Title

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PEER-TO-PEER (P2P) CARSHARING: EXPLORING PUBLIC PERCEPTION AND MARKET CHARACTERISTICS IN THE SAN FRANCISCO BAY AREA

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ABSTRACT

Peer-to-peer (P2P) carsharing is an innovative approach to vehicle sharing in which vehicle owners temporarily rent their personal automobiles to others in their surrounding area. P2P carsharing belongs to the larger sharing economy, an economic model premised on the notion of collaborative consumption as opposed to ownership. This study examines current public perception of P2P carsharing and potential market characteristics through an intercept survey conducted in the San Francisco Bay Area. Three hundred respondents from 14 locations in San Francisco (N=150) and Oakland (N=150) were polled on their existing attitudes towards and perceptions of classic carsharing, peer-to-peer carsharing, and the sharing economy. The survey results indicate that there remains a low awareness of P2P carsharing, with under 50% of San Francisco respondents and 25% of Oakland respondents having heard of the term. Approximately 25% of surveyed vehicle owners would be willing to share their personal vehicles through P2P carsharing, citing liability and trust concerns as primary deterrents. Those who drive almost every day were less open to renting through P2P, while those who used public transit at least once per week expressed a greater interest in it. Overall, the results of this study indicate considerable interest in P2P carsharing—60% of San Francisco respondents and 75% of Oakland respondents without vehicle access would consider renting a P2P vehicle. The top three reasons for using P2P carsharing include: convenience and availability, monetary savings, and expanded mobility options. Further outreach and education are needed to raise awareness of this mobility innovation.

KEY WORDS: Peer-to-peer carsharing, classic carsharing, sharing economy, public perception, market characteristics

INTRODUCTION

Carsharing is an alternative to car ownership that enables individuals to enhance their mobility without the maintenance and storage costs associated with private vehicle ownership. Peer-to-peer (P2P) carsharing is an innovative shared-use vehicle model under which privately-owned vehicles are available for use by members in the surrounding area on an hourly or daily basis.

P2P start-ups belong to a suite of online organizations that have helped to facilitate the growth of the “sharing economy” and “collaborative consumption” model. These online organizations provide an Internet platform through which individuals are able to share physical items. These include websites, such as JustShareIt.com, which facilitate equipment sharing; Airbnb.com and Couchsurfing.com that enable one to locate short-term lodging; and Zimride.com and Car.ma, which connect drivers and passengers. The proliferation of smart phone technology and social networking sites is a noteworthy cultural shift that has influenced the development of P2P carsharing. The sharing economy is developing a growing presence in society, and P2P carsharing is one of many shared-use mobility services that is focused on transportation resource sharing.

Given the recent growth and development of the P2P carsharing model, gauging the public perception of this service can further understanding of its market potential, as well as opportunities and barriers to adoption. This study evaluates the relationships among car ownership, frequency in car and public transit use, and awareness and perception of P2P

carsharing through an intercept survey (N=300) that was collected in the spring and summer of 2013 in Oakland and San Francisco, California. We examine public awareness of carsharing, including similarities and differences in attitudes towards classic roundtrip carsharing models, such as CityCarshare and Zipcar, and P2P carsharing services including Getaround and RelayRides. As part of this research, we identified key elements of P2P carsharing that are most attractive to users, as well as those that pose the most notable adoption barriers. The survey also considers the potential relationship between participation in the larger sharing economy (e.g., house-sharing, ridesharing, carpooling, classic carsharing) and openness to P2P carsharing.

The paper has five key sections. First, we provide a literature review of carsharing and the sharing economy. Next, the survey methodology is discussed. Third, a demographic analysis of the survey population is presented. In the following two sections, the results of the intercept survey and conclusions are discussed.

LITERATURE REVIEW

While sharing resources is not a fundamentally new model of social interaction, the presence of a "sharing economy" is a growing, innovative concept. The sharing economy is an economic model based on "sharing" assets among groups of people rather than "owning" them (*1*). It is described by San Francisco Planning and Urban Research (SPUR) as "fundamentally capitalist yet simultaneously more socially and environmentally conscious," and it is hailed by many as an opportunity to enhance the sustainability of the current economy while simultaneously yielding various additional co-benefits (e.g., emission reduction, fuel savings) (*2*). High levels of online connectivity, "living local" community-oriented awareness, and heightened cost consciousness and environmental issues have aided the sharing economy in gaining traction (*1*). The sharing economy allows for the sharing of a wide range of property, such as home-sharing, ridesharing, bikesharing, carsharing, and more.

