, Salem, and Gresham) encompass approximately 10,000 AirBnBs (56% of the state's AirBnB short-term rental stock). Cites with less than 100,000 people (from this point further: cities) encompass approximately 8,000 Airbnb STRs; roughly 44% of total Airbnbs for the state. As a note, Airbnb are located within every county and in 75% of the state's total cities.

Assessing the approximate number of STRs (as well as their location and property characteristics) enables conceptualization of the industry. Use of existing studies provides additional context for findings.

- **Airbnbs account for more than 5% of total housing in only 16 cities, indicating that short-term rentals are not prevalent in most jurisdictions (see Map 2.1).** Still, we must qualify this statement with the fact that not all short-term rentals are equivalent to one dwelling unit. Nevertheless, for these 15 jurisdictions (Bend, Depoe Bay, Gaston, Hood River, Joseph, Lincoln City, Long Creek, Manzanita, Mitchell, Mosier, Nehalem, Rockaway Beach, Seaside, Sisters, Westfir, and Yachats), the ratio of AirBnBs to housing units could suggest a potential housing supply constraint. This concern will be further addressed later in this report.

[1] This chapter uses AirDnA data as well as information from the American Community Survey to paint a picture of the nature of STRs in Oregon as well as their impact. The Responding to Short-Term Rentals in Oregon Survey was also used to understand existing policy frameworks and perceptions of STRs.

Map 2.1. Indication of Potential Housing Supply Constraint for Cities with Higher Portion of STRs



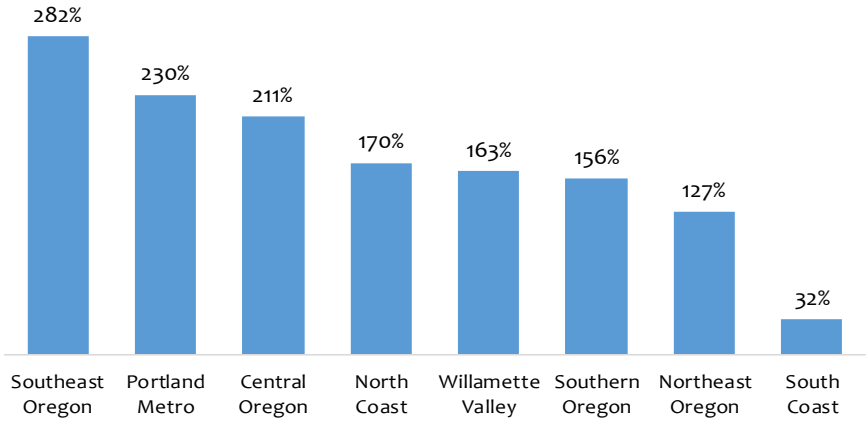
Source: AirDnA Property Data, Retrieved 2017. United States Census, American Community Survey, Population Data, 2011-2015. Excludes Portland, Eugene, Salem, and Gresham.

- **Airbnbs are most prevalent in Central Oregon and the North Coast.** In Central Oregon, AirBnBs account for approximately 4% of the region's total housing stock. In the North Coast, Airbnbs account for 5% of the region's total housing stock. Again, this is not a precise equivalency; rather it is an opportunity for conceptualization. For cities in the remaining six regions, Airbnbs account for approximately 1% of the total housing stock. As "the top five activities engaged in by travelers on overnight trips to Oregon were shopping, visiting a beach/waterfront, visiting a national/state park, visiting a landmark/historic site, and hiking/backing," it is understandable why these two regions attract so many tourists and visitors and further explains why there is such a demand for STRs.[2]

- **From 2014 to 2016, the number of new STRs created increased by roughly 180%.** In this same time, but by region, the number of new STRs created increased most drastically for Southeast Oregon (282%), Portland Metro (230%), and Central Oregon (211%), see Figure 2.2.

[2] Longwoods, International, USA. (2015). Oregon 2015 Visitor Report. http://industry.traveloregon.com/content/uploads/2016/11/Oregon-2015-Visitor-Final-Report.pdf

Figure 2.2. Growth of Newly Created Short-Term Rentals by Region, 2014 to 2016



Source: AirDnA Property Data, Retrieved 2017. Excludes Portland, Eugene, Salem, and Gresham.

- **Short-term rentals tend to be in lower income neighborhoods more commonly.** To measure, neighborhood is defined as the properties' census tract and lower income as median household income of census tract divided by the county's median household income. In areas like the South Coast, North Coast, and Central Oregon, I find more than half of the regions' properties are geographically located in lower income neighborhoods, see Table 2.9.

Table 2.9. Properties in Tracts with Higher/Lower Median Household Incomes than County, 2015

Region	Less Than County	Equal to/More Than County	Total
South Coast Oregon	66%	34%	309
Central Oregon	65%	35%	2,887
North Coast Oregon	64%	36%	1,720
Southern Oregon	42%	58%	769
Willamette Valley	40%	60%	961
Northeast Oregon	37%	63%	177
Portland Metro	35%	65%	1,052
Southeast Oregon	27%	73%	142
Total	**54%**	**46%**	**8,017**

Source: AirDnA Property Data, Retrieved 2017. ACS 2011-2015, Median Household Income. Excludes Portland, Eugene, Salem, and Gresham.

- **Most Airbnb hosts operate a single STR listed as the entire home.** Approximately, 4,400 hosts operate an Airbnb in small to mid-sized Oregon cities. Of these, 970 hosts (22%), operate more than one STR. Approximately 70% of Airbnb hosts rent out their entire home/apartment (either primary or vacation home) and another 30% are listed or rented out as a private room (the remaining 1% is listed as a shared room). This data reveals a bit about STR hosts. For instance, while most hosts are renting out their entire housing unit, a substantial portion of hosts (approximately 1/3) appear to be interested in making supplementary income solely off some of their extra space. This is an important distinction about the use of short-term rentals. To explain, as of 2015, the average household size for

owner/renter-occupied housing units was approximately 2.5 people while almost 60% of housing units had 3 or more bedrooms.[3] Accordingly, despite actual motives, many short-term rental operators are capitalizing on the efficient use of space, driving sustainable practices.

- **Most STRs are traditional property types.** Approximately 60% of all listed properties are houses and another 13% are apartments. Other common STR property types also remain more traditional, to include: condominiums, bed and breakfasts, cabins, and townhouses (see Table 2.3). Larger cities tend to encompass a larger percentage of apartment buildings, indicative of more urbanized areas.

Table 2.3. Airbnb Property Types (using all cities for added context)

Property Types	Cities with Pop. < 100,000		All Cities		Property Types	Cities with Pop. < 100,000		All Cities	
House	4,877	60.0%	10,927	59.4%	Timeshare	10	0.1%	10	0.1%
Apartment	1,068	13.1%	4,000	21.7%	Hostel	8	0.1%	12	0.1%
Other	470	5.8%	639	3.5%	Castle	6	0.1%	13	0.1%
Condominium	426	5.2%	638	3.5%	Boat	5	0.1%	27	0.1%
Bed & Breakfast	316	3.9%	465	2.5%	Dorm	5	0.1%	16	0.1%
Cabin	244	3.0%	322	1.8%	Nature Lodge	5	0.1%	5	0.0%
Townhouse	181	2.2%	321	1.7%	Treehouse	5	0.1%	8	0.0%
Camper/RV	116	1.4%	201	1.1%	Train	3	0.0%	3	0.0%
Guesthouse	76	0.9%	195	1.1%	Hut	1	0.0%	6	0.0%
Villa	69	0.8%	104	0.6%	Island	1	0.0%	1	0.0%
Bungalow	61	0.8%	124	0.7%	Lighthouse	1	0.0%	1	0.0%
Loft	57	0.7%	162	0.9%	Entire Floor	-	-	7	0.0%
Boutique Hotel	38	0.5%	43	0.2%	Earth House	-	-	5	0.0%
Tent	37	0.5%	73	0.4%	Igloo	-	-	2	0.0%
Chalet	20	0.2%	24	0.1%	Cave	-	-	1	0.0%
Yurt	14	0.2%	23	0.1%	Van	-	-	1	0.0%
Tipi	12	0.1%	13	0.1%	**Total**	**8,132**	**100%**	**18,392**	**100%**

Source: AirDnA property data, 2017. Excludes Portland, Eugene, Salem, and Gresham.

What is the revenue potential of short-term rentals in Oregon?

Analysis of the financial details of STRs allows one to understand the profitability of these units (for hosts and municipalities) as well as the potential economic development opportunity they can bring.

- **Short-term rentals generate substantial revenue in Oregon.** Hosts have earned an aggregated $82 million in the last year. This indicates potential positive gains to local economies assuming hosts reinvest locally. After discounting larger cities, Central Oregon and the North Coast far out earn other regions. These two regions also charge a higher daily rate/Airbnb on average and receive more annual bookings (Table 2.4).

[3] United States Census. American Community Survey, 2011-2015, Selected Housing Characteristics for Oregon (DP04).

Table 2.4. Annual Revenue Earned by Hosts and State Tax Revenue Earned (estimate)

Regions	Average Daily Rate per Property	Total Bookings Annual	Annual Revenue	State Levy (1.8%) Annual Earnings
Central Oregon	$ 209	46,391	$ 37,539,776	$ 675,716
North Coast	$ 206	38,927	$ 24,875,499	$ 447,759
Willamette Valley	$ 97	14,026	$ 5,315,475	$ 95,679
Portland Metro	$ 72	11,172	$ 4,937,697	$ 88,879
Southern Oregon	$ 98	13,209	$ 4,886,800	$ 87,962
South Coast	$ 132	5,710	$ 2,335,541	$ 42,040
Northeast Oregon	$ 129	3,307	$ 1,738,663	$ 31,296
Southeast Oregon	$ 125	2,977	$ 1,143,628	$ 20,585
Total	**$ 134**	**135,719**	**$ 82,773,079**	**$ 1,489,915**

Source: AirDnA. Airbnb property level data. Retrieved 2017. Excludes Portland, Eugene, Salem, and Gresham.

- **Nine of the 15 cities with the highest grossing revenue are in the North Coast.** Still, Table 2.5 shows that Bend receives a far more substantial amount of revenue (accounting for approximately 86% of all revenue from Central Oregon). Additionally, of these highest grossing cities, nine have Airbnbs that account for at least 5% of its housing stock (Bend, Depoe Bay, Hood River, Joseph, Lincoln City, Manzanita, Rockaway Beach, Seaside, and Yachats).

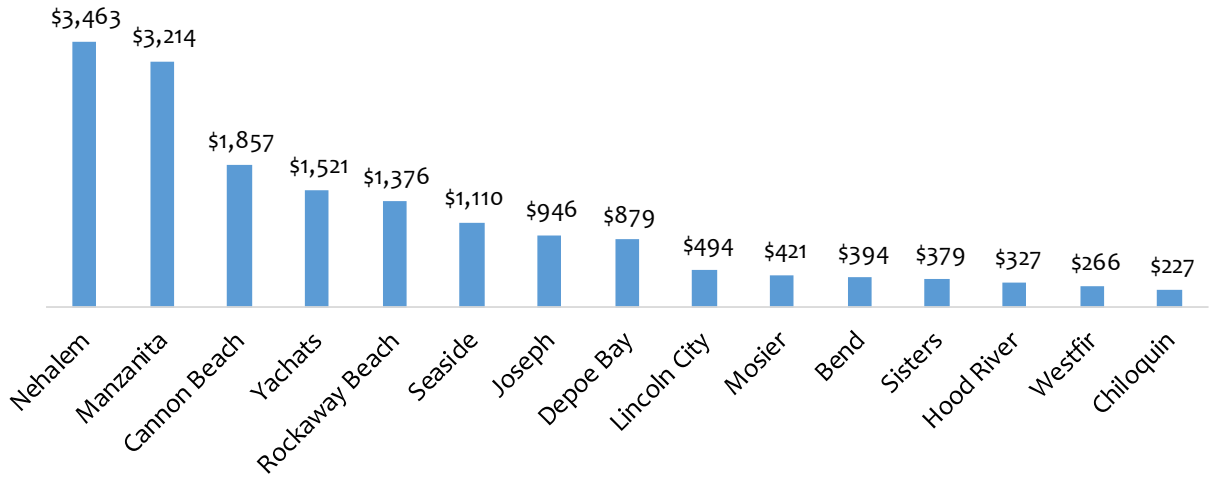
Table 2.5. Annual Revenue Generated with Frequency Data for Highest Grossing Cities

Cities	Region	Annual Revenue	Annual Revenue per Property (Max)	Annual Revenue per Property (Mean)	Annual Revenue Per Property (Std Dev)
Bend	Central Oregon	$32,207,439	$157,773	$14,801	$18,642
Seaside	North Coast	$7,198,080	$198,425	$16,285	$27,235
Lincoln City	North Coast	$4,145,729	$117,250	$12,265	$14,601
Cannon Beach	North Coast	$2,876,320	$203,617	$35,077	$39,131
Hood River	Central Oregon	$2,426,970	$81,215	$7,537	$10,428
Ashland	Southern Oregon	$2,160,243	$59,876	$8,309	$10,923
Rockaway Beach	North Coast	$1,688,036	$98,481	$15,925	$16,170
Depoe Bay	North Coast	$1,650,062	$59,288	$13,866	$16,207
Beaverton	Portland Metro	$1,620,761	$64,717	$4,739	$7,833
Manzanita	North Coast	$1,368,957	$90,051	$16,105	$16,773
Newport	North Coast	$1,322,513	$63,141	$9,380	$11,142
Redmond	Central Oregon	$1,036,179	$42,518	$6,642	$8,796
Tillamook	North Coast	$1,014,970	$69,780	$11,941	$13,862
Yachats	North Coast	$1,000,579	$62,675	$14,714	$11,232
Joseph	Northeast Oregon	$996,192	$64,836	$17,176	$13,523

Source: AirDnA Property Data, 2017. Excludes Portland, Eugene, Salem, and Gresham.

- **Eight of the 15 cities with the highest revenue per capita are also located in the North Coast (see Figure 2.6).** Revenue per capita for the state, excluding cities over 100,000 and using ACS population data for 2015, is approximately $54 dollars per person in the last year.

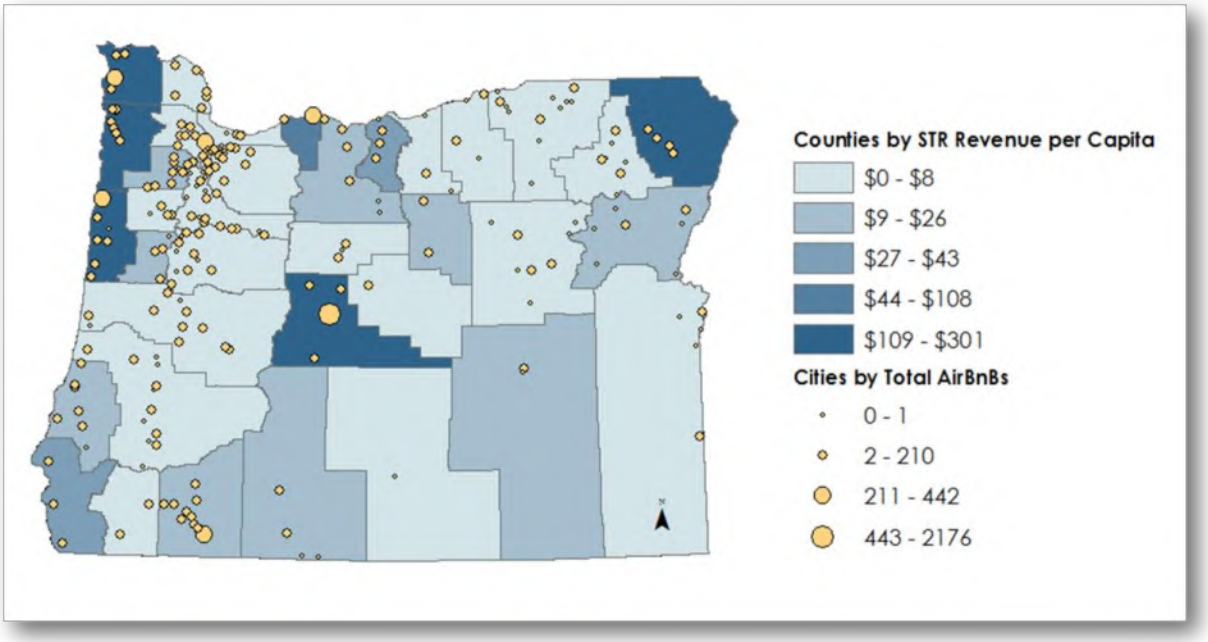
Figure 2.6. Cities with highest revenue generated per capita, 2015 population



Source: AirDnA Property Data, 2017. U.S. American Community Survey, 2011-2015 Population. Excludes Portland, Eugene, Salem, and Gresham.

Displayed in another way, Figure 2.7 shows STR revenue per capita by county with an Airbnb property dot density layer.

Figure 2.7. Counties with STR Revenue per Capita

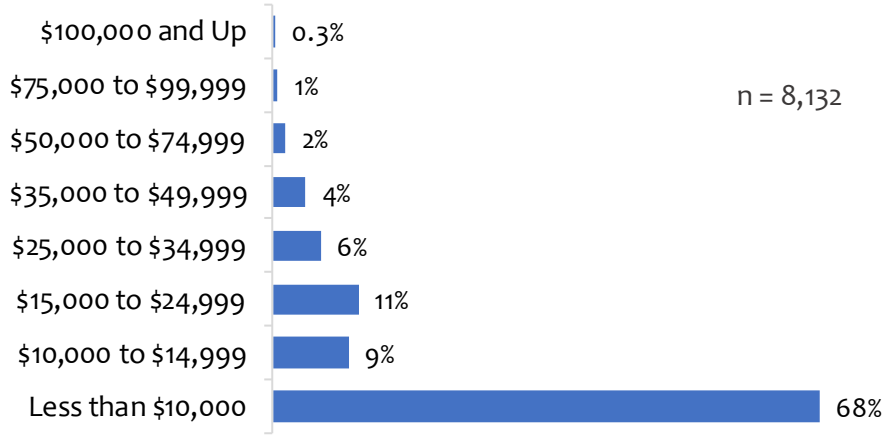


Source: AirDnA Property Data, 2017. Excludes Portland, Eugene, Salem, and Gresham.

- **Approximately 70% of Airbnb hosts generate less than $10,000/year in gross revenue for operating their short-term rental(s), see Figure 2.8.** Of those hosts, 30% generate less than $600/year. As independent contracts are expected to report income earned to the IRS after

$600 (via a 1099-MISC form), a large majority of hosts may be outside the law. In that, Airbnb only issues 1099-K tax forms to hosts who "earn over $20,000 and have 200+ transactions in the calendar year".[4] Outside of submitting 1099-K form to select operators, Airbnb passes on responsibility to hosts to report any income earned suggesting they consult a tax professional for income reporting assistance.

Figure 2.8. Percent of Hosts by Annual Revenue Earned



Source: AirDnA, Property Data, Retrieved 2017. Excludes Portland, Eugene, Salem, and Gresham.

- **Transient lodging taxes (TLT) imposed on Airbnbs by the state generate substantial fiscal revenue.** The state, imposing a 1.8% TLT on an estimated $82 million, earned approximately $1.5 million from Airbnb STRs in the last year. Still, Oregon's TLT rate is much lower as compared to other state levied taxes on this same lodging type. Of the states which levy one or more state taxes on Airbnbs, rates range from 1.8% to 14.5% and average about 8%.[5]

- **Many cities do not levy TLTs on STRs.** Airbnb indicates that nine cities[6] levy a tax on STRs marketed through their site, averaging 8.5% and ranging from 4% to 10.4%.[7] If all remaining cities levied just a 5% local option levy/TLT on STRs, an additional, aggregated $2 million could be earned (estimate). This would be in addition to the $4 million already being earned by cities who do charge a TLT or similar tax on STRs. I note the discrepancy that while Airbnb indicates that nine cities levy a tax on STRs, the Responding to Short Term Rentals in Oregon Survey found that 21 communities levy a tax on STRs. This suggests that many communities

[4] AirBnB. Should I expect to receive a tax form from Airbnb? Retrieved May 2017. https://www.airbnb.com/help/article/414/should-i-expect-to-receive-a-tax-form-from-airbnb
[5] AirBnB. In what areas is occupancy tax collection and remittance by Airbnb available? Retrieved May 5, 2017. https://www.airbnb.com/help/article/653/in-what-areas-is-occupancy-tax-collection-and-remittance-by-airbnb-available
[6] Cities are: Beaverton, Bend, Cottage Grove, Eugene, Florence, Lincoln City, Newport, Portland, Springfield. Counties were Lane, Multnomah, Tillamook, and Washington.
[7] AirBnB. In what areas is occupancy tax collection and remittance by Airbnb available? Retrieved May 5, 2017. https://www.airbnb.com/help/article/653/in-what-areas-is-occupancy-tax-collection-and-remittance-by-airbnb-available

imposing a STR/TLT tax have not communicated this information to STR web-based platforms like Airbnb.

To what extent do short-term rentals constrain the supply of housing?

Communities across Oregon are concerns whether STRs constrain the supply of housing (long-term rentals, owner-occupied units, workforce or affordable housing, etc.). This section provides some evidence to get us closer to understanding this impact.

- **Half of all STRs are reserved for less than 30 days (36% are reserved for 10 or fewer days).** As Table 2.12 on the following page shows, 28% of STRs are reserved for 30 to 90 days, 17% are reserved for 91 to 180 days, and 5% are reserved for 180 days or more. The average reservation day across the state is 52 days in a calendar year.

- **In more urbanized regions such as Portland Metro and Willamette Valley, STRs are operated as private rooms slightly more than as entire homes.** In Central Oregon and the North Coast, STRs are being operated more commonly as entire homes, providing some indication of the type of space available (e.g. more second homes, vacation houses, etc.), see Table 2.12.

Table 2.12. Airbnbs Organized by Listing Type, Days Reserved, and Region

Reservation Days	Entire Home/Apt.	Private Room	Shared Room	Total
Central Oregon	**2,264**	**624**	**17**	**2,905**
Less than 30 Days	35%	11%	1%	46%
30 to 90 Days	26%	5%	0%	32%
91 to 180 Days	13%	4%	0%	17%
181 Days or More	4%	1%	0%	5%
North Coast Oregon	**1,483**	**228**	**9**	**1,720**
Less than 30 Days	38%	6%	0%	44%
30 to 90 Days	24%	3%	0%	27%
91 to 180 Days	18%	3%	0%	21%
181 Days or More	6%	1%	0%	7%
Northeast Oregon	**150**	**80**	**3**	**233**
Less than 30 Days	29%	25%	1%	55%
30 to 90 Days	21%	6%	0%	27%
91 to 180 Days	12%	3%	0%	16%
181 Days or More	3%	0%	0%	3%
Portland Metro	**434**	**591**	**27**	**1,052**
Less than 30 Days	21%	34%	2%	57%
30 to 90 Days	9%	15%	1%	25%
91 to 180 Days	8%	5%	0%	13%
181 Days or More	3%	2%	0%	5%
South Coast Oregon	**232**	**76**	**1**	**309**
Less than 30 Days	36%	12%	0%	48%
30 to 90 Days	23%	8%	0%	31%
91 to 180 Days	13%	4%	0%	16%
181 Days or More	4%	1%	0%	5%
Southeast Oregon	**135**	**34**	**1**	**170**
Less than 30 Days	41%	11%	1%	52%
30 to 90 Days	25%	3%	0%	28%
91 to 180 Days	12%	6%	0%	19%
181 Days or More	1%	0%	0%	1%
Southern Oregon	**441**	**318**	**10**	**769**
Less than 30 Days	28%	24%	1%	52%
30 to 90 Days	14%	9%	0%	23%
91 to 180 Days	12%	7%	0%	19%
181 Days or More	4%	2%	0%	6%
Willamette Valley	**476**	**484**	**14**	**974**
Less than 30 Days	23%	28%	1%	53%
30 to 90 Days	14%	13%	0%	27%
91 to 180 Days	9%	7%	0%	17%
181 Days or More	2%	1%	0%	3%
Total	**69%**	**30%**	**1%**	**8,132**
Less than 30 Days	32%	17%	1%	49%
30 to 90 Days	21%	7%	0%	28%
91 to 180 Days	13%	5%	0%	17%
181 Days or More	4%	1%	0%	5%

Source: AirDnA. Airbnb property level data. Retrieved 2017. Excludes Portland, Eugene, Salem, and Gresham.

- **Perhaps a more accurate determination of housing supply constraints is the ratio of STRs (entire homes, rented for more than 30 days per year) to total housing units. Using this ratio to measure supply constraints, STRs account for approximately 2% of total housing in the North Coast and approximately 1.8% in Central Oregon.** Remaining regions attribute to less than 1%.

- **For most case study cities, data suggests that STRs are constraining the supply of long-term housing.** Hood River, Joseph, and Seaside's housing stock are particularly influenced by STRs (see Table 2.13 or Appendix A, Table B.7).

Table 2.13. Indication of STRs Potentially Constraining Housing Supply

Case Studies	Airbnbs (Entire Home, Rented for 30+ Days)	% of Total Housing Units	Airbnbs (Entire Home, Rented for 91+ Days)	% of Total Housing Units
Ashland	92	1%	59	1%
Bend	997	3%	370	1%
Depoe Bay	56	4%	28	2%
Hood River	108	34%	47	15%
Joseph	41	7%	21	4%
Lincoln City	154	2%	65	1%
Manzanita	45	4%	20	2%
Rockaway Beach	63	3%	38	2%
Seaside	215	5%	18	0%
Sisters	43	3%	43	3%
Total	**1,814**	**3%**	**709**	**1%**

Source: AirDnA Property Data, Retrieved 2017.

- **In case study cities, STR growth is increasing at a faster rate than total housing units are (see Appendix B, Table B.5).** In some of these communities, household formation is also increasing at a faster rate than the construction of new housing units, indicating housing supply constraints (Bend, Depoe Bay, Joseph, and Manzanita).

- **Property owners in resort communities (see Appendix B, Table B.6) can generate more annual revenue off STRs than they can off standard long-term rental units.** Therefore, in these communities, there may be more of a motive for property owners to operate STRs (although the differential in time and cost of maintenance for long-term vs short-term rentals is unknown).

What are the existing perceptions around short-term rentals in Oregon?

Using the Responding to Short-Term Rental Survey, analysis can delve into the existing perceptions that communities hold over STRs.

- **In general, survey respondents indicated that while residents shared mixed perceptions about STRs, local elected officials and businesses within the accommodation sector viewed**

STRs as less problematic. Still, respondents who indicated that STRs may be more problematic in their own community than in other Oregon communities or comparable communities across the U.S., tended to agree or strongly agree that STRs impacted the availability of affordable and workforce housing (78%), long-term rental housing (78%), and owner-occupied housing (56%).

- **STRs provide great benefits including their ability to provide transient lodging tax revenue, to support tourism activities, and to support communities that rely on tourism.** For instance, they serve a market need by providing additional lodging options (especially for communities without any traditional accommodation types) and thus, they bring in tourists that might not have otherwise visited. Furthermore, they provide income and employment opportunities, allowing homeowners to get extra use out of their properties (thereby making homes more affordable).