Carsharing is one of the most popular subsets of the sharing economy and operates within a number of different frameworks. At present, there are three main forms of carsharing: 1) classic, roundtrip carsharing; 2) one-way (or point-to-point) carsharing; and 3) P2P carsharing (usually roundtrip). A classic, roundtrip carsharing organization is defined as a for-profit or non-profit carsharing organization (CSO) that provides vehicle access on an hourly or daily basis to its members, who typically pay a monthly or annual membership fee. The CSO usually operates an online vehicle reservation system and oversees vehicles located at specified parking spaces within local neighborhoods, college campuses, or businesses. Individual carsharing vehicles are equipped with remote-access technology that allows members to access their reserved vehicle during their reservation period with a "fob" or keycard. Carsharing allocates the fixed costs of owning a vehicle over many users and reduces the inefficiency of personal vehicle ownership, since automobiles remain idle on average of 95% of the time (*3*). As of January 2013, there were over a million carsharing users in North America alone (*4*). One-way carsharing enables a carsharing member to return a shared vehicle to a different location from where it was picked up.

Trust is critical to the success of the sharing economy and its ongoing growth. Airbnb, a site that enables individuals to share their living spaces with others, has placed an emphasis on cultivating trust among its users. After an incident in which an Airbnb host's property was vandalized by a guest (*5*), the site launched a Trust & Safety Department and instituted a host insurance guarantee that currently insures hosts for up to US$1 million per booking (*6*; *7*). Social media integration is likewise an important tool that Airbnb uses to increase customer trust.

The carsharing and ridesharing sectors have also had a challenging time establishing trust among users. With respect to ridesharing, users are sometimes wary of riding in a vehicle belonging to someone they do not know. Some platforms have sought to address concerns around trust by limiting ridesharing to a closed environment, such as a workplace or university. Other approaches rely primarily on rating systems and integration with other social networks to establish credibility among users or instead to enable users to readily share with individuals already within their extended social networks (*9*).

P2P Carsharing

P2P carsharing, the focus of this paper, employs privately-owned vehicles made temporarily available for shared use by an individual or members of a P2P company, with pickup and drop-off locations agreed upon between the two parties (typically roundtrip). The owners of these privately shared vehicles profit from transactions with renters, although in most cases, a P2P third-party company facilitates the rental. P2P companies provide insurance and operate websites to connect vehicle owners with renters. In exchange for providing these services, P2P operators in turn keep a portion of the usage fee. Although vehicles shared within a P2P platform are generally older than those that comprise classic carsharing fleets, P2P carsharing offers a greater selection of locations, vehicle types, and daily and hourly rental prices than classic and one-way carsharing. In June 2013, there were nine personal vehicle sharing operators in North America (one of nine in pilot phase), three planned, and eight defunct in North America (*4*).

By directly connecting vehicle owners with would-be renters, some argue that P2P carsharing is a more direct manifestation of collaborative consumption than classic or one-way carsharing (*10*), as it promotes the sharing of already-owned underused assets in contrast to a company-maintained vehicle fleet. In addition to facilitating the sharing of existing resources, the P2P model can significantly reduce operating costs: vehicle capital comprises almost 70% of total operating expenses for classic carsharing companies, for example (*1*). Nevertheless, P2P carsharing faces notable adoption barriers, which include: insurance cost and availability, fear of sharing and lack of trust, challenges around balancing revenue and pricing, the expense of technological solutions, vehicle availability, and assurance of vehicle reliability (*1*).

Liability issues are also critically important to P2P carsharing. Personal vehicle insurance policies are generally not valid while a vehicle is being rented or leased to others and using one's personal car for commercial enterprises can lead to cancellation of insurance coverage in many states (*11*; *12*). California, Oregon, and Washington have passed laws protecting car owners who engage in personal vehicle sharing (AB 1871, HB 3149, and HB 2384 respectively). These laws categorize shared personal vehicles as a non-commercial use, which enables them to be insured through a secondary policy while being rented. When an owner uses his or her private vehicle, he or she is responsible for having a personal insurance policy; however, when it is being shared/rented, a P2P company provides a secondary auto insurance policy. In states where no such laws exist, owners are at risk when sharing their vehicle: they assume possible damages and liabilities on behalf of the person renting their vehicle above and beyond the P2P insurance. Furthermore, insurance companies may view personal vehicle sharing as altering the owner's risk profile, which may result in insurance premium spikes or non-renewal of insurance policies (*1*; *12*).