- **STRs economically weaken communities by impacting resources such as the availability of housing (especially affordable and rental housing) and police and city staff time who deal with complaints from neighbors/business owner**s. On the latter point, slightly over half of survey respondents indicated that residents have raised nuisance issues within the last five years. Among the cited nuisance complaints include: parking concerns (78%), noise concerns (67%), garbage and outdoor clutter concerns (56%), high occupancy levels (485), and excessive parking (45%). Furthermore, respondents indicated concern over the possibility that hosts could be individuals or companies from out of the state that take their revenue with them. Finally, respondents indicated that STRs can economically weaken communities in that they tend to be operated seasonally creating periods of no economic stimulation followed by a community that falters in the off-season.

- **Respondents who agreed or strongly agreed with that statement that STRs evaded policies and regulations in their communities (26%) still did not all agree that their policies were ineffective.** In that, of that 26%, approximately 20% indicated their policy was somewhat effective, 44% indicated their policy was neither effective nor ineffective, and 36% indicated their policy was somewhat (16%) or very ineffective (20%).

- **Communities who do not see the need to regulate indicated that STRs are either not a problem in their community (e.g. there are no STRs or not enough STRs to regulate) or that STRs fit in with the character of their community and therefore regulation is not necessary.** Other reasons why communities have not pursued regulation was the issue has not been raised by community members or that staff resources and time was preventing them from adopting policies.

- **Most communities who will potentially develop ordinances to regulate STRs in the next five years will do so primarily to formalize the process and rules associated with it, legitimize existing situations, develop clear and objective standards, and promote fairness.** Still, some respondents indicated wanting regulations as the STR trend is increasing and they want to mitigate impact before STRs become a burden, or because they do not want to be overrun by STRs. The desire to reap transient tax revenue was also a common motivation for regulation.

How are short-term rentals currently being regulated in Oregon?

The Responding to Short-Term Rentals in Oregon Survey also provided information about existing ways STRs are being regulated in the state. The following provides some information about prevailing policy frameworks.

- **STRs are commonly referred to as transient rental or vacation rentals**. Less commonly, some refer to STRs as traveler/accessory traveler accommodations, bed and breakfasts, motels, or RV parks. Some of these less common terms (e.g. RV parks) are used in lieu of a term specific to STRs as policies have not caught up to this housing trend.

- **STRs are most commonly defined as units rented for less than 30 days.** Some policies indicate that they must be rented for a certain number of days before qualifying as a STR (e.g. at least 10 days in a calendar year). Lease type (e.g. less than a month-to-month basis) was also found to be used.

- **Most regulations for STR require that operators have a license and/or permit (92%) and 81% of respondents also indicated that their community imposes a transient lodging tax (or similar tax).** While fees vary widely, by cost and by type (e.g. conditional use permit, short-term rental licenses, business license, etc.) tax rates tend to remain more consistent (see Table 2.10). The following table provides some data on fees and tax rates.

Table 2.10. Frequency for Fee and Tax Rates

Fee Rate Frequency			Tax Rate Frequency	
Mean	$	498	Mean	7.4%
Median	$	358	Median	7.5%
Standard Deviation	$	554	Standard Deviation	2.3%
Range	$	2,150	Range	8.6%
Min	$	50	Min	1.8%
Max	$	2,200	Max	10.4%

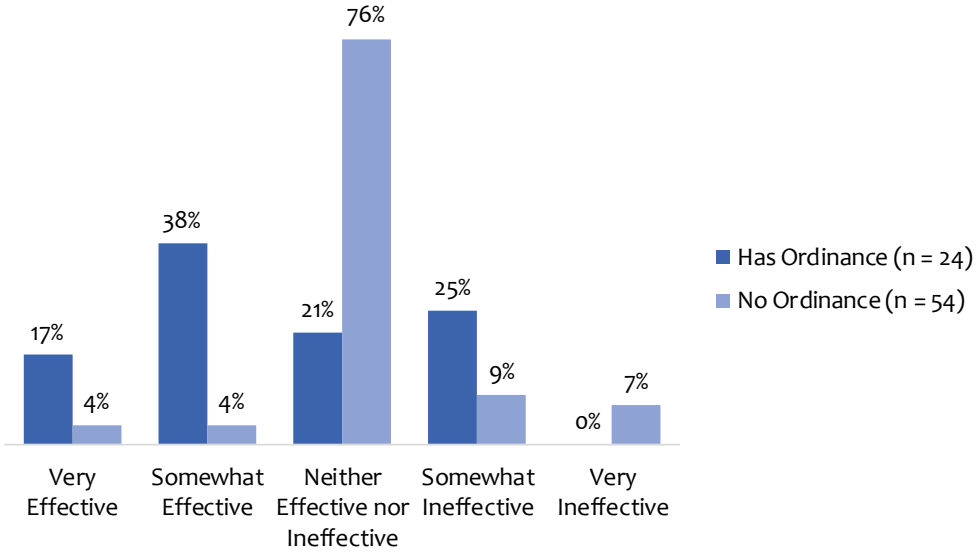
Source: Responding to Short-Term Rentals in Oregon Survey, y-Q20 and y- Q21, 2017.

- **Respondents also commonly regulate STRs by relying on concentration caps/limits or occupancy requirements.** Restricting STRs to certain zones, adopting guest behavior standards, or making properties subject to review and inspection (making determinations on case-by-case basis) have also been put into place to mitigate nuisance and promote health, safety, and wellbeing.

- **Most respondents (60%) find their regulations for STRs, or lack thereof, to be neither effective nor ineffective in managing the economic benefits or negative impacts of short-term rentals.** Approximately 21% found their regulations, or lack thereof, to be very or somewhat effective and 18% found them very or somewhat ineffective. Still, we note that a generous portion of those that found their policies/lack of policies to be neither effective or ineffective did not actually have any regulatory framework. This can be explained in that many smaller communities in Oregon still do not have many STRS (if any) and thus, do not have many of the same concerns as other communities (e.g. around nuisance issues or

housing supply concerns), see Figure 2.11. Noting that STRs are uncharted territory for many cities, it may take time to adopt the appropriate regulatory framework that works best for each community.

Figure 2.11. Effectiveness of Short-Term Rental Ordinance or Lack of Ordinance



Source: Responding to Short-Term Rentals in Oregon Survey, Q25, 2017.

- **STR ordinances were most commonly enforced by issuances of administrative citations (62%) and fines (58%).** In addition, many respondents commented on the fact that enforcement was a challenge.

Chapter 3: Conclusions

This chapter deliberates the findings discussed in chapter 2 and uses the literature review in Appendix A to provide some theoretical underpinnings. Primarily, this chapter discusses best ways Oregon planners and policy makers can respond to STRs, should they want to. Examples are provided throughout to enhance understanding or to provide those interested with more information. However, explicit recommendations are laid out in the following chapter. Smaller jurisdictions outside of Oregon and across the United States may also find use out of these best practices. Finally, this chapter outlines possible, future steps for continued research on this topic to ensure more accurate policy responses.

How should policy makers and planners in Oregon respond to short-term rentals?

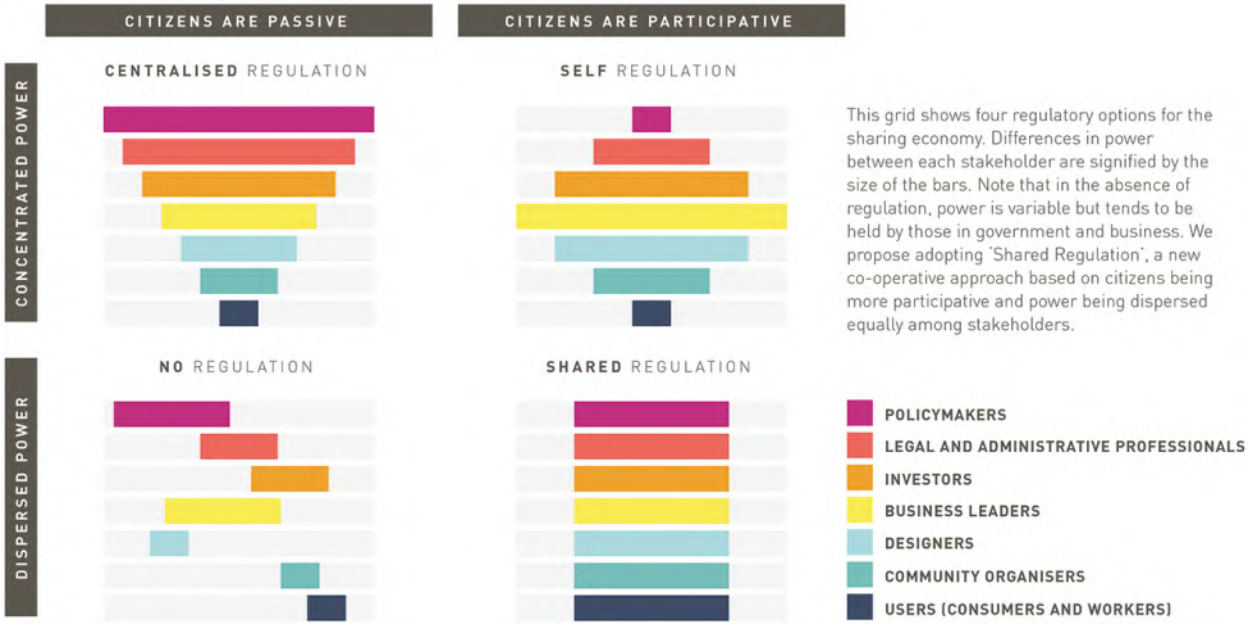
We know that the solution to STRs will be different for every city. What is true for Oregon is true for communities across the United States: STRs affect cities dissimilarly and, in turn, they view STRs diversely. Accordingly, many communities have taken the experimental and incremental approach, not knowing if their policy will truly mitigate the impacts and/or enable the benefits hoped for but needing to trial something. Performance of STR policies are still unknown. We need more data and rigorous statistical research to measure the impacts and policy treatments given. In the meantime, and while much is still unknown, following some general best practices to manage STRs may prove fruitful.

In Oregon, I find that when linking existing policy to perceptions, in general, policy reactions have met community reactions. In that, communities unchallenged by STRs (or where STRs are not a community concern) tend to be undaunted by the need to regulate, as an existing practice or as a future precaution. Communities, who are challenged by STRs (at any extreme) and/or where community members (residents, local elected officials, etc.) have raised the issue, have generally adopted or amended their regulations recently (since 2000) or are planning to in the next five years.

> "Users in particular should be at the centre [sic] of the regulatory process because they could play a greater role in compliance" (Balaram, 2016).

Inclusivity is the key to construct equitable regulations that are less likely to be evaded and more likely to mitigate the negative externalities created by these policies. Research has already posited four broad approaches to regulation: centralized regulation, self-regulation, no regulation, and shared regulation (see Figure 3.1 on the following page). Shared regulation, deemed the most effective approach, is intuitive to regulatory best practices generally, in which policies for STRs should be no different. Including local community members and business stakeholders in discussions about regulation is valuable. Not only will this approach generate stronger regulations but policy makers can also learn the ways in which people in their community want take part in this sharing economy activity.

Table 3.1. Broad Approaches to Regulate Short-Term Rentals



Source: Balaram, Brhmie (2016). https://www.thersa.org/discover/publications-and-articles/rsa-blogs/2016/07/how-do-we-collaboratively-regulate-the-sharing-economy

Accordingly, regulation should be a part of a community conversation as it is necessary to understand the true impacts that STRs have on hosts, accommodation sector businesses, and residents. Regulation should be a part of a regional conversation as most areas in Oregon receive regional tourism, and therefore regulatory frameworks in one community (e.g. the option of banning outright) can have unintended consequences on nearby jurisdictions (e.g. increasing STRs usage potentially affecting their housing availability more than otherwise). Ideally, sharing economy platforms should be involved too. For instance, policy makers and policy monitors need big data to construct useful regulatory frameworks and these platforms have this missing piece. Jurisdictions having access to audited, databases or summary data will help improve the way local governments manage STRs (Sundararajan, 2016).[8]

Thus, while community and regional conversations should be a given, additional approaches are more variable. Compiled below are several, general, best practices. Jurisdictions should consider these practices by reviewing them in context of their community.

Define Short-Term Rentals Codify Regulations in City Ordinances

The first step in attempting to respond to STRs is to have it defined in an ordinance. Many communities have no framework in place to address STRs which has presented challenges in mitigating issues that arise. Some communities, lacking an appropriate definition have relied on similar lodging terminology, such as temporary living accommodations (e.g. hotels, motels, extended-stay hotels, etc.), to address issues that arise but this is not an adequate practice for the

[8] STRs data is becoming increasingly easy to access free of charge or for predetermined prices. Collaborating with academic institutions can help reduce the cost of data, and if purchased on a state or regional level, can reduce the price on a per capita basis.

long term. STRs are different than traditional lodging and should be regulated accordingly. The best approach is to define the use as "short-term rentals." Terminology such as vacation rental should also be reconsidered as it implies that these units are only used for tourism or recreational purposes. In actuality, STRs are used by those on prolonged business trips or by existing or potential residents who are in the process of looking for housing in a particular community and therefore uninterested in a long-term lease.

In addition to terminology, a frequency of use standard should be determined. The common standard is less than 30 days in a calendar year or less than 30 consecutive days but this can vary and allow for more flexibility. As best practice, generate official designation in conjunction with a local, community conversation and a regional conversation. Communities where STRs are not highly prevalent may fair well with a looser standard (e.g. less than 120 days in a calendar year) while other communities may enforce a stricter standard (e.g. less than 15 days in a calendar year).

Once defined, this activity will become easier to classify and regulate usage. It also legitimizes STRs so residents who want to operate a STR can do so legally. Equally important, this becomes the only way for communities to collect taxes on STRs. Despite commentary of communities that lack any STRs (in reality or as perceived) indicating there is no need to regulate, any community with residencies can, at any time—be affected by STRs. Therefore, the growing trend of STRs requires communities to take precaution and be proactive.

The following are examples of definitions for local, Oregon ordinances:

- City of Gearhart: "Vacation Rental Dwelling. Any structure, or any portion of any structure, which is occupied or offered or designed for transient occupancy for less than 30 days for dwelling, lodging or sleeping purposes; and includes houses, cabins, condominiums, apartment units or other dwelling units, or portions of any of these dwelling units, that are used for temporary human occupancy, provided such occupancy is less than a 30-day period."

- City of McMinnville: "Vacation Home Rental. The Use of a dwelling unit by any person or group of persons entitled to occupy for rent for a period of less than 21 (twenty-one) consecutive days."

- City of Manzanita: "Short Term Rental. A dwelling unit that is rented to any person on a day to day basis or for a period of less than thirty (30) consecutive nights."

Distinguish Between Short-Term Rentals

While all STRs function similarly, they are not all the same. STRs can be an entire home, or a shared/private room. They can be located in the main house/apartment or be located in a secondary dwelling on the property. Further, some STRs are used for a single night or a weekend while others can be reserved for several weeks to a month at a time. In addition to duration, frequency also distinguishes STRs in that a neighbor may not notice a single tourist or family who have rented out a house for a weekend but may notice when there are new visitors every week or more than 30 visitors/new families in a single year.

Thus, policies that differentiate between types of STRs will promote fairness and equitability. Tiered restrictions can be used to make it less financially burdensome on property owners who are interested in renting out their home for less than 10 days in a calendar year compared to high volume owners (someone who rents their home out two to three times for 30 consecutive days in a calendar year). Per example, "raising the cost for high volume listings of short-term apartments to the point where long-term residential leases become more profitable" can be considered a useful strategy to discourage "hotelization" (Katz, 2015). With that, more lenient requirement for those renting out a single room can encourage property efficiency. For communities with affordable housing issues, higher fees for STRs in accessory/secondary dwelling units may incentivize property owners to use that valuable space for full-time residents as opposed to visitors. There should also be a distinction between certain STRs and second homes[9].

For an example, visit the City of Ashland's Development code which differentiates between "Travelers' Accommodations" and "Accessory Travelers' Accommodations."

- http://www.ashland.or.us/SIB/files/AMC_Chpt_18_current.pdf (18.2.3.200)

Restrict Use or Incentivize Moderate Use

Literature attests that the 'banning STR outright' policy response will not likely fix housing availability or affordability issues due the amount of STRs there are in most cities (small portion, comparatively). Further, literature hypothesizes that banning outright can have more unintended, negative repercussions by preventing the positive aspects that the sharing economy brings to residents and local economies via this tourism niche (Short Term Rental Advocacy Center). This is not to say that banning is not a legitimate policy approach particularly in areas in a housing crisis. However, in smaller jurisdictions, where neighborhoods are less dense and where housing tends to have larger footprints, banning outright can also disallow efficient uses of individual properties. Accordingly, I provide two alternative options that may better enable the benefits of STRs while still allowing proper management of STRs (see Figure 3.2). Regulatory paths for each option are laid out in the following chapter.

[9] Hood River, Oregon makes this distinction in their 2015 Housing Needs Assessment. This STR/second home distinction is valuable as their uses have different sets of implications. With that said, a second home has more impact on the availability of housing than does a STR in a room of somebody's primary dwelling.

Figure 3.2. Alternatives to the Policy Option of Banning Short-Term Rentals

Restrict Use	Incentivize Moderate Use
Purpose: to limit the number of short-term rentals in a community or in particular areas of a community	***Purpose:*** to encourage property owners to responsibily limit how they use their properties as short-term rentals
Advantages: systematically controls the prevalence and influence of short-term rentals	***Advantages:*** preserves property rights; permits efficient use of participating properties
Disadvantages: potential for policy evasion; concerns over fairness (who is allowed to participate)	***Disadvantages:*** potential for property owners to choose not to moderate use (especially those with higher-incomes)
Example: In Manzanita, Oregon short-term rentals are allowed outright with a percentage cap on the number of short-term rentals permitted in some areas. A waiting list is used for eligible homeowners who would otherwise be eligible for a license to operate. ***More information:*** Manzanita, Oregon. Ordinance No. 10-03 (As amended by Ord. No. 16-05 12/7/16), "An Ordinance Establishing Rules and Regulations Relating to Short Term Rentals"	***Example:*** In Portland, Maine, annual registration fees for non-owner occupied short-term rentals are twice as expensive than those for owner occupied units. In addition, fees increase for each unit (e.g. ranging from $100 for the first unit to $2,000 for the fifth unit for owner-occupied units and $200 for the first unit to $4,000 for the fifth unit for non-owner occupied units). ***More information:*** Portland, Maine. Amendment to Portland City Code Chapter 6 and Chapter 14, Re: Short Term Rentals. http://portlandmaine.gov/DocumentCenter/Home/View/15848

Source: DiNatale, Sadie (2017). Assessing and Responding to Short-Term Rentals: Enabling the Benefits of the Sharing Economy.

These progressive options help to "ensure that people only occasionally rent out their house whilst away (sharing economy), rather than run a permanent, unregulated hotel (not sharing economy)" by regulating "the rental of homes in such a way that it becomes part of the sharing economy as previously defined" (Frenken, et al. 2015). Determination about what route local government should take is contingent upon the way in which property owners operate STRs in that community as well as the perceptions community members have for STRs. Either option, will require evaluation to ensure that the intended outcome has been achieved.

It may be that STRs are not an existing problem, or that STRs receive praise for providing lodging opportunities where no traditional lodging options were available (etc.). In community situations like these, there may be no need to restrict use or incentive moderate use.

Normalize STRs as a Residential Activity (with Caveats)

Another point of controversy and debate is whether to classify STRs as a residential or commercial use. This determination will have huge implications in how STRs are used, and who can use them. On one end, STRs provides a property owner with employment while technically using their home as a small, business venture (though not to the degree of a hotel or motel). On the other hand, STRs are located in residencies, function residentially (e.g. used for eating, sleeping, hanging out), and the rental units maintain their residential character. Normalizing STRs as a residential activity, with regulatory caveats that ensures property owners maintain the properties' residential character (see subsection, "Develop Appropriate Regulatory Standards") can ensure that those who use STRs moderately and within legal parameters can continue to do so.

The following outlines some court cases in which STRs were determined a residential activity:

- "*Short-term rentals of lakefront house are not commercial use in violation of residential zoning laws*, for the purpose that residential referred to activities on the property and not the owners' intent to make a profit, there was never more than on family occupying the house, and the renters engaged in residential activities."
    - Siwinski v. Town of Ogden Dunes, Court of Appeals of Indiana [intermediate court], Decided March 16, 2010, 922 N.E.2d 751. (Judicial Decision: 62 PEL 210, Indiana.)

- *Short-term rental determined predominately residential* for the reasons that "the property was designed for use predominately as a residence, the site was purchased and the home was built for personal use, the intent was to use the property as a second home, the decision to allow short-term rentals was made to offset expenses and to share the outdoor experience with visitors, most of the rental activity occurred during the summer months, [the property owners] used the property when possible." Further, "the receipt of income does not transform residential use of property into commercial use" (Farny v. Board of Equalization). Finally, the intent was not to generate profit (as is the case of hotels, motels, and bed and breakfasts) but to assist with the cost of maintenance.
    - O'Neil v. Conejos County Board of Commissions, Court of Appeals of Colorado, Decided March 9, 2017.

- Piece of a condominium declaration "affirming that no business, trade, occupation or profession of any kind shall be conducted, maintained or permitted on any part of the property was not intended to restrict the right of any condominium unit owner to rent or lease his condominium unit from time to time." In addition to restrictive covenants not being favored in Missouri, "the covenant was interpreted narrowly in favor of the free use of the property and that nightly rentals did not violate the R-3 multiple-family dwellings statute."
    - Mullin v. Silvercreek Condominium Owner's, 195 S.W.3d 484 (Mo. Ct. App. 2006):

Still, depending on the political climate and level of controversy in a given community, limiting STRs to specific zones (e.g. mixed-use, neighborhood commercial, higher or lower density residential areas) may prove to be a useful compromise or solution (also see next subsection "Permit STRs in Premium Areas with Monitoring"). Further, in some situations restrictive covenants (in Home Owners Associations, for example) may view STRs as a breach of rules and landlords may still prohibit their tenants from operating short-term rentals in the same way they may prohibit sub-leasing. Accordingly, some management of STRs can occur outside of municipal control.

Permit STRs in Premium Areas with Monitoring

If community conversations come to the conclusion that STRs are to be limited to certain areas of a community, consider permitting the use of STRs in premium areas. In this sense, premium areas can be considered areas of city with abundant natural resources: places tourists and visitors flock to where STRs tend to be most prevalent. Allowing STRs in these areas are in line with sharing economy values. In that, more people are given access to homes in superior locations.

Still, as communities with these premium areas (e.g. resort communities) are facing greater challenges than non-resort communities, paying attention to the number and use of STRs in these areas is important as allowing them without management may disrupt the character of those neighborhoods (see next subsection, "Develop Appropriate Regulatory Standards").

Develop Appropriate Regulatory Standards

In considering STRs as a residential use, it is important to set specific standards on these units to ensure they are not overly burdensome to the neighborhood. For instance, limiting guest capacity to the family/household capacity, quantifying the frequency and duration of visitor stays, and fining property owners for created nuisances are some options for maintaining the character of neighborhoods. In respects to the quantification of frequency and duration of visitors, one can equate the number of days the property is rented to the number of days the property is owner-occupied. In areas with constrained housing availability, requiring that property owners live in their dwelling unit for six to nine months out of the year, for example, can disincentive the hotelization of neighborhoods.

Finally, requiring that STR units receive inspections should also be a minimum to promote the health, safety, and wellbeing of both residents and visitors. Inspections could include a general home inspection or a fire inspection.

Require a Permit or License

Requiring STR operates to register their units or get a permit/license can help communities stay on top of where these rentals are located and can help manage how many there are. It will also allow communities to collect data (aiding in the chance to measure the benefits/costs that STRs could have on neighborhoods, hosts, and/or residents). Collecting fees from these permits/licenses can be low (solely used to cover the administrative cost of processing permits/licenses) or higher if excess revenue is needed for other initiatives (STR education, outreach, inspection services or complaint follow-up, etc.). Requiring STR operators to register for a business permit (as opposed to getting a permit specially designated for STRs) may also prove to be less administratively burdensome.

An example of language for requiring a short-term rental license is as follows:

- City of Bend (7.16.030): "Annual Short-Term Rental Operating License Required. No owner of property within the Bend City limits may advertise, offer, operate, rent, or otherwise make available or allow any other person to make available for occupancy or use a short-term rental without a short-term rental operating license. Advertise or offer includes through any media, whether written, electronic, web-based, digital, mobile or otherwise. [Ord. NS-2239, 2015]"

Require STR Operators to Pay Fees and Taxes

Tourism often puts a strain on services. Collecting fees and taxes should be used to mitigate negative externalities of this activity. Fees, as mentioned briefly above, should cover the cost of administrator time and resources needed to regulate and enforce STRs as well as cover outreach activities. Transient lodging taxes should be levied in all communities using a rate that makes sense for the community (e.g. higher if there are too many STRs or lower if the community does not have sufficient lodging opportunities/wants to encourage STRs). There are also precedents for alleviating costs for lower-income households that may be impacted by these rates dissimilarly; for instance, a fee exemption or reduced fee rate. Higher fee rates for property owners with more than one STR in a single community may also help to disincentive "hotelization."[10]

How should planners and policy makers enforce short-term rentals?

While not all jurisdictions in Oregon have to deal with enforcement issues, those that do understand that enforcement of STR policies is difficult at best and traditional methods such as administrative citations, fines, revoking permits, or court mandates have only been slightly effective overall in curbing code evasion.

Still, opportunities for enforcement exist, however, they may not be in line with traditional best practices. For instance, while more time intensive, providing outreach to community members is one opportunity to ensure that residents and possible hosts understand their rights when it comes to STRs. Reaching out to community members about what existing regulatory frameworks are and what they are intended to accomplish can help inform residents and potential hosts of the standard operating procedures for the area. Teaching them of the negative externalities (specific to the community) may help with compliance. Additionally, with "community" and "trust" as cornerstones of the sharing economy, using these values to frame community discussions may also prove to be more effective than addressing this activity from a strictly legal and economic agenda. Outreach to educate operators about the hazards of being an absentee property owner and the danger of allowing visitors to stay longer than 30 consecutive days (e.g. risks visitors gaining tenant's rights) should also occur.

> "What's striking about the shared economy is not the technology that has made it possible, but the vast changes it has triggered in society." (Stan, 2016).

Using regional outreach methods may help ease administrative burden, especially in areas with smaller populations. Alternatively, local governments can offset some of this outreach onto property owners by requiring them to reach out to their neighbors before registering their STRs (e.g. potentially requesting neighbor approval or confirmation that hosts at least speak to their neighbors about their new venture). This option can give property owners and neighbors a chance to talk

[10] Recently, Paris triples its vacant home tax to 60% to mitigate artificial shortages in their housing stock. http://www.zerohedge.com/news/2017-03-07/vacant-homes-are-global-epidemic-and-paris-fighting-it-60-tax

about concerns before the opportunity for nuisances to occur arises. This will enable trust and transparency.