There has been limited research to date on the issue of "trust" within the P2P carsharing model. A 2010 study found that more than half of survey respondents were reluctant to share their personal vehicles with others due to lack of trust. User rating and feedback, operator

screening and selection, and integration with social networks were cited as key mechanisms to help address trust considerations (*1*). This paper seeks to expand the literature that pertains to P2P carsharing by furthering understanding of the public's perception towards this mobility innovation and its potential adoption barriers.

METHODOLOGY

We designed an intercept survey to address the following questions: Have people heard about classic and P2P carsharing? Would people consider participating in P2P carsharing? What aspects of P2P carsharing elicit the most concern from respondents? Do current car owners differ from non-owners in their responses to what they perceive as positive and negative attributes of P2P carsharing? How do car ownership, frequency in automobile and public transit use, and demographics relate to P2P carsharing perceptions? How does openness to P2P carsharing compare to other sharing economy services, such as house-sharing? This section includes a description of the survey implementation, as well as study limitations and response rate.

Survey Implementation

Public perceptions of P2P carsharing and market characteristics, were explored in an on-street intercept survey between February and March 2013 (Oakland, CA) and June and July 2013 (San Francisco, CA). An initial pretest of the survey format led to several modifications, including shortening the survey length. One hundred fifty surveys were administered at nine locations in San Francisco, and another 150 were collected at five locations in Oakland. Figure 1 displays the locations in San Francisco and Oakland where surveys were implemented in addition to the number of surveys conducted per location.

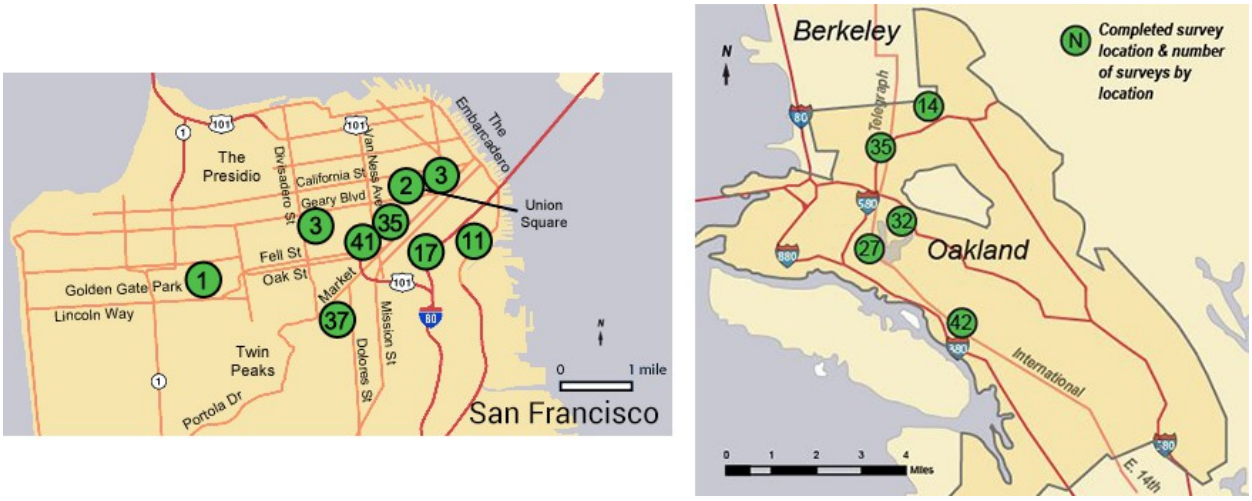


FIGURE 1 Maps of the San Francisco and Oakland locations where surveys were completed and the number of surveys administered at each.

Survey questions were administered verbally in a 10-15 minute intercept survey. While the researcher's verbal inflexion, gestures, and other body language may have exerted influence upon respondent answers, verbally administering the survey allowed researchers to gather information consistently and probe for further information to fully understand participant answers. Moreover, when respondents were unfamiliar with carsharing terminology, verbal

interaction enabled researchers to clarify doubts and ensure understanding of new concepts.