Along the lines of trust and transparency, the sharing economy has become effective at self-regulation. In general, web-based platforms that utilize customer review and rating systems can allow property owners to be more selective of who they let into their homes and neighborhoods. Again, educating hosts in some of the dangers that could occur through home-sharing may make the hosts more perceptive to these review/rating systems. Further, if these hosts have previously talked to their neighbors about their primary concerns, hosts will be able to read through potential visitor's reviews to better select individuals less likely to create the nuisances sure to annoy neighbors.

In summation, it is difficult for governments to regulate something they do not have complete control over. Using community members to encourage and expect appropriate use of STRs as well as educating STR operators on what is suitable can induce a culture of self-regulated compliance.

The Need for Continuous Evaluation

Not just a best practice but a necessity, jurisdictions should continue to monitor STRs in their community so that appropriate evaluation of their policies can occur. Particularly, many cities have found their regulations, or lack thereof, to be neither effective nor ineffective, which makes continued evaluation that much more important.

Potential opportunities to inaugurate monitoring and evaluation into existing administrative and planning activities includes: inventorying STRs when participating in buildable lands inventories or conducting housing needs assessments, considering STRs when developing regional plans or new master plans (particularly for downtowns and tourism-based districts), and incorporating STRs into relevant strategic plans (e.g. Travel Oregon) and state-wide tourism research. Further, using town halls, neighborhood association meetings, existing community newsletters, polls on governmental Facebook pages, and the like can streamline outreach activities just as easily as it can assist in gauging community perspectives about STRs. Longitudinal studies will be essential to truly gauge the effectiveness of STR policies.

Future Research

As other studies on the topic conclude, there is still much research needed regarding the topics of STRs and the sharing economy to understand their impact on communities and local economies. The following questions were unable to be addressed in this report but should be considered moving forward (see Table 3.3):

Table 3.3. Opportunities for Continued Study

Research Questions	Potential Method(s)	Potential Data Sources
Do short-term rentals affect the availability of long-term rentals, owner-occupied housing, or affordable housing? If so, to what extent?	Regression Analysis	American Community Survey and Housing Survey Data
Do short-term rentals affect property values or inflate rental costs?	Regression Analysis	American Community Survey and Housing Survey Data
What is the land use efficiency of short-term rentals vs. hotel/motel accomodations?	Geographic Information Systems; Static and Dynamic Analysis	Historical rates of land consumption, Residential and accomodation sector employment growth rates/trends of land utilization, Characteristics of land and tax lot information
In allowing STRs to support additional tourism, do the benefits derived from an increase in tourism outweigh the costs of increased tourism?	Cost-Benefit Analysis	Government spending and tax revenue; Economic, social, and environmental indicators
How can web-based, sharing economy businesses, governments, and community members collaborate in the response to short-term rentals?	Surveys, Interviews, Focus Groups	Residents, Businesses within the accomodation sector, Elected officials, Government representatives, Sharing economy platforms
How do community members perceive short-term rentals in their community?	Surveys (e.g. chi-square), Interviews, Focus Groups	Residents, Businesses within the accomodation sector, Elected officials
To what extent do community members value home-sharing? In what ways do values differ amongst various groups?	Surveys (e.g. chi-square), Interviews, Focus Groups	Residents and Community members
What are the motives of property owners who operate a short-term rental(s)? How do motives rank amongst each other?	Surveys, Interviews, Focus Groups	Short-term rental operators

Source: DiNatale, Sadie. (2017). Assessing and Responding to Short-Term Rentals in Oregon: Enabling the Benefits of the Sharing Economy.

Additionally, many survey responded indicated the following summarized tools would be helpful for them to better respond to STRs[11]:

- Construction of a model code or sample ordinance[12]
- Easier access to Transient Lodging Tax rolls to establish whether STRs exist in certain locations or are contributing taxes
- Access to housing data (e.g. spatial data of housing stock)
- Funding to amend land use codes

[11] Responding to Short-Term Rentals in Oregon Survey, n-Q24, 2017.
[12] Two potential sample codes are located here: http://stradvocacy.org/category/sample-ordinances/. Many cities in Oregon have also adopted codes that could be used as a resource. When developing code language, looking at samples from a range of comparable jurisdictions is important.

Chapter 4: Policy Recommendations

The purpose of this chapter is not to recommend a precise recipe for how various communities should manage STRs; this would be inefficient given all the nuances between cities. Rather, this chapter presents general recommendations for cities (with populations less than 100,000), regions, and Oregon. Lastly, delineated in a typology (based-off previously cited best practice) are specific regulatory options that communities can consider.

Regulatory Recommendations

The following sections break recommendations into minimum requirements and ancillary requirements for cities. Next, I provide recommendations for regions and the State.

Minimum Regulatory Recommendations for All Cities

Whether a city has STRs or not, communities should establish the following regulations, even as a precautionary measure:

1. Legally define STRs as "short-term rentals" and establish a fair frequency of use standard that is complimentary of regional standards.

2. Codify regulations in local ordinance. Impose a guest capacity limit and require inspections.

3. Levy a transient lodging tax (if not imposed at the county level).

4. Require that STR operators register their unit(s) on an annual basis.

Ancillary Regulatory Recommendation with Thresholds for Cities

Variations in number and concentration of STRs should influence policy choices. The following recommendations provide thresholds for ancillary regulations as a starting point. In that, thresholds may vary between communities.

1. Restrict (cap/limit) STRs or incentivize moderate use if STRs account for more than 4% of total housing stock.

2. Impose a clause that revokes a STR permit for properties that receive more than five nuisance complaints in a calendar year.

3. Limit STRs in proximity to other STRs (deconcentrate) when city-wide/area-specific nuisance complaints exceed 25 complaints in a calendar year. Communities should establish a fair distance (e.g. 50 to 200 feet buffer between STRs), weigh equity implications, and re-evaluate buffer distance every two to five years.

    a. Before establishing a buffer distance, cities should increase regulatory standards and evaluate whether nuisance complaints reduce (e.g. establishing minimum parking standards may mitigate parking complaints).

Recommendations for Counties and Regions

Smaller jurisdictions may have difficulties managing STRs. That said, counties/regions should help facilitate proper management of STRs.

1. Levy a transient lodging tax at the county level if barriers exist for cities to impose their own (due to population size, low prevalence of STRs in individual communities, administrative limitations, etc.).

2. Establish a regional representative or liaison to attend Sharing Economy Committee meetings (see first "Recommendation for Oregon"). Regional liaisons should represent multiple counties.

Recommendations for Oregon

Oregon can and should become a leader in the management of STRs. This will require the state to become a leader in sharing economy affairs.

1. Establish a Sharing Economy Committee to facilitate research on the sharing economy generally (to include analysis of STR trends) and to assist communities across the state deal with new issues. The objective of this committee should be one in support of sharing economy activities.

2. Hire a state employee to work directly in sharing economy affairs. Responsibilities should include:
    - Analyze sharing economy trends across the state, country, and globe
    - Communicate initiatives, information, and best practices to governments across the state
    - Provide government assistance in STR management
    - Collaborate with sharing-economy platforms
    - Collect data
    - Participate in global sharing economy networks
    - Coordinate state Sharing Economy Committee meetings, trainings, and workshops
    - Launch policy demonstration studies to pilot regulatory frameworks and options

3. Maintain a neutral Transient Lodging Tax at 1.8% to allow regions and cities to use their tax rates to manage STR growth.

4. Establish a pool of funding to help small communities amend land use ordinances for STRs.

Legislative Approaches: A Typology for Smaller Jurisdictions

The following policy options represent common legislative approaches for smaller jurisdictions. Communities must consider the viability of each approach/regulatory option within context of their community. A community may adopt some or none of these options. "Grade," intends to provide a starting point for a community conversation around equitability of regulatory frameworks. Communities are encouraged to develop their own metrics or expand the following.

Table 4.1. Legislation Approaches and Regulatory Options

Legislative Approaches	Regulatory Options	Equity Consideration	Grade
Definitions	**Terms**	-	-
	Vacation Rental	Not an all-encompassing term; assumes use is tourism-based only.	Poor
	Transient Rental	Inclusive term.	Good
	Short-Term Rental	More inclusive term and observed globally.	Best
	Frequency of Use	-	-
	Unspecified	Not specifying the number of days STRs can be reserved for could create hotelization.	Poor to Adequate
	Less than 183 days in a calendar year; Less than 30 consecutive days	For communities unchallenged by housing availability, the use of second homes as STRs may be acceptable, for others, this could create artificial housing supply constraints.	Adequate
	Less than 90 days in a calendar year; Less than 30 consecutive days	Allowing STRs to be reserved for a total of 3 months in a calendar year enables property owners who may travel (or function with a more nomadic lifestyle) to get better use out of their primary properties while away.	Good
	Less than 30 days in a calendar year	More commonly used by local governments as a way to balance the benefits and negative externalities of STRs while continuing to learn from and evolve with the sharing economy.	Good
	Listing Types	-	-
	Accessory/Secondary Dwelling	Allowing STRs in ADUs can allow property owners to use their lots more efficiently. However, for communities with housing supply constraints, this may inhibit long-term housing options.	Adequate
	Entire House/Apartment	STRs as entire homes and apartments are efficient but frequent use could generate artificial housing shortages in some communities.	Good
	Shared/Private Room	Enabling STRs as shared/private rooms can make it easier for property owners to use their excess space.	Best

Legislative Approaches	Regulatory Options	Equity Consideration	Grade
Restrictive Zoning	**Cap/Limit**	-	-
	STRs in Proximity to Another	Mitigate nuisance issues and ensures certain areas of a community does not become overrun by STRs.	Good
	the Number of STRs in a City	Limiting STRs allows benefits to be reaped and greater flexibility. Using a lottery system or waiting list can promote fairness.	Good
	the Number of STRs in a Neighborhood or District	Allows for more accurate and fair management of STRs in areas that are more heavily influenced by STRs than others. Using a lottery system or waiting list can promote fairness.	Good
	Rentals per Property Owner	Reduces threat of hotelization in neighborhoods and better ensures an adequate supply of housing for residents.	Best
	Land Use Classes	-	-
	Banning Outright	Banning outright will likely lead to policy evasion and missing out on the many benefits the sharing economy brings.	Poor
	Permit Outright	Many communities may find it acceptable to allow STRs outright as long as appropriate regulatory standards mitigate concerns and promote fairness.	Good
	Permit in Some Districts/Zones	Being selective of where STRs are able to locate is important for most communities where STRs are creating issues. A cost-benefit analysis weighing the benefits/drawbacks of sharing economy activities in various areas is necessary to make informed decisions on behalf of the entire community.	Best
Incentive-Based Provisions	**Higher Fee Rate**	-	-
	for Second Permit or More	Making STR operators pay higher rates for STR permits, after their initial permit, can discourage property owners from operating more than one STR in a given community.	Good
	Reduced Fee Rate	-	-
	Property Owner's Primary Residence	Allowing reduced fares for STRs in operator's primary home can discourage people from purchasing residential units solely for the purpose of operating STRs.	Best
	Fee Exemptions	-	-
	for Hardship	Exempting residents experiencing financial hardship from fee requirements can ensure that lower-income residents can still operate a STR legally to earn extra income, if they want.	Best
	Use for less than 10 days in calendar year	Exempting operators from permit fees who operate STRs infrequently can ensure residents are not financially discouraged from use their properties more efficiently.	Best

Legislative Approaches	Regulatory Options	Equity Consideration	Grade
Permitting	Conditional Use Permit	High rates of standard conditional use permits may reduce STRs financial viability discouraging use, which may or may not be the intention. For moderate users this may induce concerns over fairness.	Adequate to Good
	Business License	Requiring STR operators to get a business license can streamline administrative efforts.	Good
	Short-Term Rental License	A separate license, specifically for short-term rentals, may allow more flexibility in treating this activity and in setting fee rates at more appropriate levels.	Best
Taxation	No Transient Lodging Tax	For some communities, levying a TLT may discourage STRs in areas where STRs' other benefits of STRs may outweigh the additional fiscal revenue.	Poor to Adequate
	Transient Lodging Tax Imposed by County	Counties where aggregated STRs in each city are too low to be administratively efficient to levy at a city level, may benefit from a tax levied at a regional level. Imposing a transient tax maintains fairness across the accommodation sector.	Good
	Transient Lodging Tax Imposed by City	Tourists put a strain on city services and cities should levy a tax to offset financial burden on residents. Imposing a transient tax maintains fairness across the accommodation sector.	Good
Registration	No Registration	Not requiring STRs to register may have long-term effects on the character of neighborhoods, on housing availability or affordability, and may make enforcement more difficult.	Poor
	Renewal Every 3 to 5 Years	Ensures process is not overly burdensome but less frequent monitoring may create opportunities for policy evasion and neighborhood nuisances.	Adequate
	Annual Renewal	Most appropriate way to track STRs on a regular basis.	Good
Review Processes	No Review Process	Not having any kind of review process may negatively influence the health, safety, or wellbeing of residents or the character of neighborhoods.	Poor
	Site/Design Review	While necessary depending on other regulatory options selected (e.g. conditional use permit) for other communities, a site/design review process may be overly burdensome to both staff and potential STR operators.	Adequate to Good
	Neighbor Consent	Some form of consent process with neighbors (not official hearing) can improve neighborhood relationships and increase transparency. Some nuisance issues may be mitigated with open dialogue.	Good
	Performance/Behavior Measures	Policies that revoke STR privileges for nuisance issues or complaints is a useful clause to ensure neighbors are not negatively impacted by STRs in nearby properties.	Good
	Health, Fire, Building Inspections	More of a necessity, there should be some checks and balances to ensure that STR properties are up to code, ensuring the safety of visitors.	Best

Legislative Approaches	Regulatory Options	Equity Consideration	Grade
Standards	Minimum Parking Requirements	Requiring that STR operators adhere to parking requirements may mitigate nuisance issues in some areas or be unnecessary and overly burdensome in others.	Poor to Adequate
	Vehicle Limits	Limiting guest vehicles can mitigate neighborhood concerns and nuisance issues.	Good
	Minimum Aesthetic Code Requirements	Some aesthetic requirements (e.g. limiting signage) can mitigate degradation of neighborhood character in primarily residential areas.	Good
	Proof of Owner-Occupancy	Requiring a property owner to use their property for a certain number of days out of a calendar year can discourage absentee property owners and hotelization.	Best
	Guest Capacity	Maintaining a guest capacity at level of family/household can mitigate nuisance issues and ensure that STRs in traditionally, residential areas are not overly disruptive to the existing character of neighborhoods.	Best

Source: Information was derived from Appendix A and B of this report as well as from the Responding to Short-Term Rentals in Oregon Survey.

Appendix A: Literature Review

This chapter organizes findings of existing studies and current literature on the topic of short-term rentals.

Impact of Short-Term Rentals

STRs are understood to impact, or potentially impact the cost and availability of housing, local economies, and the sharing economy generally.

Impact on Housing

A scan of applicable literature quickly returns results of short-term rentals (STRs) impact on housing. First however, most reports comment on the fact that there are very clear limitations in the availability of data to fully understand the impact STRs have on housing markets or housing stock (ECONorthwest 2016, Rees Consulting 2016, and accessorydwellings.org 2016). Speculation and inherent assumptions are widespread, though, academics and practitioners are eager to learn about the true effects. Being that there is no standard or agreed upon definition for STRs, the ability to draw clear conclusions on causality across space becomes especially difficult (ECONorthwest, 2016).

In a study that analyzed the impact that HomeAway rentals had in Seattle, it was found that STRs did not have a significant impact on home values, that properties were generally not on the STR market for long, and that STRs were generally located in traditionally higher income areas (ECONorthwest 2016). Yet, in a study of STRs in New York City and New Orleans, STRs were associated with increased property values (Sheppard, et al. 2016 and Kindel, et al. 2016).Thus, we can conclude that STRs' impact on housing will differ between geographic regions and local economy types.

Some reports looked at the impact STRs had on specific housing types. In a white paper looking at four cities in Colorado, with populations under 7,000, it was found that STRs did lead to the reduction of homes and bedrooms previously used by employees increasing the demand for workforce housing and reducing its supply (Rees Consulting 2016). Another analysis showed that in Portland, banning short-term accessory dwelling unit rentals did not increase long-term accessory dwelling rentals (accessorydwellings.org 2016).

Economic Impacts

Impacts to the Government and Local Economies: Short-term rentals have the potentially to positively affect municipalities through production of fiscal revenue. In a report assessing the impact of STRs in San Diego, Los Angeles, Monterey County, Santa Barbara, and St. Joseph (Michigan) it was found that taxing the STR industry generates substantial revenue for the municipality and it does support job growth (NUSI 2015; TXP, Inc. 2014; and TXP, Inc. 2015). In addition, literature attests that "with proper regulation and enforcement, citizens and communities can benefit from the increased tourism" that short-term rentals bring (Binzer, 2017).

Impacts to Short-Term Rental Hosts: A primary reason property owners operate STRs is the income operators' can earn. Still, in a study of HomeAway rentals in Seattle, ECONorthwest found that STRs did not generate significant incomes for owners (2016) —potentially unveiling other value-drivers for operating STRs beside purely economic gains. For instance, social and sustainability benefits may

also motivate property owners to continue operating these rentals. Nevertheless, in an assessment of Airbnb hosts, it was found that the annual expected profit is approximately $20,000, but "'hands-off' Airbnb hosts can expect occupancy rates (and revenue) at least 15% lower" than more involved hosts (Wallace, 2016).

Impacts to Businesses within the Accommodation Sector: Despite localized economic benefits, the STR industry can disrupt formal industries in the accommodation sector by attracting visitors away from conventional lodging and accommodation companies (Guttentag 2013, Fang 2015). This disruption becomes exacerbated in that many STRs marketed through web-based platforms are often illegal (e.g. being operated without a license/permit, without paying proper taxes/fees, or without having proper inspections). This gives traditional, regulated lodging businesses an economic disadvantage (Guttentag 2013). Continued studies evaluating occupancy rates, revenues per available room, rates of use and rental price, estimated non-lodging spending from short-term renters, and estimates on potential revenue earnings for municipalities will assist in the development of knowledge in this area (NUSI 2015).

Impact on Sharing Economy

STRs often operate by property owners leasing their unused space to tourists and visitors. We characterize activities as sharing economy activities when they use a distribution process to balance the availability of resources and needs of consumers (Daunoriene, et al. 2015). The ways in which STRs influence the sharing economy is still open to interpretation however. I speculate that growth of STRs offered through web-based platforms indicates that there is at least additional capacity in existing housing stock and that these property owners are willing to share their excess space in exchange for monetary compensation (Ellen 2015). Outside of this reality, debate about whether home sharing, through web-based platforms, negatively or positively influences the sharing economy finds a range of perspectives.

In theoretical debates, policy makers have considered adapting the Airbnb home-sharing model to house lower income individuals as a new form of housing assistance (Ellen 2015). The idea that people are interested in providing access to their space to strangers, initiates the conversation that sharing economy activities can be operated in many capacities (outside of corporate co-options), providing different social and economic benefits therein (Martin 2015). STR hosts can also reap economic benefits by participating in the sharing economy, reinforcing their desire to participate in that economy. Specifically, hosts can distribute their assets to supplement their income which has the added benefit of materializing the collaborative use of resources (Lazarouiu 2014, Daunoriene, et al. 2015). Social impacts are realized from public relations perspectives in which, the incremental shift towards home-sharing "has engendered visions of renewed forms of collective urban life" involving sustainability, symbolic interaction, and communication that empowers trust (Gregory et al. 2016).

Other perspectives debate how STRs and home-sharing through web-based platforms bring detrimental impacts on the sharing economy, or at least diminish its reputation. For instance, intermediary businesses that "provide the infrastructure necessary to sustain the sharing community" (Gregory et al. 2016) often enables, or intensifies, the evasion of local laws and regulations (Interian 2016). These businesses can also displace companies that are regulated, and often, do not hold themselves accountable to the negative externalities their business models can create (Interian 2016).

Summary of Impacts of Short-Term Rentals

There is limited data on the impact that short-term rentals have on governments and local economies, hosts and residents, and accommodation sector businesses. Certainly, however, positive and negative impacts will vary across space and time (particularly in regards to housing supply and affordability). Additionally, STRs have and will likely continue to disrupt traditional, lodging options but likely will not replace these businesses altogether. In general, there are also mixed perceptions about how home sharing will affect the sharing economy at large which has created a dichotomy around the topic (expected to remain until more research can occur).

Short-Term Rental Policy

This section first discusses STR policy frameworks and the impact they can have.

Policy Approaches

Integrating STRs into the formal sector through regulations and enforcement has been cited as an important next step to correct some of the negative impacts of STRs (Guttentag 2013). However, policy makers continue to grapple with the rationales, process, and practices of how to best regulate STRs. In a time of economic recession, many wonder if it is beneficial to regulate the STR market at all—in the chance it inhibits homeowners from making ends meet on their mortgages or housing payments (Gottlieb 2013). In general, however, the literature seems to agree on the fact that STRs should be regulated in some fashion, the extent to which is unclear and controversial (Gottlieb 2013, Goodman 2016, and Hood River County 2016).

There appears to be no best way to regulate the STR market that fits the needs of all communities across space. One report suggested a three-part solution:

1. Launch a standard of safety and accountability (strengthening nuisance laws, ensuring hosts have appropriate insurance, etc.);
2. Move past a yes or no debate on short-term rentals (consider the nuances of individual communities and tailor regulations to those nuances); and
3. Enforce what is on the ground and online (to cut down on opportunities to evade laws) (Goodman 2016). Another report articulated several alternatives: develop public nuisance abatement ordinances, ban short-term rentals outright, enact time restrictions (i.e. allowing short-term rentals for a period of 30 days or less), or enact performance based standards (Gottlieb 2013).

The American Planning Association suggests that jurisdictions require licenses, fees and taxes, and insurance; they also suggest consistency with their land use controls and to determine whether inspections are necessary (Sullivan, 2017). In a guidebook on the equitable regulation of short-term rentals, suggestions include clear definitions, active record keeping, protections for housing (supply and affordability), protections for guests, procedures for oversight, protections for neighborhood preservation, and imposition of taxes (Sustainable Economies Law Center 2016). Others argue that STRs, as part of the sharing economy, need special or "innovative" regulatory treatments "precisely because the business model is so new" (Katz 2015).

Transient Lodging Tax

Transient lodging taxes (TLT) are a local option tax levied on lodging facilities (hotels, motels, bed and breakfasts, etc.). While all jurisdictions do not levy a tax of this kind, "taxing tourism is an appealing option for governments facing budgetary constraints and pressures to decrease reliance on a variety of taxes" (Gooroochurn and Sinclair 2005). For instance, taxes levied to hotels offset burden onto tourists, which is especially advantageous in areas with "superior or unique natural resources" as to "capture the 'rent' of these resources through taxation" (Oakland and Testa n.d.).

TLTs, and other tourism taxes, are further considered efficient relative to taxing other sectors (Gooroochurn and Sinclair 2005). TLTs are useful to discourage certain businesses, curb negative impacts of certain businesses, or improve fairness (recover service costs from those who benefit from those services) (Oakland and Testa n.d.).

Policy Impacts

Pros and cons exist for all routes and systems of regulation. Overarchingly, we are not fully aware of the impacts alternate policies will have on residents, the local economy, or housing in the long-term. In jurisdictions where STR policies are already established, we still lack a complete awareness on the affect short-term rentals have on residents (Hood River County 2016). Accordingly, because the regulation of STR could affects community members differently, developing policies becomes a challenge and a discussion of equitability. Thus, communities "should arrive at an appropriate and equitable policy through open dialogue with the diversity of stakeholders involved" (Sustainable Economies Law Center 2016).

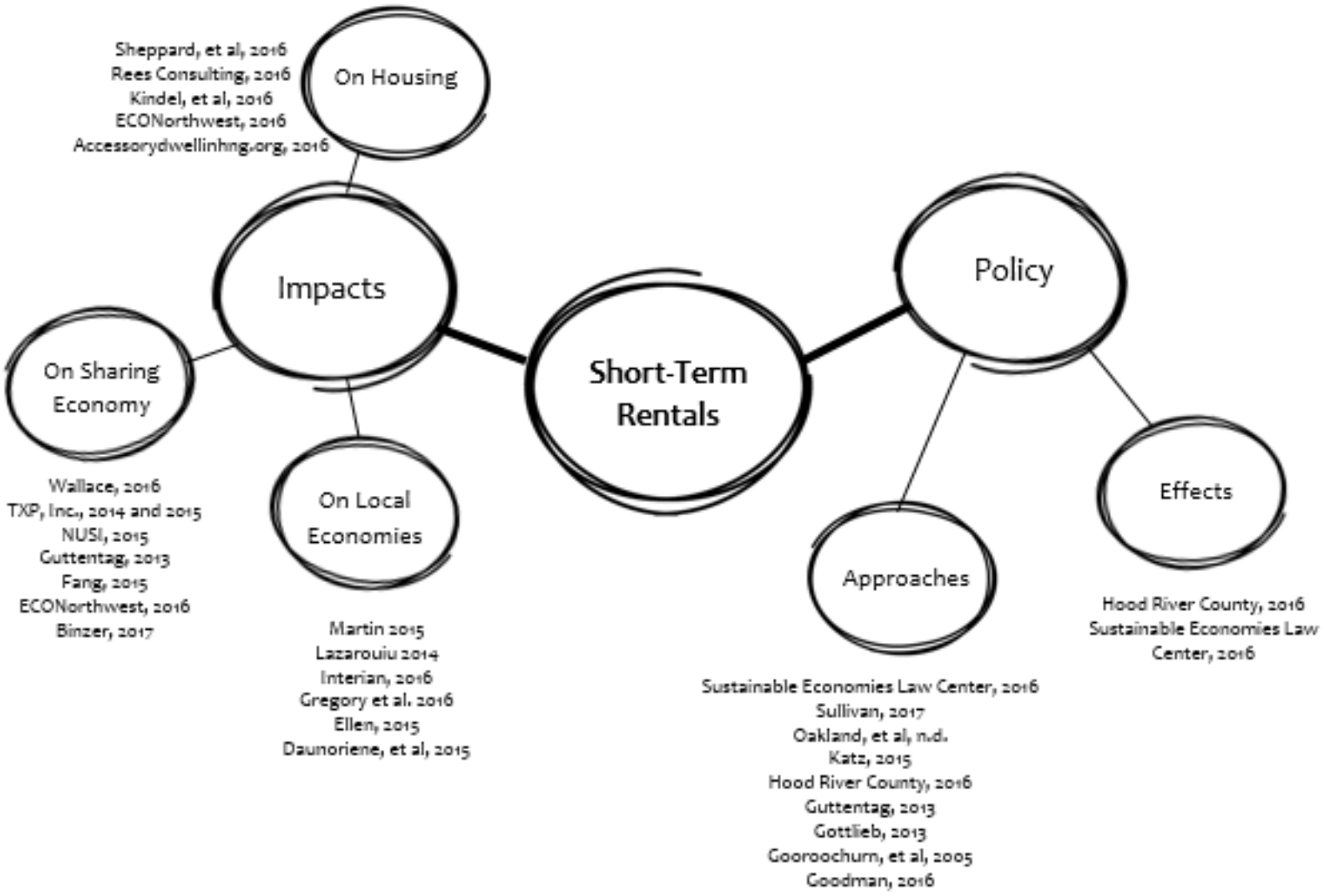
Summary of Impacts of Policy and Regulation

The establishment of policies for STRs in communities across the country is relatively new. Policies imposed can and likely will disproportionally affect residents. Thus, it is important to establish rules in accordance with best practices and community conversations. As a follow-up to regulations imposed, communities should evaluation the impact their policies have had on residents, neighborhoods, the economy, and housing. Communities should modify policies when deemed necessary.

Summary

Short-term rentals refer to housing units leased or rented for less than 30 days. It is an arrangement that involves the trade of the temporary, but not future use, of a full or partial housing unit (Flath 1980). STRs can provide benefits and/or costs to communities (which will vary across time and space), but appropriate regulations can manage these impacts. The concept map on the following page visually displays the connection between STR subtopics.

Concept Map


Sheppard, et al, 2016
Rees Consulting, 2016
Kindel, et al, 2016
ECONorthwest, 2016
Accessorydwellinhng.org, 2016
On Housing
Impacts
On Sharing Economy
Wallace, 2016
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Ellen, 2015
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Short-Term Rentals
Policy
Approaches
Sustainable Economies Law Center, 2016
Sullivan, 2017
Oakland, et al, n.d.
Katz, 2015
Hood River County, 2016
Guttentag, 2013
Gottlieb, 2013
Gooroochurn, et al, 2005
Goodman, 2016
Effects
Hood River County, 2016
Sustainable Economies Law Center, 2016

Appendix B: Case Studies

This appendix conveys key findings on 10 Oregon cities, selected as case studies (see Table C.1). Case studies are used to delve into the details of STRS in smaller cities (cities with <100,000 people).

Table B.1. Selected Case Studies with Descriptors, 2015

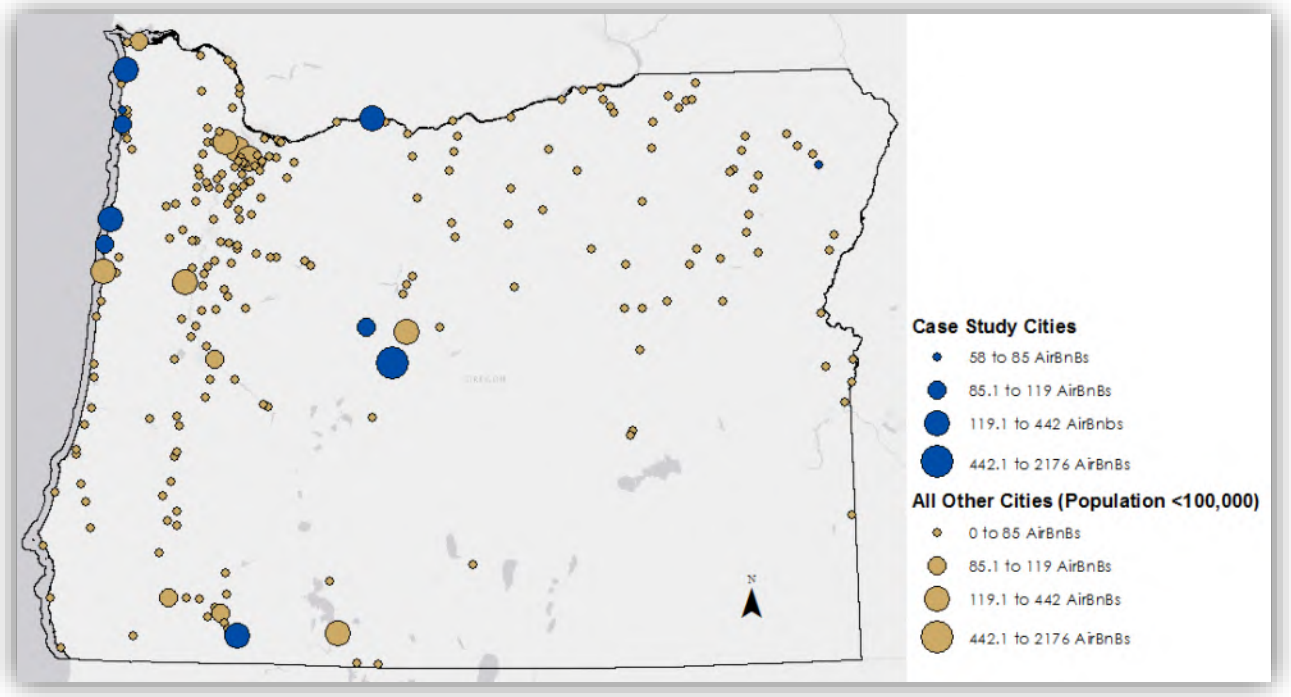
Case Studies	Total Population	City Size Class	City Size Class Legend	Region	Coastal City
Manzanita	426	1	Less than 1,000	North Coast	Yes
Joseph	1,053	2	1,000 to 5,000	Northeast Oregon	No
Rockaway Beach	1,227	2	1,000 to 5,000	North Coast	Yes
Depoe Bay	1,877	2	1,000 to 5,000	North Coast	Yes
Sisters	2,596	2	1,000 to 5,000	Central Oregon	No
Seaside	6,483	3	5,001 to 20,000	North Coast	Yes
Hood River	7,412	3	5,001 to 20,000	Central Oregon	No
Lincoln City	8,386	3	5,001 to 20,000	North Coast	Yes
Ashland	29,556	4	20,0001 to 50,000	Southern Oregon	No
Bend	81,780	5	50,001 to 100,000	Central Oregon	No
Total	**140,796**	-	-	-	-

Source: Population was derived from the American Community Survey, 5-year estimates 2011-2015.

Case studies were chosen as they possess 1) higher levels of Airbnbs (total number) as compared to other Oregon cities and/or 2) they possess a high percentage of Airbnbs as compared to the community's total housing units. All case studies rank within the top 25 cities in either of those two categories; most case studies (except Ashland and Joseph) rank within the top 25 cities of both categories.

The case studies chosen represent 49% of the Airbnbs in cities under 100,000 and 22% of the Airbnbs in all Oregon cities. These 10 cities generate approximately $54.8 million annually which is 66% of all revenue generated from Airbnbs in cities under 100,000 and 35% of the revenue generated from Airbnbs in all Oregon cities.

Map B.2. Number of Airbnb's by City using Proportional Symbols



Source: AirDnA. Property Data, Retrieved 2017. Oregon Spatial Data. *This map excludes cities with populations greater than 100,000 (Portland, Eugene, Salem, and Gresham). Cities are only showcased in this map that have at least one Airbnb short-term rental.*

Summary Facts

Our case study cities are highly influenced by STRs.

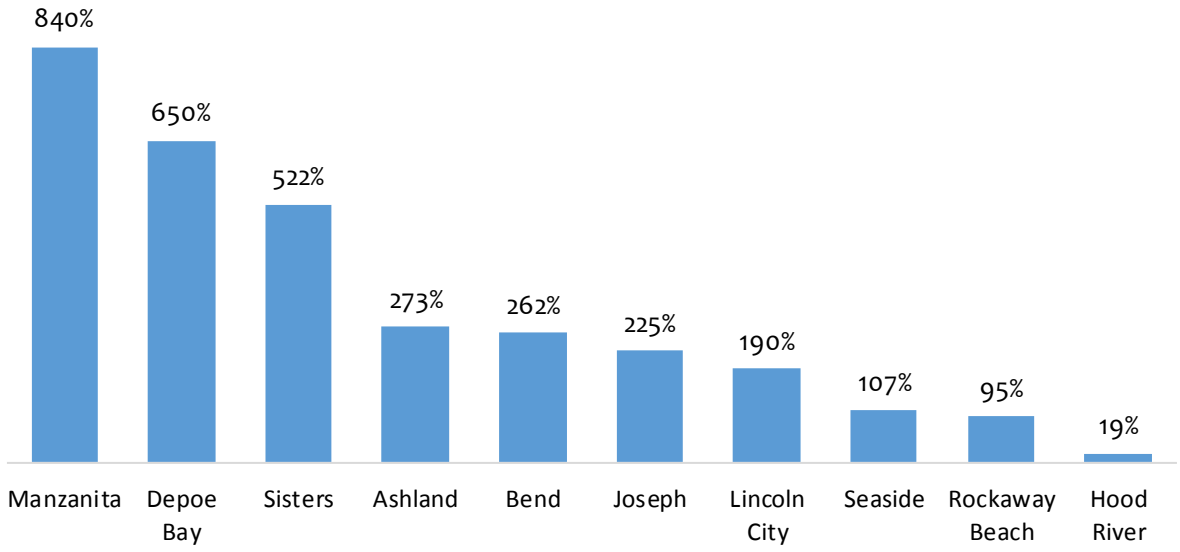
Table B.3. Quick Facts, 2011-2015 Estimates

Case Studies	Population (2015)	Total Housing Units (2015)	Median Household Income (2015)	AirBnBs as % of Total Housing
Ashland	20,556	10,372	$ 45,704	3%
Bend	81,780	36,579	$ 52,989	6%
Depoe Bay	1,877	1,469	$ 46,853	8%
Hood River	7,412	3,504	$ 47,310	9%
Joseph	1,053	595	$ 37,216	10%
Lincoln City	8,386	6,439	$ 37,894	5%
Manzanita	426	1,263	$ 51,429	7%
Rockaway Beach	1,227	2,105	$ 37,227	5%
Seaside	6,483	4,602	$ 37,887	10%
Sisters	2,596	1,331	$ 50,324	8%

Source: American Community Survey, 2011-2015. AirDnA Property Data, 2017.

Newly created STRs in our case study cities continues to grow. Future, longitudinal studies will helpful to understand how recent policies effect the amount of STRs entering the market in these communities.

Figure B.4. Percent Change of Newly Created Short-Term Rentals, 2014 to 2016



Source: AirDnA Property Data, Retrieved 2017.

In the following case study cities, STR growth is increasing at a faster rate than total housing units are. In some of these communities, household formation is also increasing at a faster rate than the construction of new housing units, indicating housing supply constraints (Bend, Depoe Bay, Joseph, and Manzanita).

Table B.5. Indication of Possible Housing Supply Constraints

Cities in Oregon	Household Formations			Vacation/Seasonal/ Occasional Use Housing Vacancy			Housing Units			Short-Term Rentals		
	2010	2015	Change	2010	2015	Change	2010	2015	Change	2014	2015	Change
Ashland	9,339	9,446	1%	291	317	9%	10,230	10,372	1%	76	127	67%
Bend	31,596	33,396	6%	1,224	1,414	16%	35,610	36,579	3%	434	1,066	146%
Depoe Bay	618	870	41%	431	446	3%	1,125	1,469	31%	22	66	200%
Hood River	2,764	3,005	9%	247	313	27%	3,214	3,504	9%	127	232	83%
Joseph	435	533	23%	70	40	-43%	556	595	7%	6	45	650%
Lincoln City	3,831	3,876	1%	1,432	2,138	49%	5,731	6,439	12%	125	191	53%
Manzanita	207	200	-3%	1,062	993	-6%	1,320	1,263	-4%	15	36	140%
Rockaway Beach	670	565	-16%	1,026	1,387	35%	1,750	2,105	20%	39	65	67%
Seaside	2,839	2,897	2%	1,221	920	-25%	4,428	4,602	4%	134	255	90%
Sisters	765	949	24%	46	187	307%	956	1,331	39%	17	48	182%
Total	**53,064**	**55,737**	**5%**	**9,060**	**10,170**	**12%**	**64,920**	**68,259**	**5%**	**995**	**2,131**	**114%**

Source: AirDnA Property Data. Retrieved 2017. U.S. Census, American Community Survey, 2010 and 2015.

The following table shows that in some situations, property owners can generate more annual revenue off STRs than they could off standard long-term rental units. This suggests that in resort communities, there may be more of a motive for property owners to operate STRs.

Table B.6. Indication of Competition between Short and Long-Term Housing

Cities in Oregon	Average Annual Revenue (STRs)	Max of Annnual Revenue (STRs)	Average Annualized Rent (ACS)	Average Annualized Mortgage (ACS)
Ashland	$8,309	$59,876	$12,456	$20,208
Bend	$14,801	$157,773	$12,972	$18,648
Depoe Bay	$13,866	$59,288	$12,264	$18,636
Hood River	$7,537	$81,215	$13,488	$20,016
Joseph	$17,176	$64,836	$7,980	$14,232
Lincoln City	$12,265	$117,250	$10,080	$18,804
Manzanita	$16,105	$90,051	$10,548	$24,432
Rockaway Beach	$15,925	$98,481	$8,316	$14,556
Seaside	$16,285	$198,425	$10,704	$19,356
Sisters	$9,196	$48,000	$12,312	$19,068
Total	**$13,662**	**$198,425**	**$11,112**	**$18,796**

Source: AirDnA Property Data, Retrieved 2017. U.S. Census, American Community Survey, 2010 and 2015.

Table B.7. Airbnbs Organized by Listing Type and Days Reserved

	Entire home/apt	Private room	Shared room	Total
Ashland	**180**	**79**	**1**	**260**
Less than 30 Days	34%	21%	0.4%	55%
30 to 90 Days	13%	4%	-	17%
91 to 180 Days	17%	5%	-	22%
181 Days or More	6%	1%	-	7%
Bend	**1,765**	**407**	**4**	**2,176**
Less than 30 Days	35%	9%	0.1%	45%
30 to 90 Days	29%	5%	0.0%	34%
91 to 180 Days	13%	3%	0.0%	16%
181 Days or More	4%	2%	-	6%
Depoe Bay	**113**	**6**	**-**	**119**
Less than 30 Days	48%	4%	-	52%
30 to 90 Days	24%	-	-	24%
91 to 180 Days	20%	1%	-	21%
181 Days or More	3%	-	-	3%
Hood River	**211**	**99**	**12**	**322**
Less than 30 Days	32%	17%	4%	52%
30 to 90 Days	19%	6%	-	25%
91 to 180 Days	11%	7%	-	17%
181 Days or More	4%	1%	-	5%
Joseph	**51**	**6**	**1**	**58**
Less than 30 Days	17%	3%	-	21%
30 to 90 Days	34%	3%	-	38%
91 to 180 Days	29%	3%	2%	34%
181 Days or More	7%	-	-	7%
Lincoln City	**319**	**19**	**-**	**338**
Less than 30 Days	49%	2%	-	51%
30 to 90 Days	26%	1%	-	27%
91 to 180 Days	17%	2%	-	19%
181 Days or More	2%	1%	-	3%
Manzanita	**77**	**8**	**-**	**85**
Less than 30 Days	38%	5%	-	42%
30 to 90 Days	29%	5%	-	34%
91 to 180 Days	20%	-	-	20%
181 Days or More	4%	-	-	4%
Rockaway Beach	**99**	**6**	**1**	**106**
Less than 30 Days	34%	2%	1%	37%
30 to 90 Days	24%	1%	-	25%
91 to 180 Days	28%	2%	-	30%
181 Days or More	8%	1%	-	8%
Seaside	**393**	**46**	**3**	**442**
Less than 30 Days	40%	6%	-	46%
30 to 90 Days	26%	3%	0.2%	29%
91 to 180 Days	16%	1%	0.5%	18%
181 Days or More	7%	0%	-	7%
Sisters	**78**	**29**	**-**	**107**
Less than 30 Days	33%	15%	-	48%
30 to 90 Days	23%	8%	-	32%
91 to 180 Days	15%	3%	-	18%
181 Days or More	2%	1%	-	3%
Total	**3,286**	**705**	**22**	**4,013**

Legislative Approaches

Table c.4. Case Study City Legislative Approaches

Case Study	Defined	Adopted	Requirements & Standards	Indication of Effectiveness	Ordinance Link
Ashland	Travelers' Accommodations (TA) or Accessory Travelers' Accommodations (ATA), for one or more occasions for a period less than 30 consecutive days	2015	TA and ATA Requirements: Conditional Use Permit; Subject to Site Design Review; Subject to inspection by fire department and Jackson County Health Department; City business license; Register for and pay transient occupancy tax TA Standards: Located within 200 feet of boulevard, avenue, or neighborhood collector; Property must be primary residence of the business-owner or person entered into a lease agreement with the property owner permitting use of property for the accommodation; Primary resident on site must be 20 years old; Minimum lot and GSF standards; Parking standard (one off-street parking space per accommodation and business-owner's unit must have two parking spaces) ATA Standards: Limit to one accommodation unit per property (no more than two bedrooms with two people per room); No signs; Property must have two off-street parking spaces; Guest vehicles must not exceed one; Meals and kitchen cooking facilities are not permitted	Somewhat Effective	http://www.ashland.or.us/SIB/files/AMC_Chpt_18_current.pdf (Section 18.2.3.220)
Bend	Use of a dwelling unit by any person or group of persons entitled to occupy for rent for a period of less than 30 consecutive days	2006, Updated 2015	Short term rental permit, Subject to review dependent on location and days available; Annual operation license; Concentration limits (250 feet between properties); Less than 30 days and owner-occupied allows exemption from concentration limits; Occupancy limited to two persons per bedroom plus two additional people; One parking space per bedroom; Subject to inspection	Very Effective to Somewhat Effective	http://www.codepublishing.com/OR/Bend/ (Section 3.6.500)
Depoe Bay	Less than 30 successive calendar days	-	Prohibited except as permitted under the zoning code; 8% Transient Room Tax, City business license; Registration; Four year amortized period	-	http://www.cityofdepoebay.org/pdf/ordinances/zoning24codifiedNov2011.pdf (Section 4.650)

Case Study	Defined	Adopted	Requirements & Standards	Indication of Effectiveness	Ordinance Link
Hood River	Transient Rental: a dwelling unit or room(s) rented for compensation on less than a month-to-month basis	2016	3% transient room tax; Short-term rental operating license; Maximum occupancy two persons per bedroom plus two additional persons; One off-street parking space for every two bedrooms; Dwelling must be primary residence of the property owner	Too Soon to Tell	http://ci.hood-river.or.us/pageview.aspx?id=20524 (Section 17.04.115)
Joseph	Travelers accomodation: any primary resdience, which is not a hotel or motel, having rooms, apartments or sleeping facilities rented or kept for rent on a daily or weekly basis to travelers or transients for a fee; Occupancy for less than 30 days	2016	3% transient lodging tax; Licence and/or permit; Facility is subject to review during first three years of operation after which time a permanent permit for the facility as accredited travelers' accomodation will be issued; One off-street parking space with owner's unit having two spaces; One sign of six sf maximum with no more than 150 watts of illumination; Annual inspection by the County Health Department	Somewhat Ineffective	https://drive.google.com/file/d/0B6NlSJIjv4gad3NoR3BHTjlZODg/edit
Lincoln City	Vacation rental dwelling: a dwelling unit that is used, rented or occupied on a daily or weekly basis, or is available for use, rent, or occupancy on a daily or weekly basis, or is advertised, or listed by an agent, as available for use, rent, or occupancy on a daily or weekly basis.	Initially in 1996, updated 2016	$350 land use approval application fee, plus $100 license fee, plus $150 occupational tax permit; Transient lodging tax at 9.5% of rental charge	Somewhat Effective	http://www.codepublishing.com/OR/LincolnCity/ (section 17.80.050, and at Chapter 5.1), amendments are found at http://www.lincolncity.org/index.asp?SEC=55A859F7-5E25-4659-B7BE-B0445F128F08&Type=B_BASIC in Ordinances 2016-14, 2016-20, and 2016-26
Manzanita	Short Term Rental: A dwelling unit that is rented for a period not to exceed 29 days.	1994; current policies adopted 2010, amended 2016	$250 permit (annual), 9% transient room tax; Advertisement must contain licensing number; Subject to inspection and periodic reinspection; Some areas subject to cap; Off-street parking for two vehicles; Signage no larger than 90 square inches; Occupancy capacity of two persons per sleeping room plus an additional four persons	Somewhat Ineffective	http://www.ci.manzanita.or.us/_docs/ordinances/STR/Ordinance%2010%2003%20STR%20regulations%20amend%2016%2005%20120716.pdf

Case Study	Defined	Adopted	Requirements & Standards	Indication of Effectiveness	Ordinance Link
Rockaway Beach	Under 30 nights stay	Prior to 2003	Business license; 9% transient room tax	Somewhat Effective	http://library.amlegal.com/nxt/gateway.dll/Oregon/rockawaybeach_or/thecityofrockawaybeachoregoncodeofordina?f=templates$fn=default.htm$3.0$vid=amlegal:rockawaybeach_or
Seaside	Less than 30 day		Conditional Use Permit subject to public hearing; Subject to inspection; Transient room tax provisions; Permit will be reviewed if two complaints are received by different residencies claiming adverse impact; Minimum of two off street parking spaces plus one addtional for each bedroom over two	-	http://www.cityofseaside.us/sites/default/files/vrd_checklist2016.pdf; http://www.cityofseaside.us/sites/default/files/vrd_checklist2016.pdf
Sisters	Vacation rental: The use of a residential dwelling unit by any person or group of persons entitled to occupy for rent for a period of less than 30 consecutive days per month and that is rented in such a manner for more than 10 days in a calendar year	2010	Business license, Transient room tax, Subject to inspection, Compalints can revoke permit, Subject to type 1 review process	Somewhat Effective	http://sistersoregon.gelfuzion.net/pdf/development-code/Chapter%202.15%20Special%20Provisions%2011.23.14.pdf

Source: Responding to Short-Term Rentals Survey, 2017 and code review (see links in table).

Appendix C: Industry Summary for Cities with Airbnbs

The following table provides industry data for all cities in Oregon with Airbnb.

Table D.1. Industry Summary by Region

City by Region	AirBnBs as % of Total Housing	Avg. Daily Rate per Property	% of Properties Reserved >30 Days	% of Properties (Entire Home)	% of Properties (Private/Shared Room)	Annual Revenue
Central Oregon	**4%**	**$209**	**53%**	**78%**	**22%**	**$37,539,776**
Bend	6%	$238	55%	81%	19%	$32,207,439
Cascade Locks	1%	$75	57%	57%	43%	$20,557
Culver	0%	$0	0%	100%	0%	$0
Dufur	1%	$150	75%	50%	50%	$19,189
Hood River	9%	$129	47%	66%	34%	$2,426,970
La Pine	3%	$95	65%	81%	19%	$214,018
Madras	0%	$49	0%	73%	27%	$4,635
Maupin	1%	$216	100%	100%	0%	$57,672
Mosier	12%	$100	42%	81%	19%	$200,261
Prineville	1%	$93	54%	50%	50%	$171,475
Redmond	1%	$115	49%	74%	26%	$1,036,179
Sisters	8%	$153	51%	73%	27%	$983,947
The Dalles	0%	$108	53%	43%	57%	$197,434
North Coastal Oregon	**5%**	**$206**	**53%**	**86%**	**14%**	**$24,875,499**
Astoria	2%	$101	61%	52%	48%	$890,097
Bay City	2%	$133	57%	93%	7%	$111,417
Cannon Beach	4%	$322	71%	95%	5%	$2,876,320
Depoe Bay	8%	$207	47%	95%	5%	$1,650,062
Garibaldi	0%	$199	0%	100%	0%	$4,575
Lincoln City	5%	$237	48%	94%	6%	$4,145,729
Manzanita	7%	$271	56%	91%	9%	$1,368,957
Nehalem	46%	$168	58%	60%	40%	$879,648
Newport	2%	$185	46%	79%	21%	$1,322,513
Rockaway Beach	5%	$192	63%	93%	7%	$1,688,036
Seaside	10%	$216	49%	89%	11%	$7,198,080
Tillamook	4%	$156	55%	89%	11%	$1,014,970
Toledo	0%	$25	50%	0%	100%	$6,134
Waldport	4%	$145	57%	76%	24%	$435,804
Warrenton	1%	$168	55%	95%	5%	$282,578
Wheeler	0%	$0	0%	100%	0%	$0
Yachats	8%	$158	78%	78%	22%	$1,000,579
Northeast Oregon	**1%**	**$129**	**45%**	**64%**	**36%**	**$1,738,663**
Baker City	0%	$115	55%	60%	40%	$158,813
Condon	1%	$89	0%	50%	50%	$1,091
Elgin	1%	$86	43%	43%	57%	$22,840
Enterprise	3%	$127	48%	52%	48%	$217,418
Fossil	4%	$134	30%	30%	70%	$24,072
Grass Valley	3%	$127	50%	100%	0%	$7,355
Haines	0%	$85	0%	0%	100%	$1,615
Halfway	2%	$75	25%	75%	25%	$8,595

City by Region	AirBnBs as % of Total Housing	Avg. Daily Rate per Property	% of Properties Reserved >30 Days	% of Properties (Entire Home)	% of Properties (Private/Shared Room)	Annual Revenue
Northeast Oregon Continued…						
Heppner	0%	$0	0%	100%	0%	$0
Hermiston	0%	$15	0%	75%	25%	$120
Ione	4%	$67	0%	50%	50%	$1,200
Irrigon	0%	$0	0%	0%	100%	$0
John Day	1%	$85	14%	100%	0%	$13,905
Joseph	10%	$205	79%	88%	12%	$996,192
La Grande	0%	$86	25%	55%	45%	$44,465
Long Creek	5%	$86	0%	0%	100%	$344
Lostine	4%	$89	60%	100%	0%	$45,525
Milton Freewater	0%	$95	20%	60%	40%	$23,925
Mitchell	6%	$147	0%	83%	17%	$11,222
Moro	3%	$76	0%	0%	100%	$2,490
Pendleton	0%	$140	27%	67%	33%	$49,041
Prairie City	1%	$120	60%	100%	0%	$31,464
Richland	1%	$72	100%	100%	0%	$5,495
Umatilla	0%	$198	0%	100%	0%	$792
Union	0%	$133	0%	100%	0%	$5,319
Unity	2%	$105	0%	100%	0%	$2,200
Wallowa	0%	$48	50%	50%	50%	$9,690
Wasco	4%	$91	88%	13%	88%	$53,475
Portland Metro	**2%**	**$82**	**48%**	**57%**	**43%**	**$69,880,529**
Beaverton	1%	$61	49%	37%	63%	$1,620,761
Cornelius	0%	$146	100%	50%	50%	$15,402
Damascus	0%	$48	44%	33%	67%	$35,011
Fairview	0%	$75	61%	61%	39%	$86,018
Forest Grove	0%	$65	42%	33%	67%	$90,651
Gladstone	0%	$62	33%	56%	44%	$30,761
Gresham	0%	$78	35%	39%	61%	$196,700
Happy Valley	1%	$79	26%	46%	54%	$197,404
Hillsboro	1%	$75	37%	37%	63%	$757,834
Lake Oswego	1%	$98	41%	55%	45%	$993,534
Oregon City	1%	$57	36%	38%	62%	$373,295
Portland	3%	$83	49%	60%	40%	$64,746,132
Sherwood	0%	$104	48%	52%	48%	$197,885
Troutdale	0%	$50	33%	43%	57%	$71,959
West Linn	1%	$71	38%	45%	55%	$383,343
Wilsonville	0%	$49	28%	24%	76%	$83,839
South Coastal Oregon	**1%**	**$132**	**52%**	**75%**	**25%**	**$2,335,541**
Bandon	2%	$227	52%	63%	38%	$423,053
Brookings	2%	$124	40%	65%	35%	$447,365