Individuals throughout the survey were randomly selected and approached indiscriminately. No incentives for participating in the survey were provided. The number of refusals was counted and grouped according to whether respondents refused to take the survey or were unable to do so, as they were not from the geographical areas in which the surveys were administered. Check boxes were included in the survey instrument to improve the speed and consistency of the implementation, and researchers manually recorded unique answers.

The survey instrument included actual behaviors (revealed preference) and attitudes and intentions (stated preference). Respondents were asked about their driving patterns, if and what other transportation modes they used, and knowledge of and attitudes toward other resource sharing programs.

Study Limitations and Response Rate

In this study, the survey sample would ideally reflect the characteristics of the adult population of Oakland and San Francisco; however, survey biases resulted in un-equal sampling. The first bias was in regard to survey location (coverage error). The surveys were conducted in public areas and near convenience stores throughout San Francisco and Oakland, which had relatively high levels of foot traffic. To gather information about travel behavior and to control for bias in locations easy accessible by foot, respondents were asked about their automobile ownership, driving frequency and purpose, and public transit use.

Some people may have been less cooperative and unwilling to participate in the survey due to language barriers or other social differences between them and the interviewers. If this nonresponse was correlated with demographics, it could result in a less demographically representative sample of the entire population. During the survey intake process, the number of rejections was tracked to partially understand the possible magnitude of nonresponse bias. A total of 603 people were approached for the survey: 244 in San Francisco and 359 in Oakland. Of these, a total of 303 individuals declined to take the survey: 94 in San Francisco and 209 in Oakland; this reflects a nonresponse rate of 50% overall, with 39% and 58%, respectively, in San Francisco and Oakland. In the next section, we present an overview of the study populations in San Francisco and Oakland, as well as a comparison of each survey sample.

DEMOGRAPHIC ANALYSIS: SAN FRANCISCO AND OAKLAND

Demographic data from the 2010 Census were used for comparison against the demographics of survey respondents to determine how representative the sample was of the total population of San Francisco and Oakland. While respondents were representative of the larger population in terms of gender, significant differences existed in regard to representation of certain age and racial groups.

Respondents between the ages of 25-29 were over-represented within San Francisco (44% of respondents versus 21% of the population), while participants 65 and older were underrepresented (1% of respondents versus 14% of the population). Additionally, African Americans were overrepresented within San Francisco (11% of participants versus 6% of the population), while Asians were underrepresented (21% of respondents versus 33% of the population) (see Figure 2).

	Respondents (N=150)	San Francisco, 2010 Census	Significantly different
White	53%	48%	No
Black/African American	11%	6%	Yes
American Indian/Alaska Native	0%	0%	No
Native Hawaiian & Pacific Islander	0%	0%	No
Asian	21%	33%	Yes
Hispanic, Latino, Spanish origin*	11%	15%*	N/A*

*11% of our sample defined themselves as Hispanic, Latino, or Spanish origin, while the U.S. Census defines this as a separate ethnic category rather than a race.

FIGURE 2 Survey sample age (top) and sample race (bottom) to 2010 City of San Francisco Census data.

As with San Francisco, demographic data from the 2010 Census were used to determine how indicative the demographics of survey respondents were of the larger Oakland population. Among the sample, 53% (N=80) were male, while only 49% of the City of Oakland self-reported as male in the 2010 Census. There were some differences with respect to age between the population of Oakland and the sample, with participants of ages 25-29 overrepresented and those over 60 being underrepresented. In addition, African American and Asian populations were underrepresented in the sample (see Figure 3).

	Respondents (N=150)	Oakland, 2010 Census	Significantly different
White	47%	43%	No
Black/African American	19%	35%	Yes
American Indian/ Alaska Native	2%	1%	No
Native Hawaiian & Pacific Islander	2%	1%	No
Asian	13%	21%	Yes
Hispanic, Latino, Spanish origin*	17%	25%*	N/A*

*17% of our sample defined themselves as Hispanic, Latino, or Spanish origin, while the U.S. Census defines this as a separate ethnic category rather than a race.

FIGURE 3 Survey sample age (top) and race (bottom) compared to 2010 City of Oakland Census data.

Similarities and differences exist among the demographic data collected in San Francisco and Oakland. Both cities were overrepresented in terms of younger respondents and underrepresented in terms of Asian respondents. On average, there were 1.68 cars per household in Oakland, and 1.22 vehicles per household in San Francisco. In Oakland, members of all racial groups were more likely to own a vehicle than not, whereas in San Francisco Asians and Latinos were the only two groups more likely to own a vehicle.

RESULTS

In this section, we present the survey analysis, highlighting significant differences between San Francisco and Oakland, based on awareness of carsharing terminology, travel patterns, vehicle ownership rates, and openness to participating in P2P carsharing and the sharing economy.

Awareness of Classic and P2P Carsharing

The San Francisco survey results show that the majority (84%) of the 150 survey respondents had heard of (includes "aware of" and even "confused about the concept") classic carsharing, although less than half (47%) had heard of P2P carsharing (Figure 4). It is important to note that 10% of respondents were confused about the term "carsharing," as many associated it with carpooling or ridesharing. Awareness of both classic carsharing and P2P was higher among those without car access —91% had heard of classic carsharing, and 40% were aware of P2P carsharing. This may suggest that people without access to an automobile have a heightened awareness of the mobility options available to them.

Awareness showed similar patterns among Oakland respondents, although it was significantly lower in magnitude. As with the respondents in San Francisco, the majority of the 150 Oakland respondents (62%) had heard of classic carsharing, while considerably less (24%) were aware of P2P carsharing, half the rate in San Francisco (Figure 4). Oakland respondents were similar to their San Francisco counterparts in that the 17% of Oakland respondents who were confused about the term "carsharing" had a tendency to equate it with carpooling or ridesharing. Awareness of both classic carsharing and P2P was especially low among those without vehicle access: only 53% had heard of classic carsharing, and only 13% were aware of P2P. These results differed from those of the entire sample, which suggests that people without a car in Oakland may not be fully aware of the mobility options available to them. Overall, San Francisco respondents displayed a greater awareness of classic carsharing and P2P carsharing than their Oakland counterparts. This can reasonably be expected, as carsharing has existed in San Francisco longer than in Oakland.

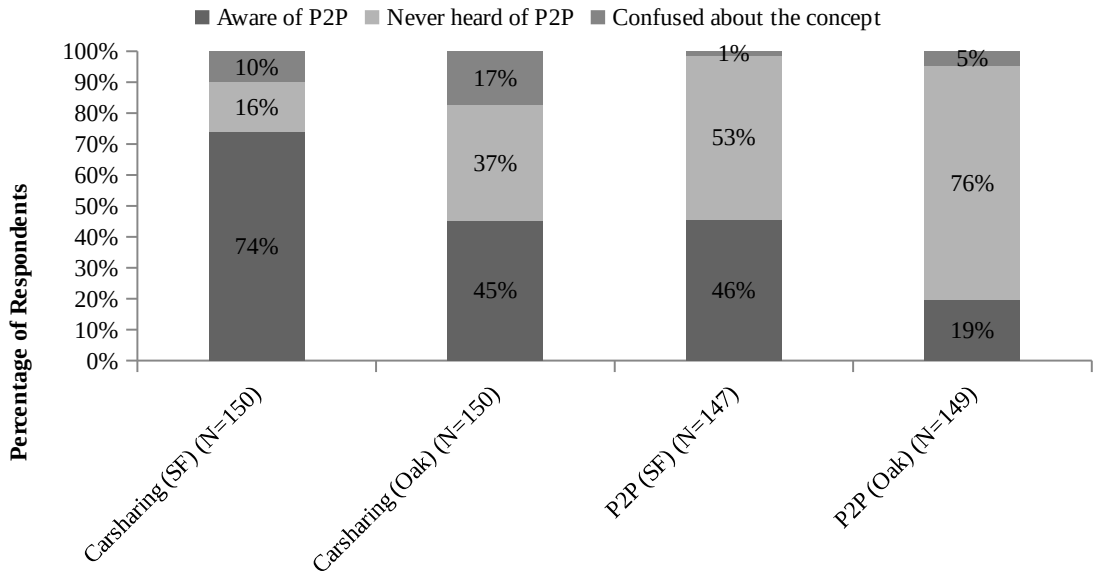


FIGURE 4 Awareness of classic and P2P carsharing in San Francisco (SF) and Oakland (Oak).