City by Region	AirBnBs as % of Total Housing	Avg. Daily Rate per Property	% of Properties Reserved >30 Days	% of Properties (Entire Home)	% of Properties (Private/Shared Room)	Annual Revenue
South Coastal Oregon Continued…						
Coos Bay	1%	$109	74%	74%	26%	$393,664
Coquille	0%	$67	67%	0%	100%	$9,600
Florence	1%	$103	58%	80%	20%	$342,405
Gold Beach	3%	$136	51%	88%	12%	$310,273
Lakeside	0%	$58	33%	100%	0%	$12,625
North Bend	0%	$93	72%	89%	11%	$122,735
Port Orford	4%	$137	32%	97%	3%	$208,399
Reedsport	1%	$73	35%	53%	47%	$65,422
Southeast Oregon	**1%**	**$125**	**48%**	**79%**	**21%**	**$1,143,628**
Burns	1%	$42	30%	40%	60%	$60,935
Chiloquin	1%	$130	74%	89%	11%	$185,222
Jordan Valley	1%	$2	50%	50%	50%	$161
Klamath Falls	1%	$135	46%	82%	18%	$880,611
Ontario	0%	$53	50%	50%	50%	$7,709
Paisley	1%	$145	100%	100%	0%	$8,990
Southern Oregon	**1%**	**$98**	**47%**	**57%**	**43%**	**$4,886,800**
Ashland	3%	$119	45%	69%	31%	$2,160,243
Canyonville	0%	$180	0%	20%	80%	$1,052
Cave Junction	2%	$69	50%	36%	64%	$57,470
Central Point	0%	$91	63%	43%	57%	$180,830
Eagle Point	0%	$98	50%	40%	60%	$49,303
Elkton	3%	$44	33%	100%	0%	$26,213
Gold Hill	1%	$141	63%	100%	0%	$57,729
Grants Pass	1%	$76	41%	52%	48%	$449,096
Jacksonville	4%	$97	45%	52%	48%	$318,241
Medford	0%	$85	53%	59%	41%	$728,615
Myrtle Creek	1%	$55	25%	63%	38%	$15,248
Myrtle Point	0%	$63	100%	0%	100%	$25,257
Oakland	1%	$123	50%	25%	75%	$41,461
Phoenix	1%	$59	33%	33%	67%	$50,563
Riddle	0%	$0	0%	100%	0%	$0
Rogue River	0%	$122	100%	100%	0%	$33,902
Roseburg	0%	$88	37%	44%	56%	$180,605
Sandy	0%	$182	85%	77%	23%	$140,041
Shady Cove	0%	$179	0%	100%	0%	$4,015
Talent	3%	$69	53%	39%	61%	$366,916
Winston	0%	$0	0%	100%	0%	$0
Yoncalla	0%	$0	0%	100%	0%	$0
Willamette Valley	**1%**	**$109**	**45%**	**53%**	**47%**	**$14,333,540**
Albany	0%	$42	50%	33%	67%	$142,465

City by Region	AirBnBs as % of Total Housing	Avg. Daily Rate per Property	% of Properties Reserved >30 Days	% of Properties (Entire Home)	% of Properties (Private/Shared Room)	Annual Revenue
Willamette Valley Continued…						
Amity	1%	$147	86%	86%	14%	$98,095
Aumsville	0%	$80	0%	100%	0%	$80
Aurora	2%	$99	71%	71%	29%	$63,928
Banks	1%	$114	43%	29%	71%	$43,118
Brownsville	1%	$107	80%	70%	30%	$59,008
Canby	0%	$50	52%	24%	76%	$67,515
Carlton	3%	$158	28%	83%	17%	$155,952
Clatskanie	0%	$53	33%	33%	67%	$12,001
Columbia City	0%	$0	0%	50%	50%	$0
Corvallis	1%	$78	46%	32%	68%	$994,099
Cottage Grove	1%	$40	26%	43%	57%	$81,810
Creswell	1%	$68	55%	55%	45%	$36,876
Dallas	0%	$78	40%	60%	40%	$26,238
Dayton	4%	$138	45%	79%	21%	$199,324
Detroit	0%	$187	0%	100%	0%	$5,050
Dundee	3%	$216	57%	67%	33%	$341,089
Estacada	0%	$32	50%	50%	50%	$11,879
Eugene	2%	$124	43%	59%	41%	$8,284,555
Falls City	0%	$0	0%	100%	0%	$0
Gaston	5%	$126	55%	82%	18%	$112,446
Gates	2%	$113	25%	100%	0%	$18,485
Harrisburg	0%	$180	0%	100%	0%	$6,030
Hubbard	0%	$51	0%	0%	100%	$760
Idanha	4%	$219	40%	40%	60%	$32,812
Independence	1%	$82	41%	59%	41%	$71,170
Jefferson	0%	$46	40%	60%	40%	$11,738
Junction City	1%	$97	50%	56%	44%	$68,555
Lafayette	0%	$0	0%	100%	0%	$0
Lebanon	0%	$51	50%	50%	50%	$15,787
Lowell	1%	$153	67%	100%	0%	$49,060
Lyons	1%	$115	67%	50%	50%	$67,071
Mcminnville	1%	$133	62%	58%	42%	$647,527
Mill City	0%	$118	50%	0%	100%	$2,490
Molalla	0%	$68	0%	40%	60%	$5,161
Monmouth	0%	$54	29%	29%	71%	$33,461
Monroe	1%	$112	50%	0%	100%	$8,536
Newberg	1%	$151	47%	64%	36%	$594,929
North Plains	0%	$35	0%	50%	50%	$1,341
Oakridge	0%	$46	22%	78%	22%	$24,837
Philomath	1%	$71	53%	67%	33%	$78,164

City by Region	AirBnBs as % of Total Housing	Avg. Daily Rate per Property	% of Properties Reserved >30 Days	% of Properties (Entire Home)	% of Properties (Private/Shared Room)	Annual Revenue
Willamette Valley Continued…						
Rainier	0%	$0	0%	50%	50%	$0
Saint Helens	0%	$45	25%	25%	75%	$12,493
Saint Paul	1%	$0	0%	100%	0%	$0
Salem	0%	$60	46%	32%	68%	$733,510
Scappoose	0%	$53	50%	25%	75%	$55,434
Scio	2%	$93	67%	50%	50%	$55,987
Scotts Mills	2%	$157	67%	100%	0%	$19,789
Sheridan	1%	$101	50%	60%	40%	$38,935
Silverton	1%	$98	59%	41%	59%	$179,167
Springfield	0%	$98	45%	46%	54%	$454,422
Stayton	0%	$85	67%	67%	33%	$50,039
Sublimity	0%	$77	67%	0%	100%	$10,425
Sweet Home	0%	$24	0%	67%	33%	$648
Tangent	0%	$124	100%	100%	0%	$4,451
Turner	0%	$49	50%	50%	50%	$1,472
Veneta	1%	$92	20%	45%	55%	$54,950
Vernonia	1%	$79	29%	14%	86%	$15,236
Westfir	8%	$96	33%	50%	50%	$74,176
Willamina	0%	$108	100%	100%	0%	$14,133
Woodburn	0%	$61	56%	11%	89%	$21,562
Yamhill	3%	$104	42%	58%	42%	$63,269
Total	**2%**	**$120**	**49%**	**63%**	**37%**	**$156,733,976**

Source: AirDnA. Property Data. *Airbnbs as % of* total housing units uses American Community Survey data (2011-2015).

Appendix D: Sensitivity Test, AirDnA vs Airbnb Data

Sensitivity testing suggests similarities between both datasets. Note, AirBnB data was pulled in January of 2017, while AirDnA data was pulled in March of 2017. This may have created slight discrepancies for indicators. Still, proportion of entire homes and private/shared rooms are within +/- 3% on average. Host incomes were within +/- $5,000 (removing Cannon Beach as the outlier). Average nights hosted/reserved days were within +68/-42 days and the average difference between monthly rates was $72.

Table E.1. Sensitivity Testing of AirDnA and Airbnb Data using Various Indicators

City	Proportion of Entire Home Listings		Propotion of Private/ Shared Room Listings		Typical Host Income		Typical Nights Hosted/ Reservation Days		Average Nightly Rate	
	AirBnB	AirDnA	AirBnB	AirDnA	AirBnB (Groomed)	AirDnA	AirBnB (Groomed)	AirDnA	AirBnb (2016)	AirDnA
Ashland	77%	69%	23%	31%	$10,550	$8,309	71	53	$131	$189
Astoria	55%	52%	45%	48%	$8,080	$9,176	67	75	$132	$136
Bandon	67%	63%	33%	38%	-	$8,814	-		$162	$294
Beaverton	44%	37%	56%	63%	$6,290	$4,739	94	52	$92	$120
Bend	75%	81%	25%	19%	$10,280	$14,801	46	56	$154	$354
Brookings	78%	65%	22%	35%	-	$7,849	-	49	$145	$197
Cannon Beach	97%	95%	3%	5%	$9,930	$35,077	28	96	$255	$426
Corvallis	43%	32%	57%	68%	$5,760	$5,178	40	50	$98	$109
Cottage Grove	42%	43%	58%	57%	-	$2,337	-	32	$67	$85
Depoe Bay	99%	95%	1%	5%	-	$13,866	-	50	$311	$347
Florence	81%	80%	19%	20%	-	$8,560	-	69	$119	$153
Gearhart	97%	-	3%	-	-	-	-	-	$294	-
Gold Beach	90%	88%	10%	12%	-	$7,216	-	42	$183	$290
Grants Pass	68%	52%	32%	48%	$7,560	$4,491	69	38	$111	$141
Hillsboro	41%	37%	59%	63%	$5,240	$3,609	49	35	$80	$115
Hood River	66%	66%	34%	34%	$7,400	$7,537	36	50	$150	$186
Jacksonville	58%	52%	42%	48%	$6,170	$4,750	45	39	$118	$141
Jordan Valley	68%	50%	32%	50%	-	$81	12	17	-	$75

City	Proportion of Entire Home Listings		Propotion of Private/ Shared Room Listings		Typical Host Income		Typical Nights Hosted/ Reservation Days		Average Nightly Rate	
	AirBnB	AirDnA	AirBnB	AirDnA	AirBnB (Groomed)	AirDnA	AirBnB (Groomed)	AirDnA	AirBnb (2016)	AirDnA
Joseph	87%	88%	13%	12%	-	$17,176	-	78	$181	$240
Klamath Falls	85%	82%	15%	18%	$3,220	$6,572	21	43	$142	$178
La Pine	83%	81%	17%	19%	-	$6,904	-	59	$139	$438
Lake Oswego	63%	55%	37%	45%	$8,930	$6,759	57	42	$136	$211
Lincoln City	94%	94%	6%	6%	$14,170	$12,265	32	51	$182	$386
Manzanita	95%	91%	5%	9%	$16,160	$16,105	57	60	$269	$362
McMinnville	55%	58%	45%	42%	$8,850	$8,750	58	61	$149	$190
Medford	63%	59%	37%	41%	$10,410	$6,809	60	65	$109	$159
Milwaukie	49%	-	51%	-	$9,790	-	170	-	$71	-
Nehalem	45%	60%	55%	40%	-	$12,217	-	76	$153	$214
Newberg	62%	64%	38%	36%	$4,980	$7,345	59	44	$152	$234
Newport	82%	79%	18%	21%	$10,730	$9,380	60	47	$167	$343
Oregon City	53%	38%	47%	62%	-	$4,912	-	48	$87	$104
Redmond	76%	74%	24%	26%	$9,090	$6,642	49	50	$107	$171
Rockaway Beach	94%	93%	6%	7%	$18,800	$15,925	94	76	$225	$314
Seaside	85%	89%	15%	11%	$11,170	$16,285	24	56	$203	$309
Sisters	71%	73%	29%	27%	$8,010	$9,196	58	47	$185	$246
Springfield	51%	46%	49%	54%	$3,720	$4,057	61	44	$79	$137
Talent	34%	39%	66%	61%	$5,850	$4,892	100	64	$77	$98
The Dalles	41%	43%	59%	57%	-	$6,581	-	63	$108	$146
Tigard	35%	-	65%	-	$3,140	-	55	-	$91	-
Tillamook	92%	89%	8%	11%	-	$11,941	-	64	$189	$243
Waldport	83%	76%	17%	24%	$15,290	$9,474	51	55	$189	$258
West Linn	50%	45%	50%	55%	$4,670	$4,675	62	42	$106	$115
Yachats	76%	78%	24%	22%	$13,520	$14,714	122	115	$130	$200

Source: AirDnA, Property Data, Retrieved March 2017. Airbnb Property Data, as of January 1, 2017.

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VIA OREGON

By Lauri Hines, CCIM, CPM
VIA Oregon Co-Founder
May 2021

Benefits of Short Term Rentals to Communities

- Travelers to an area generate significant revenue toward the area's tax base and local fiscal needs. Vacationers have budgeted to spend significantly more money than they do at home directly within the local community they're staying in – eating at local restaurants, shopping at local businesses, enjoying local tourism, and using local forms of transportation, among other activities.
- Running completely counter to many of the claims made by opponents of vacation rentals in communities, **professional vacation rental managers are ready, willing, and supportive of plans to fully partner with their jurisdictions to collect any required state and local occupancy taxes from their guests. This further adds to an area's bottom line and enhances the amount of local services an area is able to provide to their full-time residents.**
- Where many localities are experiencing increasingly strained local budgets, the proper administration of vacation rentals can be a significant boon to local coffers. **When vacation rentals add to the local tax base, it helps keep property taxes for neighbors and full-time residents low. Without vacation rentals, localities will need to either raise taxes or cut services to balance their budgets.**
- The vacation rental industry positively impacts many job-creating stakeholders within the fabric of a community, including realtors, contractors/builders, convention and visitors bureaus, small businesses, restaurateurs, landscapers, insurance agents, and local governments. All of these groups are hurt by regulations that limit the ability to rent out unused properties to vacationing guests.
    - If the ability to rent out second homes as vacation rentals is suppressed within our community, realtors, builders, and others will see reduced activity as many potential buyers will look elsewhere. **This will suppress revenues and spark a dangerous cycle that reduces revenues across the board, ultimately hurting a community's tax base**.
- Allowing short-term vacation rentals in communities brings significant positive impacts on a city's sustainability and infrastructure. It is far more environmentally friendly and sustainable to preserve a home than to tear it down and rebuild.

- In old or historic properties, tearing down the structure and building a new structure is far more impactful in terms of increased carbon dioxide and waste than renovating the existing structure for rental use.
- In addition to environmental friendliness, it is more cost effective to preserve a home than to build a new structure, which, in turn, makes it more affordable.

Dream Homes
of Oregon

ISSUES REQUIRING COUNSEL:

- **CUP application for STR was submitted in February 2021. Neighbors opposed the application at a hearing July 8 and the Planning Commission extended the hearing to August 12. The deadline for a response that will appear on the meeting agenda is July 22.**

- **Neighbor Jonathan Umfleet hired land use attorney Andrew Stamp who submitted an opposition letter and numerous attachments concerning STRs**

- **The neighbors to the west (Umfleet and Peterson) are using our property to park and are encroaching significantly onto the property with a boat and structures. They need to vacate ASAP so we can build a fence when the survey is certified**

- **The area directly opposite our house is an industrial business in a residential area, something not permitted by City code. This is significantly devaluing our home as it is not a residential use and large commercial vehicles are constantly driving up and down the 18-foot wide street**

- **There was a question as to whether or not the lot can be split based on the elevation relative to the sewer connection. Surveyor Mark Ferris checked with the City and it appears that the City will allow a grinding pump to be connected to the sewer system, so while we are in the process of surveying and clearing up land-use issues we would like to .**

- **Another neighbor stopped our contractor from clearing the slope down to the creek, claiming she owns the land. As far as I can tell, she may have an easement. Need to confirm with Mark Ferris and then send a letter to her advising she does not own that land.**

TIMELINE FOR NEWBERG HOME PURCHASE/STR APPLICATION

DECEMBER 2020	Purchased home at 412 W. 5th Street, Newberg, OR 97132 for $415k
DECEMBER 2020	Financing is construction loan in the amount of $531,000 at an 11.99% rate with monthly payments of approximately $5k.
DECEMBER - PRESENT	Major renovation of home including new roof, siding, exterior and interior paint, Totalling $200k with another $25k in furnishings.
FEBRUARY 4, 2021	Sent CUP application and fees of over $2k via Overnight mail
FEBRUARY 17,M2021	CUP Application routed to Planning Staff
MARCH 3, 2021	City Planner Keith Leonard says application is incomplete/unapproved
APRIL 2021	Contractors are trying to fix fence on west side and are stopped by neighbor to the west Jonathan Umfleet, saying they can't work on his land. We hire a surveyor.
APRIL 19, 2021	Revised CUP application sent
MAY 4, 2021	Application Deemed Complete by Planning Department
JUNE 8. 2021	Referrals sent to public agencies
JUNE 8, 2021	Letters sent to all neighbors within 500 feet
JUNE 29, 2021	Staff Report in Favor of CUP STR application
JULY 7, 2021	I received a call from my neighbor to the west, Jonathan Umfleet. He asked what my plans were for the fence. I told him that we are in the process of getting the survey certified, and when that is done we will construct a new fence about a foot from our property line. He says that will affect his parking, and I told him we don't want to inconvenience anyone, but need the room if we do a lot split
JULY 8, 2021	Attorney Andrew Stamp sends a letter of opposition and numerous attachments at 1:56 PM, hours prior to the 7:00 PM meeting

JULY 8, 2021

Neighbor Jonathan Umfleet and other neighbors voice opposition to STR at 412 W. 5th at Planning Commission meeting. Umfleet begins by saying they are calling from Newberg Public works. I don't know if that means some of them are City employees:

- Jonathan and Laura Umfleet, 502 W. 5th. Opposed to STR and lot split, Parking on our property
- Gabriel Peterson and Annie Joy Bays, 500 W. 5th. Opposed to STR and lot split. Encroaching on our property
- Todd Albertson and Adrian Kole, 504 W. 5th. Opposed due to increased traffic on the street. Todd Albertson has a criminal record.
- Karen Littau, 409 W. 5th. Opposed to STR due to traffic and maintenance issues while house was under renovation
- Jim Forker, 521 W. 5th.

Most speakers cited increased traffic as it is a "very narrow" gravel road. The City Public Works department backs up to our street and they drive large commercial/construction vehicles on the street constantly. Kole and Albertson have a very large RV that encroaches on the street, and Umfleet and Peterson have numerous vehicles, some of which they park on our property.

Broken down fence between our property and Umfleets/Petersons they would not let our contractors repair. Petersons are parking a boat and have a shed on our property. Umfleets park on our property as well. Also note there is extensive parking on the property, as numerous complaints about “parking on the street” were made

Arrow shows approximate property line. Both neighbors park their vehicles here and the Petersons also have a boat and a shed on our property.

The view directly across the street from 412 W. 5th Street. It is clearly an industrial business in a residential neighborhood, which is not allowed under City codes. My husband has seen City vehicles parked here, and there is also a gutter installation business. We are not sure which this is; the property backs up to Newberg's Public Works Department.

Holland America - Volendam cruise ship. ID 127855610 © Illuminaphoto | Dreamstime.com

Audience

Source: reader survey

READER DEMOGRAPHICS

Our readers are active and affluent

AVERAGE AGE	52
FEMALE	59%
MALE	41%
AVERAGE INCOME	$125,300
EDUCATION	80% graduated college
AVERAGE HOME VALUE	$452,000

83% OF READERS WERE INFLUENCED BY SOMETHING THEY READ IN OUR MAGAZINE

- 84% took 4 or more 1 to 3 day trips
- 95% dine out or shop while traveling
- 70% attended a food or drink event
- 63% visited a museum or art gallery
- 80% participated in winter/water sports
- 65% took 3 or more 4+ day trips
- 70% visited a winery
- 53% went camping or hiking
- 76% attended a live performance

Exhibit 17 page 1

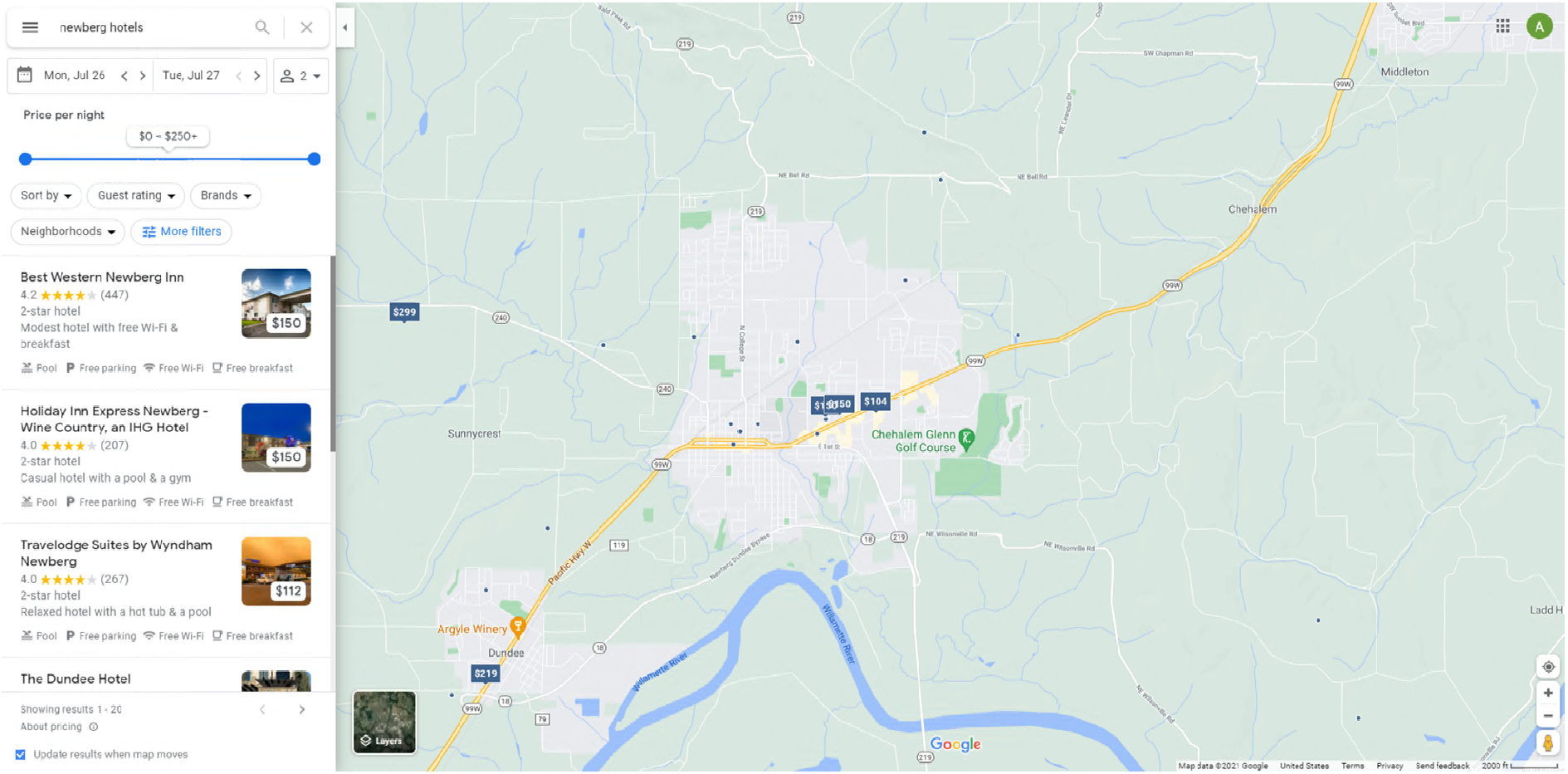

Exhibit 18 page 1

Dream Homes
of Oregon

Lodging Agreement

Dear Valued Guest,

Thank you for choosing our home for your vacation. We hope that you have a wonderful stay!

A great deal of love and care goes into each of our homes. We renovate, design and stage our homes to provide a wonderful guest experience. No detail is too small, and we are fully committed to your guest experience.

We have provided everything we can think of to ensure you have a wonderful stay. However, we are always available should you have questions, or if there is anything we can do to further enhance your stay.

In turn, we ask that you treat our home as you would your own, and appreciate your observance of our house rules as a guest in our home.

Please review the attached rental guidelines outlined below. They address the rules and requirements we have for our homes for you as the renter and all of your guests.

By booking our home, you are accepting these conditions electronically through the Reservations System for yourself as well as your guests for whom you are responsible.

Thank you.

Best Regards,

Lauri Hines

Lauri Hines

Dream Homes of Oregon

Rental Rules

Check-in time is after 4:00 p.m. and check-out is 11:00 a.m. Please contact us if you would like to request an early check-in or late check-out, and we will do our best to accommodate your needs. **Please note, we are unable to accommodate same-day requests for late check-out due to the cleaning company's scheduling.**

This is a NON-SMOKING home. A minimum $250 cleaning fee will be assessed if there is any evidence of smoking in the home. Smoking is allowed in the yard or patio; however the charge will be applied if cigarette butts are not removed and disposed of safely in the **outdoor** trash container.

Trip Insurance: We strongly encourage guests to purchase trip insurance at the time they book their trip. **We provide lodging only, and are not a trip insurer. We do not provide refunds on all or part of a trip once it has been booked unless the cancellation occurs more than 60 days prior to trip commencement.** Although there are many options when purchasing trip insurance, we use insuremytrip.com.

Damage/Reservation Deposit: A fully refundable security deposit is collected prior to your arrival. Security deposits are refunded promptly after guest checkout. Your security deposit is held by the travel facilitator (VRBO, Airbnb, etc.) and is automatically refunded to you between two days and one week after your departure, depending on the site you booked through.

Rent | Fee Discounts: Over time, we have added many amenities in the interest of our guest's comfort, without substantially increasing rental rates. For that reason, we **do not issue rent or fee discounts** except for non-habitability issues. We make every effort to keep the property well maintained for your enjoyment, and ask that you contact us immediately on check-in if there are any items needing attention.

Cleaning Fee: The cleaning fee is paid to a third-party cleaning service, and is based on standard cleaning and sanitization when guests have followed the check-out instructions. Extra costs incurred by the cleaning company, such as unwashed dishes or towels, pet fur on furniture or bedding, or grills that are not cleaned after guest use **are charged at an additional rate of $50 per half hour.** The spa cleaning fee is included in the overall cleaning cost, and is similarly paid to a third party. Per Oregon law, we are required to professionally clean the spa after each guest.

No Crab Cooking Inside: Crab cooked inside the house creates smells that can only be removed by ozone treatments. Therefore, no crab cooking inside the home. There are a number of vendors who will do this for you, including the South Beach Market in Newport. **There is a $250 charge for crab cooked inside our homes.**

Unauthorized Late Checkouts: With advance notice, we are occasionally able to allow late checkouts. Unauthorized late checkouts cause additional charges from our cleaning team when they must wait to clean. It also creates delays, refunds, and in extreme cases, cancelations for incoming guests.

Unauthorized late check-outs will result in a **$50 charge per half hour for the first two hours**. After two hours, **guest is responsible to pay a full day's rental at the then daily rate**. This does not entitle guest to further possession of the premises. **Guest is additionally responsible for the cost to host of any relocation, cancellation or any concessions paid to subsequent guests due to guest's late unauthorized check out at host's sole discretion. Guests who remain in the premises more than two hours after the check-out time will be removed by law enforcement and may be subject to civil penalties in addition to host penalties.**

Shoes: No shoes inside the house please.

Trash: We have valet service,so the trash company will remove trash each week. If your trash exceeds the capacity of the bin, please DO NOT stack trash around the bin. This will cause extra charges. **There is a $25 charge per bag for leaving trash outside the bin.**

Recycling: There are recycling bins onsite. Please note that we are only able to recycle cans and bottles marked OR $.10.

Payment: Security Deposit and partial payment to hold reservation, balance due in full on or before 30 days prior to arrival.

Cancellations: Cancellations or changes that result in a shortened stay, or that are made within sixty (60) days of the arrival date, forfeit the full advance payment and reservation deposit. Cancellation or early departure does not warrant any refund of rent.

Maximum Occupancy: The maximum number of guests is limited to the maximum shown on the listing. For our Newport properties, in accordance with the City of Newport's Vacation Rental Endorsement Requirements, guests must provide us with the full legal name of each guest, home address, email address, and the make and model of each vehicle parked on the property, prior to arrival. There is a per-diem charge for additional guests detailed on each listing. Guest occupancy may be observed through exterior cameras. There are no interior cameras at any of our properties. No guest may stay at the property unless that guest is disclosed as indicated herein. Your agreement with your guests related to use of the property is between you and your guests. You are fully responsible for your guests.

Televisions and Other Electronics: Recently we have seen many guests bring their own devices to use with our TVs. While this is fine, guests often do not re-connect the televisions, leaving them inoperable. This has occurred so frequently that we are now obligated to charge **$100** for each television or other electronic device left inoperable upon guest departure.

Causes for Immediate Cancelation with No Refund: Guests observed to be hosting any party, gathering or event without prior written authorization and a signed contract, proof of insurance, and event payment will be cancelled immediately, evicted by law enforcement, and will not be entitled to a refund of any sort. They will be subject to additional guest fees and other fees as outlined elsewhere in the Lodging Agreement. They will be reported to hosting platforms as having violated Host Rules, and may thereafter be prohibited on some platforms. Guests may not have visitors in excess of the maximum occupancy. Guests and their party may not engage in any illegal behaviour, including drug use or criminal activity. Guests may not make noise that can be heard outside the exterior of the home after 10:00 PM. Noise monitoring devices may be on premises. Any violation of the policies contained herein is cause for cancellation under this paragraph.

No Daily Housekeeping Service: While linens and towels are provided at the house, daily maid service is not included in your rental rate.

Parking: Please park in spaces reserved for the property. Please be respectful of spaces reserved for other properties.

Lights and LED Candles: We provide LED candles at most of our homes to provide ambiance. We ask guests to treat our homes as they would their own, and therefore ask that LED candles be turned off, either with a remote or switch on the bottom of the candle, when not in use. **LED Candles left on after a guest's departure will be charged back at host's discretion, based on the number of batteries required to supply candles left on, with a minimum $10 charge or $30 to replace the candle if guests have attempted to light it. Lights, fireplaces, and appliances left on upon departure will result in a minimum $25 charge.**

Heating | Fireplaces: Most of the fireplaces in our properties are gas or electric. For wood burning fireplaces, please note we do not provide wood for the firepit or outdoor fireplaces, so you may wish to stock up prior to arrival.

Pets: Most of our properties are dog-friendly. Please help us to keep our properties dog-friendly destination by keeping your pet off the furniture at all times.

Pet fur on the furniture or bedding is not included in the standard cleaning fee, and removal is charged back at $50 per half-hour with a one-hour minimum. Damage to leather and other furniture from pet nails will be charged back at host's sole discretion up the full value of the furniture.

Should your pet have an accident, please clean it immediately so that it does not become a "marking" spot. **All pet waste on the grounds must be picked up, bagged and put in the outdoor trash bin prior to your departure. Any pet waste left on the property is charged back to the guest at $50 per half hour, with a one-hour minimum.**

Please do not leave your dog unattended in the house unless they are crated. Unattended dogs have caused damage to the house, and further incidents may cause us to revisit our pet policy, which we hope not to have to do. Many otherwise well-behaved dogs suffer from separation anxiety when left alone in a strange setting, and may chew or be destructive as a result. **Damaged items will be charged back to the guest up to full replacement value, depending on the level of damage as determined by Host.**

Spa: For your comfort and safety, please:

- No glass containers in spa
- No diapered or unattended children in spa
- No food in spa
- No oil or bubbles in spa
- Rinse before entering spa
- Please use caution when entering and exiting spa
- Please close spa cover after exiting spa

Evidence of prohibited items in the spa will be charged back at Host's sole discretion with a $50 minimum charge, up to full replacement value of the spa if misuse from guests is the cause of damage.

Towels and Robes: Spa robes have been provided for your comfort. Please wash worn white robes with white towels and worn navy robes with beach towels, and start them in the dryer prior to your departure. Please note that there is a $60-$100 surcharge for any misplaced or damaged robes.

Furniture and Decor: **Do not move or rearrange the furniture or decor**. **There is a $50 per half-hour, one-hour minimum re-stocking fee for moving items back to their original location** as well as a charge for any damage done to the floors or furniture by guests rearranging furniture. **There is also a $50 per half-hour, one-hour minimum charge for any dishware, glassware, silverware or cookware that is moved between homes in our multi-home bookings.**

Grills: We have relied on an honor system in the past by simply asking guests to clean the grill after each use. Because this request has not been consistently honored, and in consideration of future guests, **we will charge $100 for any grill that is used and not cleaned by guests**. Cleaning a grill is very easy after each meal when the grill is still hot. Please use the provided grill brush.

Departure:

Upon Departure, please make sure that:

- All dishes, silverware, glassware and pots and pans are started in the dishwasher or hand-washed.
- Front door is locked, house key(s) left in lockbox, and lockbox combo is scrambled with the cover closed.
- All linens are undamaged and accounted for.
- All towels and robes are washed and started in the dryer (except The Landing; please put all used towels and robes in the shower.)
- All lights and fireplaces are turned off, including exterior lights.
- All thermostats are set to 60 degrees.
- All doors and windows are locked.
- All remotes are accounted for.
- All TV's and electronics are left operable in their original condition.
- If you are staying in one of our properties with two separate homes, all dishware, cookware, glassware and silverware must be in their original home/location.

  There is a $50 per-half hour charge for locating and returning items moved to another home, with a one-hour minimum.

You agree that we are not responsible for any accident, injuries or illness that may occur while on the premises or its facilities. We are not responsible for the loss of personal belongings or valuables of the guest. By accepting this reservation, it is agreed this rental agreement is solely between you and us as Homeowners and that you and all guests, their vendors and invitees expressly assume the risk of any harm arising from the use of the premises or others they invite to use the premise. You, as the renter, agree to indemnify and hold us harmless as Homeowners and the Hosts, as well as our agents, contractors and agents, for any and all claims of injury or damage asserted by your guests or invitees, and for any misconduct committed by your guests or invitees, including any false, misleading, or defamatory reviews concerning their stay including any misrepresentation, express or implied, that they were a renter of the home.

Our business reputation is very important. Our properties and service are highly rated. We encourage feedback and, of course, love five-star reviews from our guests. You further agree and understand that any public comment or review you leave will be honest, independent and fair.

The review process can be confusing in certain platforms. A four-star review seems like it would be pretty good. But even a four-start review can result in de-listings. A three-start review might seem like an adequate review but can cause serious issues for guests and hosts. We understand the consequences of both positive and negative reviews when we review you as a guest and expect you will too. Five-star does not mean perfect, but that the host reasonably resolved issues and the property was as presented in the listing. While there are typically some issues with rental relationships, we strive to solve legitimate issues as quickly as possible. You agree to give us a fair opportunity to correct any issues that may arise during your rental. We will do the same for you.

If you elect to leave a review, you agree you will use your true and correct identity in making such review. Sometimes, guests will use reviews as unfair leverage to get something else. You agree not to use any review as leverage. Sometimes, guests don't carefully read the listing information, house rules or other information provided by the host. You agree that you will not reduce a rating or leave negative comments about items that were disclosed in the listing, the house rules, this agreement or other communication from the host. If there is something you thought was less than five (5) stars but was disclosed in the listing information, house rules or other information provided by the host, you agree to fully disclose that fact as part of any review. You further agree not to omit information which would otherwise make the review misleading or false as a result of the omission of such information.

You agree to communicate all policies within this agreement to each guest and accept sole responsibility and liability for each guest which violates any of the terms herein, including but not limited to financial, contractual, and physical harm or loss to us, our employees, contractors and agents. It is expressly agreed that any and all claims against us, our agents and/or property owner including related parties, arising from this agreement or any other interaction between the parties to which we, employees, contractors and agents are named as defendant in any manner shall be limited to the state court in Lincoln County, Oregon. You and your guests agree to waive any objections to jurisdiction or venue.

Written Exceptions: Any exceptions to the above-mentioned policies must be approved in writing in advance.

You agree that all rental monies are non-refundable per cancellation policy above. You affirm that you have read about your rights to purchase travel insurance. You understand and accept all provisions of this agreement on your own behalf and on behalf of all your guests as a condition of my use of the property.

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Short-term rentals in small cities in Oregon: Impacts and regulations

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ARTICLE INFO

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ABSTRACT

Governments across the country struggle to manage the impacts of short-term rentals (STRs), like Airbnbs, and the sharing economy more generally. Existing research is sparse and tends to focus on large cities or metropolitan areas. Focusing on 237 small cities in Oregon, this study relies on descriptive data from Airbnb, AirDNA, Oregon Department of Revenue, and the U.S. Census to examine the prevalence and characteristics of Airbnbs, revenue potential from lodging taxes, and the impact on long-term housing supply. This study also summarizes the findings from a statewide survey of city managers and planners on regulation and perceptions. We find that the prevalence of Airbnbs varies drastically across cities and is highest in tourist areas. Airbnbs are present on over five percent of the housing stock in 16 cities. While hosts generated $82 million in revenue, only 11 cities and four counties charge lodging taxes. In total, 38% of Airbnbs are whole homes that are rented more than 30 days in a year, signaling potential impacts on long-term rental supply. Finally, while cities perceive Airbnb to be an issue, only 35% of survey respondents are currently regulating Airbnbs. We find that cities need to understand prevalence and characteristics of STRs and respond with appropriate regulatory controls. Airbnb provides lodging and tourism where hotels have not been available in some cities, but in other cities, Airbnbs place pressure on tight housing markets and draw complaints from residents.

1. Introduction

Short-term rentals (STRs) are often defined as housing units that are rented or leased for less than 30 days, although they are not officially defined by state or federal authorities. Part of the sharing or access economy, STRs are representative of a phenomenon in which people are opting to share goods and services traditionally owned.[1] Access economy activities are often compensated by a monetary exchange, trade, or in-kind offering. For STRs facilitated though internet platforms like Airbnb, Vacation Rental By Owner (VRBOs), or HomeAway rentals, access is granted through a monetary exchange which provides the STR's host with supplementary income. This trend has been understood to offer both benefits and costs to communities across the country.

As the role of STRs differs by community (influenced by the physical, geographic, social, economic, and political state of the jurisdiction), STRs impact communities diversely. While some communities see STRs as an opportunity to reap the benefits of increased tourism, employment opportunities, and economic development—other communities desperately try to reduce or mitigate the onslaught of unintended consequences brought on by STRs. Identified concerns range from the perception that STRs are unsafe or dangerous to the reality that many are operated illegally potentially causing strain on public services. Many local governments are concerned that STRs could reduce the availability or affordability of housing for existing residents, causing displacement, created through the "hotelization" of neighborhoods. While recent academic studies have examined the policy and planning implications of STRs in large cities, there is little work on the impacts of STRs in small cities. (Gurran and Phibbs, 2017; ECONorthwest, 2016; Sheppard and Udell, 2016; Wegmann and Jiao, 2017)

In this study, we address this gap by focusing on small cities in Oregon. We rely on data from Airbnb and AirDNA as a proxy for short-term rental because Airbnb is the most extensive platform and data was readily available. Here, an Airbnb is any listing on the Airbnb website as of February 2017 and includes a range of property types (e.g. house, apartment, villa, tent, bed and breakfast, etc.) across three listing types (entire home, private room, and shared room). Oregon is a state with a fast-growing population and an active tourist economy where 237 of 241 cities are under 100,000 people in size. There are Airbnbs in all of the state's 36 counties and in 75% of the cities in the state. The small cities account for 8,000 Airbnbs, or roughly 44% of the total Airbnbs in

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[1] The practice of renting homes for short-term use is not new (particularly in tourist areas) but Airbnb and other companies have created a platform to make the process easier and more globally accessible in what was predominantly a local industry.

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the state. Airbnbs are most prevalent in areas that attract high rates of tourism. We are interested in the positive and negative impacts of Airbnbs in small cities in Oregon. We are also interested in how small cities are regulating Airbnbs. To understand how small cities are impacted by Airbnbs, we (1) examine the prevalence and characteristics of Airbnbs; (2) examine the revenue potential for Airbnbs; (3) study the impacts of Airbnbs on the supply of housing; (4) gauge the perceptions of local planners; and (5) describe the current regulations used in small cities in Oregon. Our data sources include descriptive data from AirDNA and Airbnb, Transient Lodging Tax (TLT) data from the Oregon Department of Revenue, American Community Survey data, and a survey administered to city staff in Oregon that gauged perceptions and gathered data about the regulatory structure for STRs. While we focus on small cities in Oregon, our findings are relevant to other small cities across the United States and internationally.

This paper proceeds as follows. We begin with a discussion of previous studies on short-term rentals and potential benefits and impacts to the community. Then we describe our research questions and methodology. Next, we describe the prevalence of Airbnbs, potential for tax revenue, potential impacts on housing availability, and perceptions and regulations of STRs. Finally, we offer recommendations to small cities for regulating STRs.

2. Impacts and benefits of short-term rentals

While short-term rentals operated through online platforms like Airbnb are a relatively recent phenomenon, scholars have begun to study the economic and social impacts of short-term rentals. Some researchers have also studied and discussed potential policy frameworks to better manage these rentals.

2.1. Short-term rental's impact

STRs can impact communities both positively and negatively. STRs impact on housing, local economies and how STRs represent the sharing economy are the most commonly cited issues.

2.1.1. Impact on housing

A scan of applicable literature shows the impact of STRs on housing. In describing the negative externalities of Airbnb, Edelman and Geradin (2016) hypothesize that Airbnb may remove housing inventory from long-term markets, which can exacerbate the shortage of rental housing or increase rents further. Most reports comment on the fact that there are very clear limitations in the availability of data to fully understand the impact STRs have on housing markets or housing stock (ECONorthwest, 2016; Rees Consulting, Inc., 2016). While speculation and inherent assumptions about housing supply and costs are widespread, academics and practitioners are eager to learn about the true effects. Because there is no standard or agreed upon definition for STRs, the ability to draw clear conclusions on causality across space becomes especially difficult (ECONorthwest, 2016).

A study that analyzed the impact of HomeAway rentals in Seattle found that (1) STRs did not have a significant impact on home values, (2) properties were not on the STR market for a long period of time during a year, and (3) STRs were located in traditionally higher income areas (ECONorthwest, 2016). A study of STRs in New York City and New Orleans found STRs were associated with increased property values (Sheppard and Udell, 2016 and Kindel et al., 2016). This suggests that STRs' impact on housing will differ between geographic regions and local economy types. Other research suggests that STRs also have the potential to help "preserve property values by providing income to homeowners that can be used to offset mortgage and maintenance costs – in other words, by allowing owners to share the burdens of ownership" (Jefferson-Jones, 2015).

Some reports looked at the impact STRs had on specific housing types. A white paper looking at four small cities in Colorado (populations under 7000) found that STRs did lead to the reduction of homes and bedrooms previously used by employees, increasing the demand for workforce housing and reducing its supply (Rees Consulting, Inc., 2016).

Wegmann and Jiao (2017) study what types of neighborhoods have the most Airbnbs by using a webscraping methodology to examine five large cities: Austin, Boston, Chicago, San Francisco, and Washington, DC. Across cities, the research suggests that Airbnbs are concentrated in neighborhoods with a higher share of non-family households and a lower share of individual automobile work commute share. While the authors explored the characteristics of neighborhoods and concentration of Airbnbs, the research did not consider housing tenure within the neighborhood. It was beyond the scope of the research to examine how Airbnbs impact the supply of rental housing. (Wegmann and Jiao, 2017)

2.1.2. Impact on local economy

Proponents of STRs argue that they have positive economic impacts. The literature shows STRs can potentially impact local government revenue, increase tourism-related activity, provide income to hosts, and may disrupt the traditional lodging industry.

Short-term rentals have the potential to positively affect municipalities through increased tax revenues. A report assessing the impact of STRs in San Diego, Los Angeles, Monterey County, Santa Barbara, and St. Joseph (Michigan) found that taxing the STR industry generates substantial revenue for the municipality and supports job growth (TXP, Inc., 2014a, b; TXP, Inc., 2015).

A primary reason that property owners operate STRs is the income operators' can earn. However, operator revenue from STRs varies widely. In a 2016 study of HomeAway rentals in Seattle, ECONorthwest found that STRs did not generate sufficient income for owners to justify shifting from the long-term rental market or ownership market for economic reasons alone —potentially unveiling other value-drivers for operating STRs beside purely economic gains (ECONorthwest, 2016). The study found that social and sustainability benefits may also motivate property owners to continue operating these rentals. Operator effort and motivation also makes a difference; an assessment of Airbnb hosts found that the annual expected profit is approximately $20,000, but "'hands-off' Airbnb hosts can expect occupancy rates (and revenue) at least 15% lower" than more involved hosts (Wallace, 2016).

Literature attests that "with proper regulation and enforcement, citizens and communities can benefit from the increased tourism" that short-term rentals bring (Binzer, 2017). Despite localized economic benefits, the STR industry can disrupt formal industries in the accommodation sector by attracting visitors away from conventional lodging and accommodation companies (Guttentag, 2013; Fang et al., 2016). This disruption becomes exacerbated in that many STRs marketed through web-based platforms are often illegal (e.g. being operated without a license/permit, without paying proper taxes/fees, in violation of zoning ordinances, or without having proper inspections). This gives traditional, regulated lodging businesses an economic disadvantage (Guttentag, 2013). Continued studies evaluating occupancy rates, revenues per available room, rates of use and rental price, predicted non-lodging spending from short-term renters, and estimates on potential revenue earnings for municipalities will assist in the development of knowledge in this area.

2.1.3. Short-term rentals and the sharing economy

STRs often operate by property owners leasing their unused space to tourists and visitors, prospective or existing residents in search of long term homes, or businesspeople on extended stays. The ways in which STRs represent the sharing economy is still open to interpretation. The growth of STRs offered through web-based platforms indicates that there is at least additional capacity in existing housing stock and that property owners are willing to share their excess space in exchange for monetary compensation (Ellen, 2015). Outside of this observation, there is a range of perspectives about whether home sharing, through web-based

platforms, negatively or positively influences the sharing economy.

In theoretical debates, policy makers have considered adapting the Airbnb home-sharing model to house lower income individuals as a new form of housing assistance (Ellen, 2015). The idea that people are interested in providing access to their space to strangers, suggests that sharing economy activities might be operated in capacities other than short-term rentals, providing different social and economic benefits therein (Martin, 2016). STR hosts can also reap economic benefits by participating in the sharing economy, reinforcing their desire to participate in that economy. Specifically, hosts can distribute their assets to supplement their income which has the added benefit of materializing the collaborative use of resources (Daunoriene et al., 2015). Social impacts are realized from public relations perspectives in which, the incremental shift towards home-sharing "has engendered visions of renewed forms of collective urban life" involving sustainability, symbolic interaction, and communication that empowers trust (Gregory and Halff, 2017).

Other perspectives describe how STRs and home-sharing through web-based platforms may bring detrimental impacts on the sharing economy, or at least diminish its reputation. For instance, intermediary businesses that "provide the infrastructure necessary to sustain the sharing community" (Gregory and Halff, 2017) often enable, or intensify, the evasion of local laws and regulations (Interian, 2016). These businesses can also displace companies that are regulated, and often do not hold themselves accountable to the negative externalities their business models can create (Interian, 2016). Home sharing platforms are evolving more quickly than cities and researchers can keep up. New companies are quickly finding ways to use home sharing as a means to generate profit innovatively. For example, a service known as Loftium provides prospective homeowners with the down payment they need to become homeowners with the requirement that the homeowner would rent their unused space on Airbnb and provide Loftium a cut of profits (Bernard, 2017). Changing perceptions of home sharing can be understood to come with endless possibilities if permitted to evolve in line with innovative ideas.

2.2. Policy framework considerations

Integrating STRs into the formal accommodations sector through regulations and enforcement has been cited as an important next step to correct some of the negative impacts of STRs (Guttentag, 2013). However, policy makers continue to grapple with the rationales, processes, and practices of how to best regulate STRs. During the economic recession, some raised questions about whether it is beneficial to regulate the STR market at all—in the chance it inhibits homeowners from making ends meet on their mortgages or housing payments (Gottlieb, 2013). In general, however, the literature seems to agree that STRs should be regulated in some fashion, the extent to which is unclear and controversial (Gottlieb, 2013; Goodman, 2016, and Hood River County Community Development, 2016).

2.2.1. Policy approaches

There appears to be no single best way to regulate the STR market that fits the needs of all communities across space. One report suggested a three-part solution:

1 Launch a standard of safety and accountability (strengthening nuisance laws, ensuring hosts have appropriate insurance, etc.);
2 Move past a yes or no debate on short-term rentals (consider the nuances of individual communities and tailor regulations to those nuances); and
3 Enforce what is on the ground and online (to cut down on opportunities to evade laws) (Goodman, 2016).

Another report articulated these alternatives: develop public nuisance abatement ordinances, ban short-term rentals outright, enact time restrictions (i.e. allowing short-term rentals for a period of 30 days or less), or enact performance-based standards (Gottlieb, 2013). The American Planning Association (APA) suggests that jurisdictions require licenses, fees and taxes, and insurance. APA also suggests consistency with land use controls and to determine whether inspections are necessary (Sullivan, 2017).

In a guidebook on the equitable regulation of short-term rentals, suggestions to proper management include clear definitions, active record keeping, protections for housing (supply and affordability), protections for guests, procedures for oversight, protections for neighborhood preservation, and imposition of taxes (Sustainable Economies Law Center, 2016).

Others argue that STRs, as part of the sharing economy, need special or "innovative" regulatory treatments "precisely because the business model is so new" (Katz, 2015). Gurran and Phibbs (2017) provide some recommendations to planners to examine and monitor the impacts of STRs on the availability and cost of long term permanent rentals stating that "ongoing research and analysis to fully understand implications for local neighborhoods and housing markets" is integral. Wegmann and Jiao (2017) outline four guiding principles for regulating urban vacation rentals, (1) emphasizing the need for better data, (2) considering concentration limits, (3) suggesting meaningful enforcement mechanisms, and (4) distinguishing types of short-term rentals to treat commercial operators differently than "mom-and-pop" operators.

2.2.2. Transient lodging tax

Transient lodging taxes (TLT) are a local option tax levied on lodging facilities (hotels, motels, bed and breakfasts, etc.). While all jurisdictions do not levy a tax of this kind, "taxing tourism is an appealing option for governments facing budgetary constraints and pressures to decrease reliance on a variety of taxes" (Gooroochurn and Sinclair, 2005). For instance, taxes levied to hotels offset burden onto tourists, which is especially advantageous in areas with "superior or unique natural resources" as to "capture the 'rent' of these resources through taxation" (Oakland and Testa, 1996).

TLTs, and other tourism taxes, are considered efficient relative to taxing other sectors (Gooroochurn and Sinclair, 2005). TLTs are useful in curbing negative impacts of certain businesses and in improving fairness by recovering service costs from those who benefit from those services (Oakland and Testa, 1996). In Oregon, House Bill 2267 passed in 2003 established a state lodging tax. The revenues generated by the tax fund Oregon Tourism Commission programs. The tax applies to transient lodging providers and transient lodging intermediaries. STRs are specifically called out as transient lodging under the regulations. The state rate is 1.8% as of 2016; local governments can adopt additional lodging tax; the revenues become available for the local governments. Under current regulatory structures, some jurisdictions require that TLTs are collected from STRs while others have not assessed TLTs on STRs.

2.3. Summary

Limited data exist on the impact that short-term rentals have on governments and local economies, hosts and residents, accommodation sector businesses, and the sharing economy. The literature suggests positive and negative impacts will vary across space and time (particularly in regard to housing supply and affordability). Additionally, STRs have and will likely continue to disrupt traditional lodging options but likely will not replace these businesses altogether. Mixed perceptions about how home sharing will affect the sharing economy at large has created a dichotomy around the topic (expected to remain until more research can occur). In short, while there has been some research of large cities in the US and internationally (ECONorthwest, 2016; Gurran and Phibbs, 2017; Wegmann and Jiao, 2017), no research exists on smaller cities. STRs may be of even greater concern to smaller communities which may be more dependent on TLTs, lack staff capacity to address the negative impacts, and have a smaller amount and share of long-term rental housing available. This research seeks to fill that gap

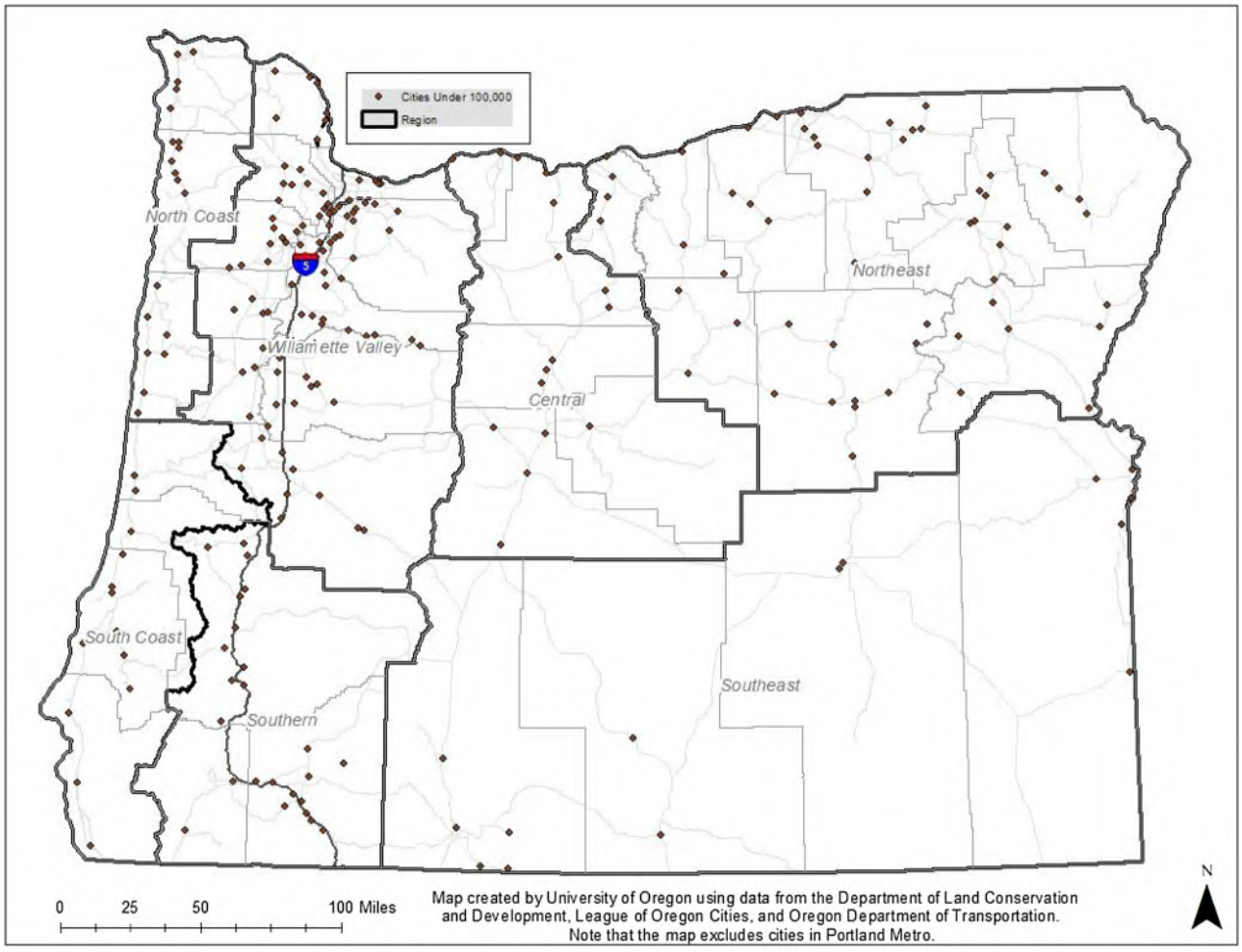

Fig. 1. Location of Cities Under 100,000 in Population and Regions.
Source: University of Oregon Community Service Center, 2017.

by examining the prevalence and impacts on small cities and understand the current regulatory framework for STRs in small cities.