Responsiveness to P2P Carsharing and Resource Sharing

Seventy-one percent of San Francisco respondents had access to a vehicle, and 47% were the owners or primary users of that vehicle. Vehicle ownership and access rates in Oakland were higher—77% had access to a vehicle, and 65% were the owners or primary users of that vehicle. These differences, coupled with greater availability of alternative transportation modes in San Francisco compared to Oakland, could explain the different effects of vehicle ownership on willingness to rent a vehicle through a P2P carsharing service in each city. While vehicle ownership was not a distinctive factor for San Franciscans' in this matter (60% positive responses for both sub-groups), primary users and non-primary users had very different responses in Oakland. Within the subgroup of those who did not have access to a car or were not its primary user ("non-primary users"), 73% stated they would be willing to rent a vehicle through a P2P carsharing service, while only 43% of primary users would be willing to do so. On average, a little over half of the respondents would be willing to rent a vehicle through a P2P carsharing service (58%).

By contrast, the vast majority of all respondents would rent an apartment or condo from a home-sharing program like Airbnb (80% on average), while primary users in San Francisco were distinctively more willing to do so (90%). Interestingly, in both cities, 27% of primary users would be willing to rent out their personal vehicle through P2P. This result may suggest that a willingness to register as a P2P vehicle provider may not vary based on location.

FIGURE 5 Attitudes toward P2P and the sharing economy based on vehicle ownership in San Francisco and Oakland.

Openness to P2P carsharing according to age followed a similar pattern in both cities, but San Francisco participant responsiveness was consistently about 10% higher. Younger San Francisco respondents (under 40) were slightly more open to renting a vehicle through P2P carsharing (67%) than their Oakland counterparts (58%). Moreover, these younger respondents were more open to renting a P2P vehicle than older respondents (60% versus 48% in San Francisco; 53% versus 44% in Oakland). Respondents who self-identified as white displayed a marked interest in P2P that surpassed that of all other racial groups in both cities. Attitudes toward P2P carsharing did not vary strongly by gender in either city.

Travel Behavior, Vehicle Ownership, and P2P Carsharing Interest

Respondents were grouped according to the purposes for and frequency with which they drive. Out of all San Francisco survey respondents, 24% drive nearly every day, and 77% stated they use public transportation at least once per week. Of the Oakland respondents, 45% drive nearly every day, and of this, most use their personal vehicle to commute to work. Interestingly, more than half of all respondents (62%) stated they use public transportation at least once per week. The public transportation usage among both cities' samples is likely biased upward by the locations in which the surveys were administered, which were typically pedestrian-friendly areas served by public transit.

A slight correlation existed between driving frequency and survey respondent willingness to consider P2P in both San Francisco and Oakland (Figure 6). Respondents who drove everyday were less likely to consider P2P than those who drove once per week or once a month. Public transit users in San Francisco were almost equally willing to consider P2P regardless of the frequency with which they use public transit, with the exception of occasional (once per week) riders who displayed a marked interest in P2P carsharing (91%) and those who never take public transit who showed no interest in P2P carsharing.

Patterns were similar in Oakland, although respondents who took public transit every day were more likely to consider P2P carsharing than weekly transit riders or than daily transit riders in San Francisco (see Figure 6). Results were varied for marginal drivers (those who drive a few times a month) and occasional public transit users (individuals who ride a few times a month or less), with lower openness possibly resulting from a disinterest in driving or the ability to do so.

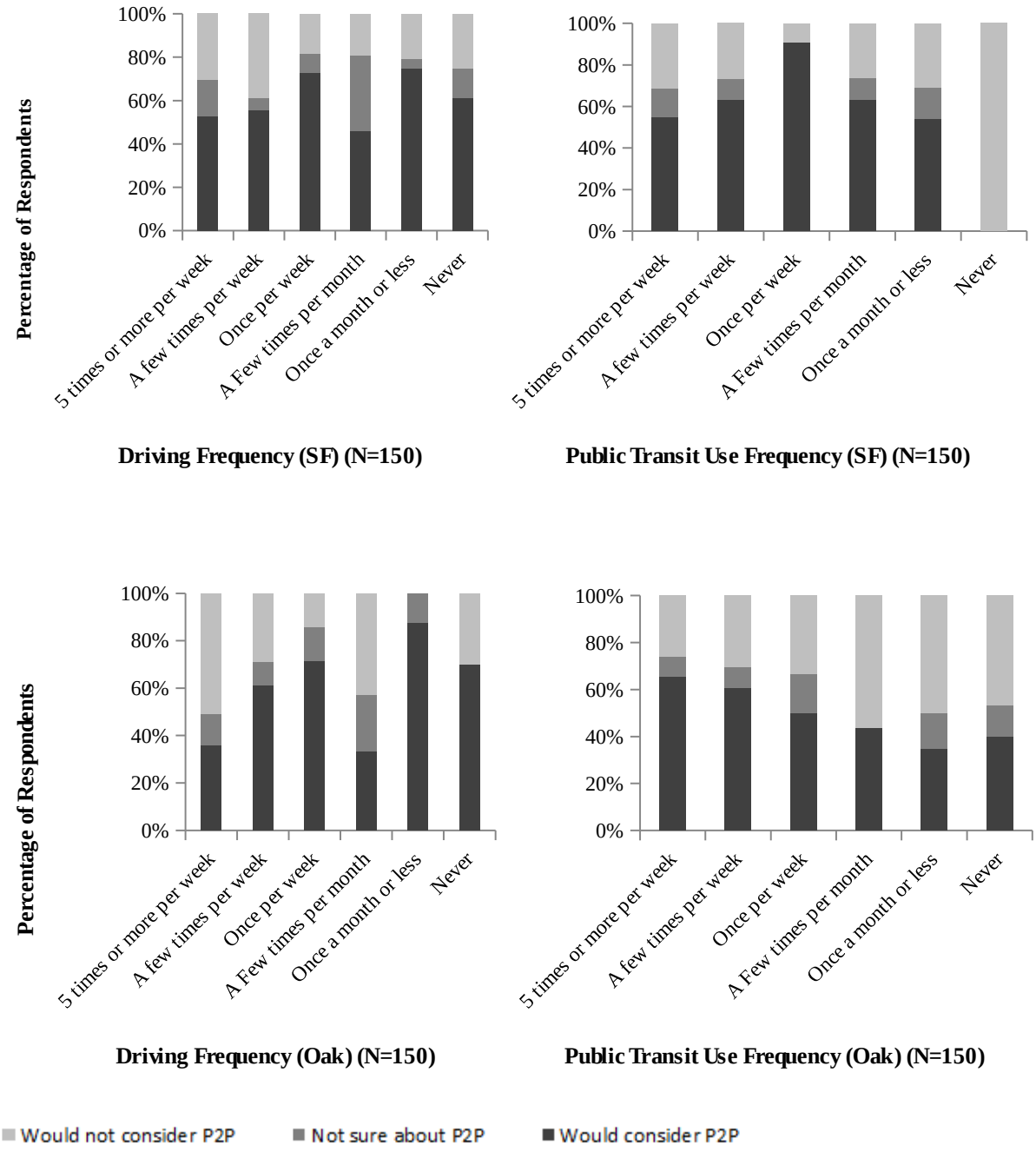


FIGURE 6 Frequency of driving and public transit use vs. openness towards P2P in San Francisco (top) and Oakland (bottom).

Perception of P2P Carsharing Rental

Both San Francisco and Oakland residents considered convenience and availability (the ability to select from a wide variety of vehicle locations and flexibly plan schedules) to be the main attractions of renting a vehicle from a P2P carsharing company (top chart in Figure 7). "Economic benefits," which are those associated with not owning a car and the potentially cheaper rates of P2P carsharing compared to other rental services, were also frequently cited as a

motivating factor, although significantly more frequently in San Francisco than in Oakland. Also, an expansion of mobility options was perceived as a positive attribute of P2P carsharing, although fewer respondents from San Francisco noted this as a positive factor than Oakland (22% versus 36%). In fact, expanded mobility options was the most highly cited factor in Oakland, suggesting that P2P carsharing is more valuable as a mobility option in settings, such as Oakland with less comprehensive and frequent transit options, and more valuable for economic factors in settings, such as San Francisco where public transit mobility is already considerable. Personal interaction, resource sharing, environmental benefits, and being able to get around without having to own a vehicle were similar sentiments expressed throughout the total study population.