3. Research questions and methodology

The scope of this study was confined to smaller cities in Oregon, a state that has only four cities with over 100,000 people – Portland, Eugene, Salem, and Gresham. For the purpose of this study, we define small cities as cities under 100,000 in population. Because smaller cities are typical in Oregon, we chose to study their unique perspectives and approaches to policy.

To examine how STRs impact small cities, we pursued five primary research questions. Our research questions and the data and methods to address each research question follows:

1) What is the prevalence of short-term rentals in small cities? What are the characteristics of these rentals?
   - Method: Descriptive Analysis
   - Data source: AirDNA, Airbnb
2) What is the revenue potential for short-term rentals in small cities?
   - Method: Descriptive Analysis
   - Data source: Oregon Department of Revenue; AirDNA; Airbnb
3) To what extent do short-term rentals constrain the supply of housing in small cities?
   - Method: Descriptive Analysis
   - Data source: American Community Survey; AirDNA, Airbnb
4) What are planners' perceptions of short-term rentals in small cities?
   - Method: Survey Analysis
   - Data source: Survey administered to Oregon Planning Directors and City Managers
5) What are the current regulations affecting short-term rentals in small cities?
   - Method: Survey Analysis
   - Data source: Survey administered to Oregon Planning Directors and City Managers

To obtain descriptive information to address the first three research questions, we obtained market summary and property performance reports for the state of Oregon from AirDNA – a proprietary web scrubbing service that uses technology to pick up and aggregate Airbnb data and sells access to the data. While Airbnb is not the only STR platform, we only examine Airbnb in this study because we were able to obtain data on Airbnbs from AirDNA and Airbnb. Further, Airbnb is the market leader in the STR industry. We obtained high-level aggregate industry data by city from Airbnb that we used to verify AirDNA data. We gathered data on TLTs from the Oregon Department of Revenue to address our second research question. And we relied on American Community Survey (ACS) data to compare Airbnb data to housing characteristics like unit type and rent to assess how STRs potentially impact housing cost and affordability.

Our fourth and fifth research questions rely on data from a survey of planners and city managers examining perspectives on STRs in smaller cities in Oregon (with populations less than 100,000, thereby excluding responses from Portland, Eugene, Salem, and Gresham). Respondents

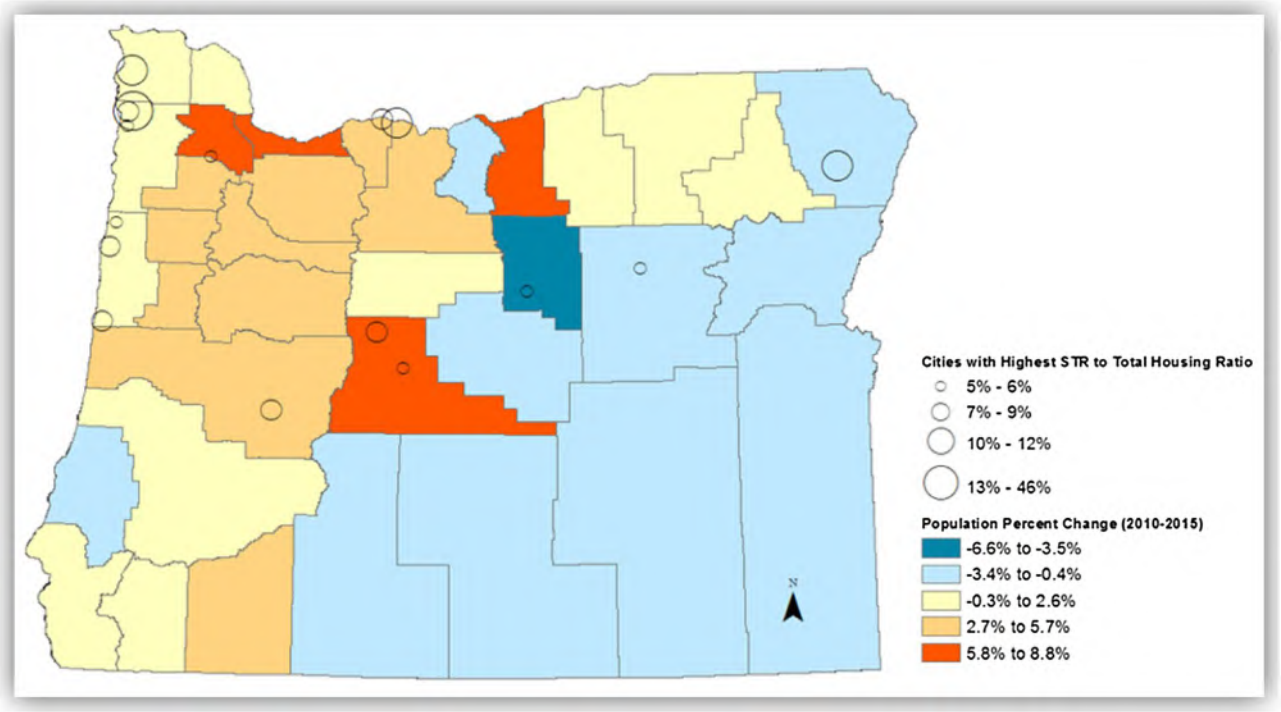

Fig. 2. Cities with Highest Share of STR (of Housing Units) v. Population Change by County between 2001–2015.
Source: AirDNA Property Data, Retrieved 2017. United States Census, American Community Survey, Population Data, 2011-2015. (Excludes Portland, Eugene, Salem, and Gresham).

were recruited by email using the League of Oregon Cities email list of planning directors and city managers. Respondents were initially contacted in March of 2017 and sent two follow-up emails between March and April of 2017. Researchers developed and disseminated a survey to gauge views of STRs in cities of different sizes and regions. The survey focused on how city staff perceive STRs and how cities are currently regulating STRs. Of the 237 cities in the state of Oregon under 100,000 in size, we received a survey response rate of 39% (92 accepted responses). We eliminated multiple responses for a single city (keeping only the first response) and removed responses where the participant represented more than one city in their responses. Fig. 1 shows a map of cities under 100,000 and the regions used in this analysis. The survey instrument is attached in Appendix A.

Ultimately, the researchers sought to answer: what are the impacts and benefits of STRs in small and rural cities? Are jurisdictions in Oregon regulating STR in such a way as to reap their benefits and mitigate impacts? As existing studies tend to skew toward analyzing STRs' impact on large cities and metropolitan areas, the aim was to provide vital and timely information for smaller cities. While examining our research questions, we find that STRs offer innovative solutions to several problems that persist in rural and small cities.

4. Findings of impact and perceptions in Oregon

In this section, we describe the prevalence and characteristics of STRs in small cities and then look at the revenue potential of STRs. Following is information on how STRs impact the supply of housing. We conclude by offering information related to perceptions and regulations.

4.1. Prevalence and characteristics of STRs

To understand how STRs impact small cities, we examine the prevalence of Airbnbs in cities and examine characteristics including: the share of housing units in a city with STRs; the regional distribution of STRs; the neighborhood characteristics of Census tracts with STRs; the type of STRs (entire home; private room in home, or shared room); the property type of STRs; and average revenues generated.

Region	First Quintile	Second Quintile	Third Quintile	Fourth Quintile	Fifth Quintile
Central Oregon	0%	19%	65%	15%	0%
North Coast Oregon	0%	14%	75%	11%	0%
Northeast Oregon	0%	6%	90%	4%	0%
Portland Mero	1%	16%	45%	36%	2%
South Coast Oregon	0%	14%	80%	6%	0%
Southeast Oregon	0%	8%	77%	15%	0%
Southern Oregon	0%	14%	67%	18%	0%
Willamette Valley	1%	21%	51%	27%	0%
Total	0%	17%	65%	18%	0%

Fig. 3. Distribution of Airbnb Properties in Census Tracts by Income Quintile.
Source: AirDNA Property Data, Retrieved 2017. ACS 2011–2015, Median Income by Census Tract and Income Quintile by County. (Excludes Portland, Eugene, Salem, and Gresham).

Cites with less than 100,000 people (from this point further: cities) encompass approximately 8,000 Airbnb STRs; roughly 44% of total Airbnbs in Oregon. Airbnbs are located within every county and in 75% of all cities. The prevalence of Airbnbs is computed by dividing the total number of Airbnbs (including shared rooms, shared homes and whole homes) by the total units in housing stock. This measure shows the percentage of housing units with an Airbnb.

In Oregon, Airbnbs are most prevalent in areas that attract high rates of tourism. The North Coast and Central Oregon are the most prominent regions for STRs. In Central Oregon, Airbnbs account for approximately 4% of the region's total housing stock. In the North Coast, Airbnbs account for 5% of the region's total housing stock. For cities in the remaining six regions, Airbnbs account for approximately 1% of the total housing stock.

In 16 of the 237 cities under 100,000 in population in Oregon, more than 5% of the housing stock has an Airbnb on the property, indicating that short-term rentals are not widespread in most jurisdictions (see Fig. 2). We note that not all STRs are equivalent to one dwelling unit,

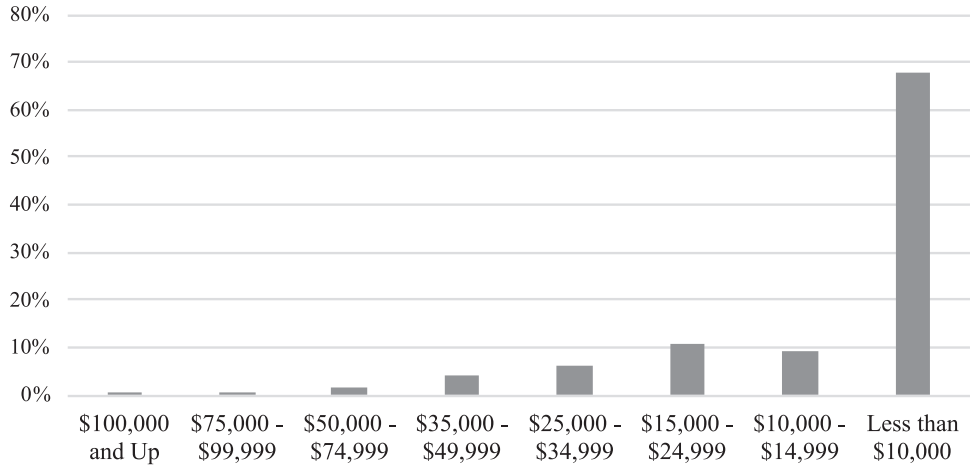

Fig. 4. Percent of Airbnbs by Annual Revenue Earned.
Source: AirDNA, Property Data, Retrieved 2017. (Excludes Portland, Eugene, Salem, and Gresham). Note: Due to rounding, percentages do not add up to 100%; n = 8132.

for instance, some STRs are private rooms in homes and some are sections of land (advertised for tent camping) on properties with excess acreage. Nevertheless, for these 16 jurisdictions (Bend, Depoe Bay, Gaston, Hood River, Joseph, Lincoln City, Long Creek, Manzanita, Mitchell, Mosier, Nehalem, Rockaway Beach, Seaside, Sisters, Westfir, and Yachats), the ratio of Airbnbs to housing units could suggest a potential housing supply constraint, as we discuss further below.

Fig. 2 shows that the cities with the highest share of Airbnbs are not necessarily located in the fastest growing areas of the state. While Central Oregon (Bend and Redmond) have both a high share of Airbnbs and high population, many other Airbnbs are located in stagnant or declining counties. This signals that concentrations of STRs can occur amid various demographic context of rising, stagnant, and declining populations.

The researchers were also interested in where STRs were located relative to household income. Fig. 3 shows that most Airbnbs are found in middle income neighborhoods. In this figure, we classified the location of census tract the Airbnb is in by the county income quantiles to examine the distribution of Airbnbs by income group. Across all regions, Airbnbs are rarely found in the lowest income neighborhoods or the highest income neighborhoods. Approximately two-thirds of Airbnbs are found in the middle income neighborhoods.

Approximately 4,400 hosts operate an Airbnb in small Oregon cities. Most Airbnb hosts (78%) operate a single STR and most hosts (70%) list their unit as their entire home (as opposed to just a shared or private room). This data reveals that it is most likely that these hosts operate a STR out of their primary dwelling unit. However, 970 hosts (or 22%), operate more than one STR.

Hosts that rent out a private/shared room (approximately 30%) appear to be interested in making supplementary income solely off some of their extra space. This is an important distinction about the use of short-term rentals. As of 2015, the average household size for all housing units was approximately 2.5 people while almost 60% of housing units had 3 or more bedrooms.[2] Accordingly, many short-term rental operators are capitalizing on the efficient use of space.

Most STRs are traditional property types—approximately 60% of all listed properties are houses and another 13% are apartments. Other common STR property types also remain more traditional including: condominiums (5%), bed and breakfasts (4%), cabins (3%), and townhouses (2%). While 6% was identified as "other," additional less common STR property types were also identified. Campers/RVs, guesthouses, villas, bungalows, and lofts each represented 1%, respectively (totaling 5%). Boutique hotels, tents, chalets, yurt, tipis, timeshare, hostels, castles, boats, dorms, nature lodges, treehouses, trains, huts, islands, and lighthouse each represented less than half a percentage point, respectively (totaling 7%).

4.2. Revenue potential

Fig. 4 shows that 68% of Airbnbs generate less than $10,000 per year and 32% of Airbnbs are generating more than $10,000 per year. Further, 32% of all Airbnbs are generating less than $600 per year.

Nine of the 15 cities with the highest grossing revenue as well as the highest revenue per property are located in the North Coast region (see Fig. 5).

While Airbnb has gained popularity for putting money in hosts' pockets, the potential for cities to generate fiscal revenue is also meaningful. However, many cities are not taking advantage of this opportunity. Only 20% of surveyed cities impose a transient lodging tax (TLT) on STRs and survey responses range from 1.8% (the City of Sisters) to 10.4% (the City of Bend). Region by region, it is most common for cities in the North Coast (67%), South Coast (44%), and Central Oregon (43%) to collect this tax. This is likely due to the higher prevalence of STRs in these areas, which create greater potential for revenue generation. Accordingly, while any community with STRs would generate added revenue by levying a TLT, areas with a high capacity for tourism stand the best chance for reaping TLT benefits. Smaller cities that cannot attract traditional lodging types (hotels, motels) to their cities may also find new opportunities to generate revenue through STRs and attract tourism.

The state of Oregon imposes a 1.8% TLT on STRs. With STR hosts generating an estimated annual revenue of $82 million, the State should be collecting approximately $1.5 million annually (see Fig. 6). Approximately 67% of U.S. states including the District of Columbia levy one or more state taxes on Airbnbs. The state level rates range from 1.8% to 14.5% and average about 8%.[3] Oregon is on the low end of the spectrum of states imposing TLTs on STRs.

4.3. Influencing the supply of housing

This section considers how short-term rentals may impact the

[2] United States Census. American Community Survey, 2011-2015, Selected Housing Characteristics for Oregon (DP04).

[3] Airbnb. In what areas is occupancy tax collection and remittance by Airbnb available? Retrieved May 5, 2017. https://www.airbnb.com/help/article/653/in-what-areas-is-occupancy-tax-collection-and-remittance-by-airbnb-available.

Cities	Region	Annual Revenue	Annual Revenue per Property (Max)	Annual Revenue per Property (Mean)	Annual Revenue per Property (Std Dev)
Bend	Central Oregon	$32,207,439	$157,773	$14,801	$18,642
Seaside	North Coast	$7,198,080	$198,425	$16,285	$27,235
Lincoln City	North Coast	$4,145,729	$117,250	$12,265	$14,601
Cannon Beach	North Coast	$2,876,320	$203,617	$35,077	$39,131
Hood River	Central Oregon	$2,426,970	$81,215	$7,537	$10,428
Ashland	Southern Oregon	$2,160,243	$59,876	$8,309	$10,923
Rockaway Beach	North Coast	$1,688,036	$98,481	$15,925	$16,170
Depoe Bay	North Coast	$1,650,062	$59,288	$13,866	$16,207
Beaverton	Portland Metro	$1,620,761	$64,717	$4,739	$7,833
Manzanita	North Coast	$1,368,957	$90,051	$16,105	$16,773
Newport	North Coast	$1,322,513	$63,141	$9,380	$11,142
Redmond	Central Oregon	$1,036,179	$42,518	$6,642	$8,796
Tillamook	North Coast	$1,014,970	$69,780	$11,941	$13,862
Yachats	North Coast	$1,000,579	$62,675	$14,714	$11,232
Joseph	Northeast Oregon	$996,192	$64,846	$17,176	$13,523

Fig. 5. Annual Revenue Generated for Highest Revenue Grossing Cities.
Source: AirDNA Property Data, 2017. (Excludes Portland, Eugene, Salem, and Gresham).

Regions	Average Daily Rate per Property	Total Annual Bookings	Revenue (Annual)	State Levy (1.8%) Annual Earnings
Central Oregon	$209	$46,391	$37,539,776	$675,716
North Coast	$206	$38,927	$24,875,499	$447,759
Willamette Valley	$97	$14,026	$5,315,475	$95,679
Portland Metro	$72	$11,172	$4,937,697	$88,879
Southern Oregon	$98	$13,209	$4,886,800	$87,962
South Coast	$132	$5,710	$2,335,541	$42,040
Northeast Oregon	$129	$3,307	$1,738,663	$31,296
Southeast Oregon	$125	$2,977	$1,143,628	$20,585
Total	**$134 (average)**	**$135,719**	**$82,773,079**	**$1,489,916**

Fig. 6. Estimated Annual Revenue Earned by Airbnb Hosts and Associated State Tax Revenue.
Source: Airbnb property level data provided by AirDNA, retrieved 2017. (Excludes Portland, Eugene, Salem, and Gresham).

availability of housing. To examine the potential impacts on supply we study how many days STRs are rented in a year, the type of unit they are (whole home versus private/shared room), the share of housing units with a STR that are an entire home and rented for more than 30 days, and how revenue generated from STRs compares to average rents. Following Edelman and Geradin (2016), we compare the revenue generated from Airbnb rentals to revenue generated from long-term tenants.

Most STRs are listed as an entire home (69%) and 37% are reserved for more than 30 days in a calendar year (see Figs. 7 and 8). It is less likely that these STRs, rented as the entire home and reserved more than 30 days, are on the market as long-term rental housing and it is more likely that these STRs are operated by homeowners with more than one home. Also, it is more likely that STRs, rented out as the entire home and reserved in excess of 91 days, only serve as STRs and are operated more like a commercial hotel than as an opportunity for home sharing.

Interestingly, in regions with higher populations, like the Portland Metro and Willamette Valley, STRs are operated as private rooms slightly more often than as entire homes. This provides some indication of the types of spaces that are available and the ways in which hosts are using STRs.

Cities with more than 5% of the housing stock in STRs may experience impacts on housing supply.[4] Housing supply is possibly compromised in very few cities (defined by total STRs making up 5% or more of total housing stock). Further, when looking at STRs rented as the entire home to total housing stock, we find an even smaller share. Using this formula for addressing local housing supply constraints at a regional level, the North Coast and Central Oregon are again most severely constrained with STRs at approximately 2% of the regions' total housing units. We note that it is difficult to tell whether STRs were rented as vacation rentals before the Airbnb technology platform existed, or whether they are long-term rentals that have been converted to Airbnbs. The number of vacant seasonal units grew by 28% between 2005–2009 and 2012–2016 (Fig. 9). In most regions, the share of units that are classified as vacant or seasonal was less than 5% from 2005 to 2009 (with the exception of Central Oregon and North Coastal Oregon. But, vacant units as seasonal, recreation or occasional occupancy as a percentage of total units grew in all regions. From data available from American Community Survey, we cannot tell whether this growth is

Region	Entire Home	Private Room	Shared Room	Total
Central Oregon	78%	21%	1%	2,905
North Coast Oregon	86%	13%	1%	1,720
Northeast Oregon	64%	34%	1%	233
Portland Metro	41%	56%	3%	1,052
South Coast Oregon	75%	25%	0%	309
Southeast Oregon	79%	20%	1%	170
Southern Oregon	57%	41%	1%	769
Willamette Valley	49%	50%	1%	974
Total	**69%**	**30%**	**1%**	**8,132**

Fig. 7. Airbnbs by Listing Type and Region.
Source: AirDNA, Airbnb property level data, Retrieved 2017. (Excludes Portland, Eugene, Salem, and Gresham).

[4] We use the threshold of 5% because most regions showed seasonal vacancy rates as a share of total housing of less than 5% before Airbnb was launched in 2008 (see Fig. 9).

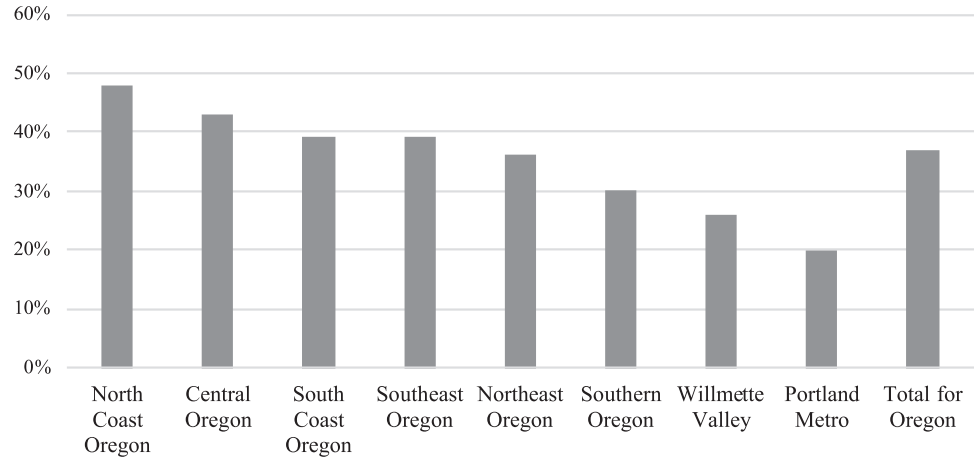

Fig. 8. Percent of Airbnbs by Listed as Entire Home and Rented for 30 Days or More per Year.
Source: AirDNA, Airbnb property level data, Retrieved 2017. (Excludes Portland, Eugene, Salem, and Gresham).

Region	All Vacant Seasonal Units			Share of Vacant Seasonal Units as % of Total Housing Stock		
	# Units (2005-2009)	# Units (2012-2016)	% Change in # of Units (2005-2009 to 2012-2016)	Share of Units (2005-2009)	Share of Units (2012-2016)	Difference in Share (2005-2009 to 2012-2016)
Central Oregon	11,798	15,631	32%	7%	9%	2%
North Coastal Oregon	17,247	19,402	12%	25%	27%	2%
Northeast Oregon	3,285	4,113	25%	5%	6%	1%
Portland Metro	5,582	7,844	41%	1%	1%	0%
South Coastal Oregon	1,620	2,469	52%	4%	6%	2%
Southeast Oregon	2,097	2,921	39%	5%	6%	2%
Southern Oregon	2,049	2,761	35%	2%	2%	0%
Willamette Valley	4,062	5,949	46%	1%	1%	0%
Total	47,740	61,090	28%	3%	4%	1%

Fig. 9. Change of Vacant Units for Seasonal, Recreational, or Occasional Use by Region.
Source: American Community Survey, Vacancy, 2005–2009 and 2012–2016 by county (aggregated to region).

attributed to Airbnb or other factors. But the increase in the share of total units that are seasonal suggests that long-term rental supply is becoming more constrained while population in these regions grow.

We analyzed whether revenue generated from STRs (operated as an entire house or whole unit) exceeds rents of long-term rentals or mortgage costs, focusing on the 10 cities for which Airbnbs are most prevalent in the state. Fig. 10 shows property owners in seven of the 10 cities (Bend, Depoe Bay, Joseph, Lincoln City, Manzanita, Rockaway Beach, and Seaside) can generate more annual revenue from STRs than they can from standard long-term rental units. Therefore, in these cities, there may be motive for property owners to operate STRs rather than renting properties as long-term rentals. It is important to note that the average unit with an STR may differ from the average rental or mortgaged unit in terms of quality and location.

Cities in Oregon	Airbnb		ACS	
	Average Annual Revenue	Average Annual Revenue (Max)	Average Annualized Rent	Average Annualized Mortgage
Ashland	$10,185	$59,876	$12,456	$20,208
Bend	$17,184	$157,773	$12,972	$18,648
Depoe Bay	$14,357	$59,288	$12,264	$18,636
Hood River	$9,572	$81,215	$13,488	$20,016
Joseph	$18,206	$64,836	$7,980	$14,232
Lincoln City	$12,494	$117,250	$10,080	$18,804
Manzanita	$17,208	$90,051	$10,548	$24,432
Rockaway Beach	$16,704	$98,481	$8,316	$14,556
Seaside	$17,886	$198,425	$10,704	$19,356
Sisters	$11,335	$48,000	$12,312	$19,068
Average	**$15,707**	**$198,425**	**$11,112**	**$18,796**

Fig. 10. Indication of Competition between Short-Term Rentals (whole unit) and Long-Term Housing.
Source: AirDNA, Property Data for whole unit rentals, Retrieved 2017. U.S. Census, American Community Survey, 2010 and 2015.

4.4. Perceptions of short term rentals

The survey of city managers and planners asked about perceptions of STRs held by residents, local elected officials, and businesses. Among other things, we asked respondents to discuss the benefits and costs of STRs in their cities. In this section, we summarize perceptions of STRs by survey respondents.

In general, survey respondents indicated that while residents shared mixed perceptions about STRs, local elected officials and businesses within the accommodation sector viewed STRs as less problematic. Respondents who indicated that STRs may be more problematic in their own community (compared to other Oregon cities or comparable cities across the U.S.) tended to agree or strongly agree that STRs impacted the availability of affordable and workforce housing (78% of respondents), long-term rental housing (78% of respondents), and owner-occupied housing (56% of respondents).

Cities in regions with the highest prevalence of STRs do not necessarily believe they have too many STRs. Only 14% of respondents from Central Oregon believed they had too many STRs and no jurisdiction from the North Coast believed this. In the South Coast

however, 13% of the cities surveyed believed they had too many STRs.

Respondents indicated that the benefits of STRs include: providing economic development benefits, encouraging tourism spending in new areas, generating increased tax revenue to areas with few traditional lodging types, filling a market gap, and ensuring better maintenance of homes. STRs provide benefits including their ability to provide TLT revenue, to support tourism activities, and to support cities that rely on tourism. For instance, they serve a market need by providing additional lodging options (especially for cities without any traditional accommodation types) and thus, STRs bring in tourists that might not have otherwise visited. Furthermore, they provide income and employment opportunities, allowing homeowners to get extra use out of their properties (thereby making homes more affordable).

Survey respondents indicated that STRs economically weaken cities by impacting resources such as the availability of housing (especially affordable and rental housing) and police and city staff time who deal with complaints from neighbors and business owners. Over half of survey respondents indicated that residents have raised nuisance issues within the last five years. Some of these cited nuisance complaints include: parking concerns (78%), noise concerns (67%), garbage and outdoor clutter concerns (56%), and high occupancy levels (48%). Furthermore, respondents indicated concern over the possibility that hosts could be individuals or companies from out of the state that take their revenue with them. Finally, respondents indicated that STRs tend to be operated seasonally, leading to a fluctuation in the economic impacts.

4.5. Addressing short-term rentals

The survey asked whether cities were currently regulating STRs or considering regulation in the next five years. Thirty-five percent of cities responded that they already have an adopted legal framework to manage STRs. These cities' primary motivations for addressing STRs were to mitigate potential impacts before STRs became a burden, to safeguard becoming overrun by STRs, and to reap benefits of increased TLT revenue. Cities that have yet to address STRs but plan to develop regulations in the next five years indicated the desire to formalize the activity and rules associated with it (legitimize existing situations, develop clear and objective standards, and promote fairness).

Sixty-five percent of surveyed cities have yet to address STRs (or commonly, transient rentals or vacation rentals) through regulation. Of the 35% that have adopted a policy, only 20% impose a TLT (with a mean tax of 7.5%) and only 18% impose fees for a STR license or permit (with a mean fee of $735). See Fig. 11.

Responding cities commonly regulate STRs by relying on concentration caps/limits or occupancy requirements. Restricting STRs to certain zones, adopting guest behavior standards, or making properties subject to review and inspection (making determinations on case-by-case basis) have also been put into place to mitigate nuisance and promote health, safety, and wellbeing.

We asked respondents about whether their current regulations were effective at reaping benefits of STRs while mitigating negative impacts of STRs. Most respondents (60%) find their regulations for STRs, or lack thereof, to be neither effective nor ineffective in managing the economic benefits or negative impacts of short-term rentals. Approximately 21% found their regulations, or lack thereof, to be very or somewhat effective and 18% found them very or somewhat ineffective. It is notable that 76% of those that found their policies/lack of policies to be neither effective or ineffective did not actually have any regulatory framework (see Fig. 12). This can be explained in that many smaller cities in Oregon still do not have many STRs (if any) and thus, do not have many of the same concerns as other cities (e.g. around nuisance issues or housing supply concerns). Noting that STRs are uncharted territory for many cities, it may take time to adopt the appropriate regulatory framework that works best for each community.

Frequency	Fee Rate	Tax
Mean	$735	7.5%
Median	$550	8.0%
Standard Deviation	$739	2.4%
Range	$2,200	8.6%
Min	$50	1.8%
Max	$250	10.4%

Fig. 11. Frequency for Fee and Tax Rates.
Source: Responding to Short-Term Rentals in Oregon Survey, y-Q20 and y- Q21, 2017.

In considering how cities are enforcing STRs, ordinances were most commonly enforced by issuance of administrative citations (62%) and fines (58%). In addition, many respondents commented that enforcement was a challenge.

5. Discussion

As jurisdictions begin to assess the impacts of STRs and understand how different community members perceive STRs, more consider the adoption of policy. Integrating STRs into the formal sector through regulations and enforcement has been cited as an important, often crucial next step.

Using best practices as a guide and planning director/city manager testimony as support, we find that the development of STR policies is useful while extensiveness lies in the hands of each community. Literature and survey responses indicate that a centralized, top down approach to defining, taxing, and regulating STRs from the state level may not be appropriate or the most effective approach to managing STRs. The prevalence and impact of STRs varies across cities and regions, where resort communities face more severe issues than others. Further, cities more severely impacted by STRs still may have a more positive perception of STRs than cities less impacted. Accordingly, coupled with the use of real STR data, cities looking for advice on how to best regulate STRs should initiate a community conversation on the topic. Ideally, this would involve informing community members about the impacts STRs are having in the community and greater region while addressing questions about STRs, and the sharing economy more generally. At minimum, all cities (whether unfazed or not impacted by STRs) should understand the extent to which they are willing to influence and be influenced by STRs and the sharing economy.

Once planners gain a foundational understanding of the community's viewpoint, regulation of the industry can commence. If the community is relatively unfazed or indifferent (potentially stemming from a lack of STRs or harsh impact), it is recommended they construct loose and minimal regulations: define them, tax them, and require registration.

The small cities we surveyed face issues with capacity and staffing to address the negative impacts posed by STRs and to enforce regulations. Small communities stand to benefit from tax revenue and economic impacts of tourism. But, small communities may lack the capacity to mitigate the negative impacts of Airbnbs. After this study was completed, the state passed a bill (HB 2064) that mandates that Airbnb collect TLTs for all cities beginning June 1, 2018. This statewide effort will ensure that individual cities do not have to fight individual battles with Airbnb and ensures that local communities will recoup the TLTs from Airbnbs. TLTs could generate revenue to cover the administrative costs of monitoring and enforcing regulations so that small cities can reap the benefits of STRs while minimizing the negative impacts.

Cities wishing to adopt stronger controls to mitigate certain impacts, may adopt restrictive zoning measures that limit the total number of STRs there are in certain areas, or in the community as a whole. Measures that allow STRs to be a resident's primary dwelling unit may diminish "hotelization" in cities or across an entire region. Capping the total amount of STRs allowed in a particular neighborhood may have a

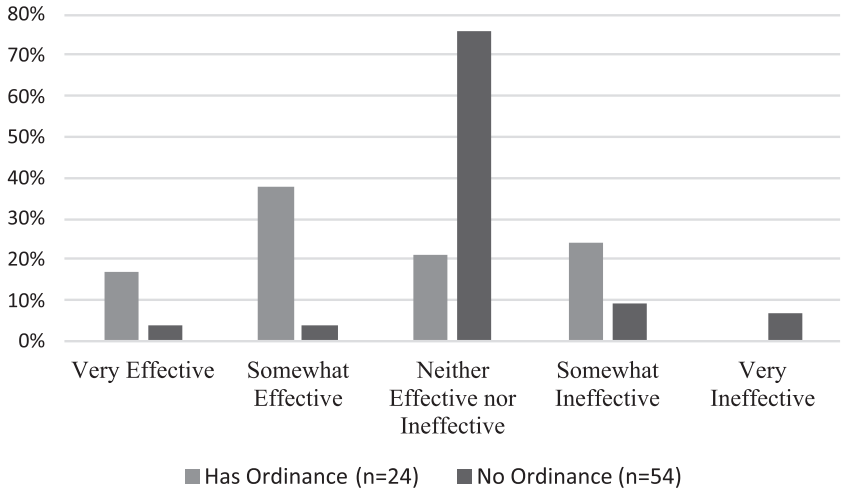

Fig. 12. Perceived Effectiveness of City Efforts to Manage Short-Term Rentals, by Ordinance or Lack of Ordinance.
Note: 65% of responding cities (n = 54) have not adopted an ordinance related to STRs.
Source: Responding to Short-Term Rentals in Oregon Survey, Q25, 2017.

similar effect. Along these lines, some cities have opted to develop a buffer distance between STRs (i.e., one STR may not be within 250 ft. of another). Implementing a clause that revokes a STR permit for properties that receive more than five nuisance complaints in a calendar year can also mitigate similar concerns. Levying a higher TLT may make visitors less inclined to using the service in a particular community.

6. Conclusions

This study examined how STRs are affecting small cities in Oregon. This growing phenomenon has been studied in large cities and metropolitan areas, but the impacts on small cities have not been examined. STRs may be of even greater concern to smaller communities which may be more dependent on TLTs, lack staff capacity, and have a smaller amount and share of long-term rental housing compared to larger cities. Airbnbs are pervasive: all 36 counties and 75% of the 237 cities with populations of under 100,000 have Airbnbs in their cities. Airbnbs constitute over 5% of the housing stock in 16 cities. While hosts generated $82 million in revenue, only 11 cities and four counties charge TLTs, but the state levies a 1.8% tax on all Airbnbs in the state. By imposing TLTs (as now required by HB 2064), cities can generate revenue needed to regulate the some of the negative impacts of STRs. In total, 38% of rentals are whole homes and rented more than 30 days in a year, signaling potential impacts on long-term rental supply, particularly in a few cities with tourist economies and housing affordability issues. Finally, while cities perceive Airbnb to be an issue, only 35% of survey respondents are currently regulating STRs. The regulations imposed vary drastically, even within smaller cities in the same state. Some regulations included requiring permits, imposing TLTs, and limiting the concentration or location of STRs.

The perceived positive and negative impacts of STRs vary across cities. Some cities indicated that STRs provide great benefits in their ability to provide lodging taxes and support tourism. In some cities, they serve a market need by providing additional lodging options (especially for cities without any traditional accommodation types) and thus, they bring in tourists that might not have otherwise visited. In other cities, planners feel that STRs negatively impact the availability of affordable housing, long-term rental housing, and owner-occupied housing. Further, several planners noted nuisance issues including parking, noise, garbage and clutter, and high occupancy levels. For small cities in Oregon, it's clear that STRs have both positive and negative impacts. But cities struggle to effectively regulate STRs – only 35% of cities are regulating STRs and many of the regulating cities (45%) find their regulations are not effective at addressing the issue. For the 65% of cities that are not regulating, 92% of the cities reported that their approach is not effective at addressing the issue. Further, respondents noted that enforcement is a challenge. This is particularly problematic for these smaller cities that lack resources and administrative capacity.

As cities consider regulations, they must consider how to mitigate the negative externalities (protect neighborhoods, preserve needed housing, and maintain affordable rents), all the while using STRs as a solution to some of the challenges local governments face today. We find that the answer lies in the crafting of effective and equitable STR policies.

Potential policy responses are vast. Despite which regulatory framework is implemented, it is important to start with fairness and flexibility in mind. Revisiting existing regulations is important to ensure equitability and to ensure the community is not squandering benefits that STRs and the sharing economy provide. A necessary step for any community is the development of performance metrics to evaluate how their policy strategy works. Evaluation of policies on an ongoing basis should be expected in any scenario of regulation. At minimum, this will offer cities the opportunity to compile much needed data and hard evidence on STRs, which is of critical importance today. At best, this will allow cities to improve their management techniques and/or better respond to community questions regarding the balance between property rights and the right to decent, affordable housing.

As Airbnb and similar platforms continue to grow and shape our built environments and perceptions of housing equity, having a handle on this activity is parallel to having a handle on the impact technology has on our future. Cities should employ purposeful regulations that allow innovative activities to solve problems. Respecting the sharing economy, while paying attention to its influence and adapting appropriately, is key.

Declaration of interest

None.

Acknowledgments

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Appendix A. Survey Instrument

Greetings,

Thank you for participating in the Responding to Short-Term Rentals in Oregon survey! Please note the following:

Short-term rentals can be characterized as housing units rented or leased for less than 30 days; however, they are not defined by state or federal authorities. If you feel like you are not the best person in your community to answer questions about short-term rentals, please forward this survey to the appropriate City staff person.

The purpose of this survey is to better understand existing perceptions of and perspectives on short-term rentals in Oregon. We also want to gauge existing policy frameworks. Completing this survey should take you approximately 15–20 min. There are 32 questions.

By continuing you consent to this survey.

First, we would like to understand how residents in your community generally perceive short-term rentals.

Q1: In the last five years, have residents raised the issue of short-term rentals?

- ○ Yes
- ○ No
- ○ I Don't Know

Q2: What issues have they raised? (check all that apply)

- ☐ Parking Concerns
- ☐ Excessive Traffic
- ☐ Noise Concerns
- ☐ High Occupancy Levels
- ☐ Garbage or Outdoor Clutter Concerns
- ☐ Other: _____

Q3: How have residents raised the issue of short-term rentals? (check all that apply)

- ☐ They have come to city council or commission meetings.
- ☐ They have called in to make verbal testimony or sent in written testimony.
- ☐ They have written nuisance complaints.
- ☐ They have provided written statement (not nuisance).
- ☐ They have raised the issue to city staff.
- ☐ They have raised the issue to the police.
- ☐ Other: _____

We would also like to understand YOUR perspective on short-term rentals and YOUR understanding of how various actors generally perceive short-term rentals in your community.

Q4: From your perspective, in what ways, if any, do short-term rentals provide **economic benefit** to your community? [open-ended]

Q5: From your perspective, in what ways, if any, do short-term rentals **economically impact (or weaken)** your community? [open-ended]

Q7: From your perspective, please indicate your level of agreement or disagreement with the following statements.

	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	I Don't Know
Our residents perceive short-term rentals to be a problem.	○	○	○	○	○	○
Our local elected officials perceive short-term rentals to be a problem.	○	○	○	○	○	○
Businesses within the accommodation sector perceive short-term rentals to be a problem.	○	○	○	○	○	○
Our issues with short-term rentals are more challenging than other Oregon communities.	○	○	○	○	○	○
Our issues with short-term rentals are more challenging than other comparable communities across the United States.	○	○	○	○	○	○

Q8: From your perspective, please indicate your level of agreement or disagreement with the following statements.

	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	I Don't Know
Our community has too many short-term rentals.	○	○	○	○	○	○
Our community has a shortage of hotel, motel, and bed and breakfast-type accommodations.	○	○	○	○	○	○
Our community has a shortage of hotel, motel, and bed and breakfast-type accommodations **sometimes** (during certain seasons or events, etc.).	○	○	○	○	○	○

Q9: From your perspective, please indicate your level of agreement or disagreement with the following statements.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	I Don't Know
In our community, short-term rentals fill a gap in the market.	○	○	○	○	○	○
In our community, short-term rentals increase tourism.	○	○	○	○	○	○
In our community, short-term rentals create nuisances.	○	○	○	○	○	○
In our community, short-term rentals evade policies and regulations.	○	○	○	○	○	○
In our community, short-term rentals impact the availability of **long-term rental housing**.	○	○	○	○	○	○
In our community, short-term rentals impact the availability of **owner-occupied** housing.	○	○	○	○	○	○
In our community, short-term rentals impact the availability of **affordable and workforce housing**.	○	○	○	○	○	○

We would also like to ask you some questions about policy and regulations.

Q10: Does your community incentivize short-term rentals?

○ Yes

○ No

○ I Don't Know

Q11: In what ways does your community incentivize short-term rentals? [open-ended]
Q12: Please indicate how permissive your community's land use ordinances are to short-term rentals.

- ○ Very permissive. Short-term rentals are allowed in all residentially-zoned areas
- ○ Somewhat permissive. Short-term rentals are allowed in some residentially-zoned areas.
- ○ Not permissive. Short-term rentals are banned outright in all residentially-zoned areas.
- ○ Other: _____

Q13: Does your community have an adopted, legal framework (e.g. ordinance, set of rules, procedural steps) for regulating short-term rentals?

- ○ Yes
- ○ No

If Yes – to Q13:
Q14: How does your community officially define short term rentals? [open-ended]
Q15: When did your community create its policy for regulating short-term rentals? (enter year or date) [open-ended]
Q16: If possible, please provide a web-link to your policy's location. [open-ended]
Q17: Briefly, why did your community choose the particular policy or policies it did to regulate short-term rentals? [open-ended]
Q18: Does your community's policy distinguish between different types of short-term rentals? (e.g. short-term rentals in apartments vs. single-family dwellings; short-term rentals that are a single room vs. the whole home; short-term rentals that are within primary dwellings vs. secondary dwellings, etc.).

- ○ Yes
- ○ No
- ○ I Don't Know

Q19: Does your community require short-term rental operators to get a license or permit? If yes, how much do they cost?

- ○ Yes: _____
- ○ No

Q20: The State of Oregon requires short-term rental operators to pay an occupancy tax of 1.8%. Does your community place a city-specific tax obligation (e.g. transient room tax) on short-term rental operators? If yes, please describe what that obligation is.

- ○ Yes: _____
- ○ No

Q21: What enforcement strategies does your City use for short-term rentals? (check all that apply)

- ☐ None
- ☐ Issuance of administrative citation
- ☐ Fine
- ☐ Court Mandate
- ☐ Other(s): _____

If no to Q13:
Q14: Has your community ever considered adopting a legal framework (e.g. ordinance, set of rules, procedural steps) to regulate short-term rentals?

- ○ Yes, in the past (but decided against pursuing)
- ○ Yes, currently (but not yet adopted)
- ○ No
- ○ I Don't Know

Q15: What policy options have you considered? (check all that apply)

- ☐ Application and collection of an occupancy or trade tax
- ☐ Annual registration
- ☐ Permit requirement
- ☐ Business license requirement
- ☐ Time period restriction
- ☐ Guest limit restriction
- ☐ Banning in some residential zones
- ☐ Banning in all residential zones
- ☐ Adherence to dispersion requirements
- ☐ Adherence to quite hours
- ☐ Requirement to notify neighbors
- ☐ Operated by principle owner only
- ☐ Permitted in owner-occupied buildings only
- ☐ Requirement of liability insurance
- ☐ Requirement of signed declaration that unit is up to code
- ☐ Other: _____

Q16: What are the reason(s) your community chose/chooses not to regulate short-term rentals? [open-ended]

Q17: How does your community unofficially define short-term rentals? [open-ended

Q18: From your perspective, what is preventing your community from adopting a policy framework for short-term rentals? (If nothing, write N/A) [open-ended]

Q19: From your perspective, what is encouraging your community to adopt a policy framework for short-term rentals? (If nothing, write N/A) [open-ended]

Q20 (N) Q20: From your perspective, do you perceive your community has a need to develop policies regulating short-term rentals?

- ○ Yes
- ○ No
- ○ I Don't Know

Q21: Does your community expect to develop or adopt short-term rental policies in the next five years?

- ○ Yes
- ○ No
- ○ I Don't Know

Q22: What is your community's motivation for potentially developing or adopting policies in the next five years? [open-ended]

Q23: If residents and elected officials do not bring the conversation about short-term rentals up, would your community still consider putting policies in place to address them?

- ○ Yes
- ○ No
- ○ I Don't Know

Q24: What resources or tools, if any, would be helpful for starting or completing the process of developing policies for short-term rentals? [open-ended]

Q25: Do you think your community's policies for short-term rentals, or lack thereof, have been effective or ineffective in managing the economic benefits or negative impacts of short-term rentals?

- ○ Very effective
- ○ Somewhat effective
- ○ Neither effective nor ineffective
- ○ Somewhat ineffective
- ○ Very ineffective

Q26: Is there anything else you would like to comment on about the topic of short-term rentals? [open-ended]

Before you go, we would like to know a little bit about you.

Q27: What city do you work for?

Q28: What is your role at the City?

- ○ City Manager
- ○ Planning Director
- ○ Staff Planner
- ○ City Administrator, Recorder, or Clerk
- ○ Other: _____

Q29: If you would like to receive a copy of the final report, enter your email address below (this will be kept anonymous).

_____

Q30: Has your community gathered any information on short-term rentals (generally or specific to your community)?

○ Yes

○ No

Q31: What kind of information have you gathered? [open-ended]

Q32: Are you willing to be interviewed or contacted if we have a question about any of the responses you have provided? If so, please enter an email address below.

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Date	Revisions
8/10	Revision due to ORD 2009-2722
12/08	Annexations and zone changes
12/07	Revision due to ORD 2007-2755
9/07	Revision due to ORD 2007-2678
11/06	UGB Amendment per ORD 2006-2660 and annexations
10/06	Springbrook Specific Plan amendment per ORD.2006-2657
6/06	Annexation and zone additions
3/06	Revision due to correction
6/05	Revision due to zone addition and changes
6/04	Revisions due to annexation and zone changes
3/04	Revision due to zone addition
5/03	Revision due to zone changes
4/03	Institutional District revision
11/02	Revision due to annex and zone additions
7/02	Revision due to annex and zone changes
5/02	C-2/C-3 revision & Civic Corridor addition per ORD.2002-2561
3/01	Revisions due to annex and zone changes
1/00	Springbrook Oaks Specific Plan per ORD. 99-2517
11/98	Institutional Zoning
1/97	Adopted Stream Corridor

City of Newberg, Oregon

NEWBERG ZONING MAP

Including the Urban Growth Boundary

- Interim Industrial Use Overlay
- Airport Industrial Overlay
- Airport Residential Overlay
- Institutional Overlay
- Civic Corridor Overlay
- Urban Growth Boundary
- Stream Corridor
- City Limits

Zones

ZONING

- C-1 Neighborhood Commercial
- SD/V Springbrook District - Village
- SD/NC Springbrook District - Neighborhood Commercial
- SD/H Springbrook District - Hospitality
- C-1/SP Specific Plan
- C-2 Community Commercial
- C-2/LU Community Commercial/Limited Use
- C-2 PD Planned Unit Development
- C-2/SP Specific Plan
- C-3 Central Business District
- C-3/LU Central Business District - Limited Use
- CF Community Facility
- CF/RD Community Facility Riverfront District
- I Institutional
- M-1 Limited Industrial District
- M-1/SP Specific Plan
- AI Airport Industrial
- M-2 Light Industrial District
- SD/E Springbrook District - Employment
- M-3 Heavy Industrial District
- R-1 Low Density Residential
- SD/LDR Springbrook District - Low Density Residential
- R-1/PD Planned Unit Development
- R-1/0.1 Low Density 0.1 d.u./ac.
- R-1/0.4 Low Density 0.4 d.u./ac.
- R-1/6.6 Low Density 6.6 d.u./ac
- R-1/SP Specific Plan
- R-2 Medium Density Residential
- R-2 PD Planned Unit Development
- R-2/RD Riverfront District
- R-2/SP Specific Plan
- SD/MRR Springbrook District - Mid-Rise Residential
- R-3 High Density Residential
- R-3 PD Planned Unit Development
- R-3/SP Specific Plan
- R-P Residential Professional
- R-P/SP Specific Plan
- R-P/LU Residential Profession - Limited Use Overlay
- AR Airport Residential

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This map is created from various data sources and is subject to change without notice. This map is intended for general planning purposes only.

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City of Newberg

Map created by Jan Wolf
Public Works Department - Engineering

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The most current edition of this map can be found at www.newbergoregon.gov

Exhibit 21 page 1

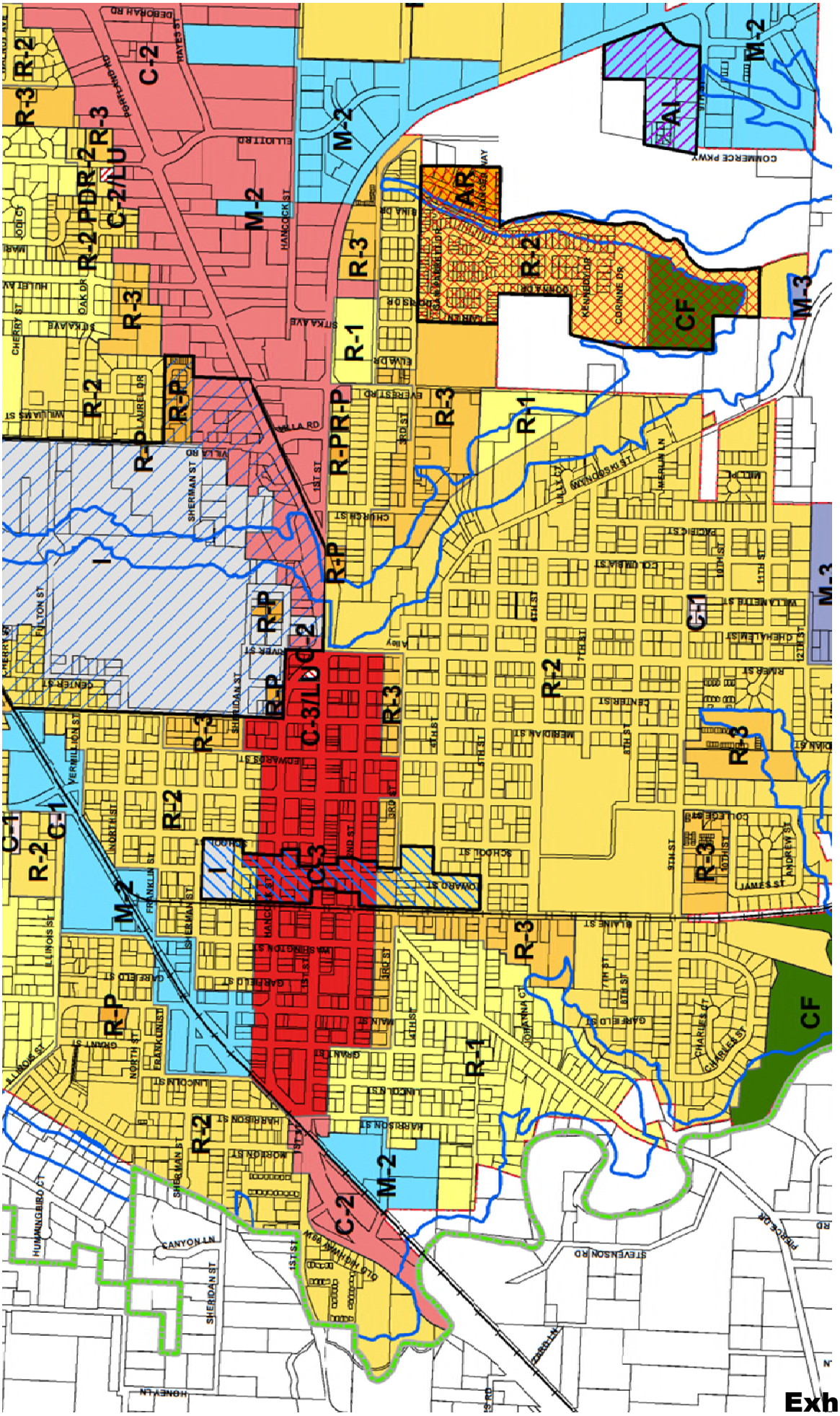

Exhibit 22 page 1