A number of San Francisco respondents (10%) preferred the structure and purpose of P2P carsharing to that of supporting a for-profit enterprise, while no Oakland respondents noted this. In contrast, 31% of San Francisco respondents and 11% of Oakland residents stated they would rather rent from an established company with perceived reliability than a P2P carsharing service. Cleanliness, vehicle reliability, liability, and a preference for more established companies were noted as diminishing factors of P2P carsharing (second chart in Figure 7). Overall, San Francisco respondents displayed a higher overall willingness to rent P2P vehicles than their Oakland counterparts.

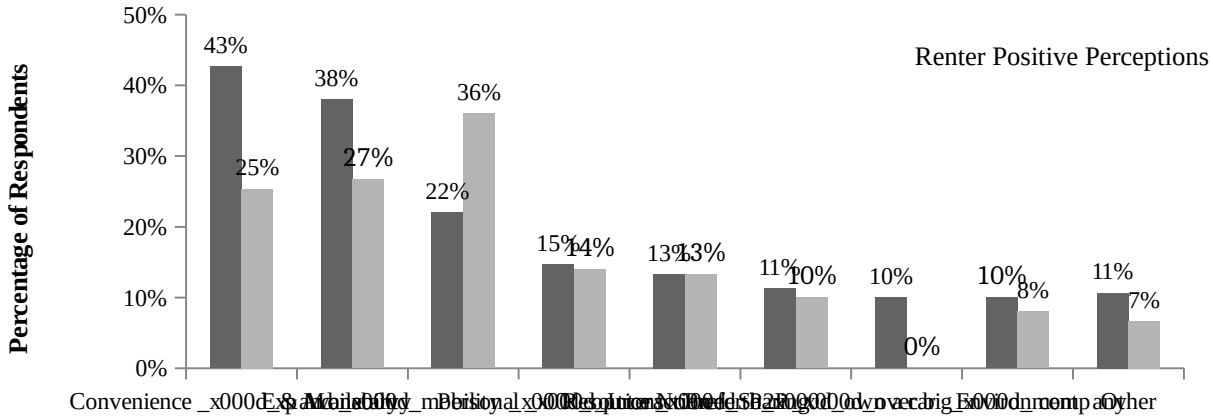
Overall, San Francisco respondents cited more factors when explaining their positive and negative perceptions of renting a vehicle through P2P carsharing (530 total factors cited, versus 438 in Oakland), which could be due to a higher familiarity with the concept of carsharing and P2P carsharing, as shown in Figure 4. On the other hand, vehicle owners were more opinionated in Oakland (third and fourth charts in Figure 7), possibly showing a higher attachment to their vehicles due to the previously mentioned mobility differences between the two cities.

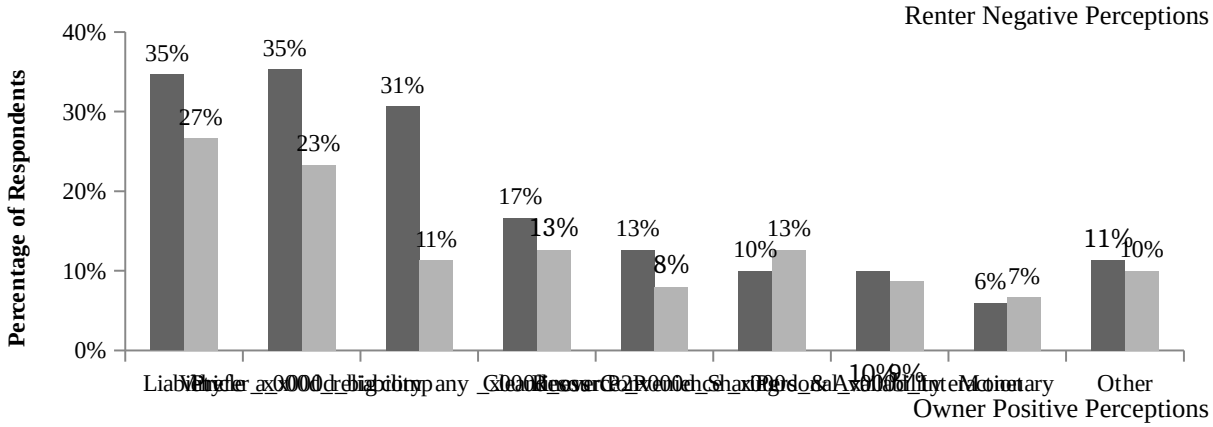
Owner Response to P2P Carsharing Vehicle Provision

When asked if they would consider renting out their personal vehicle to others through P2P, roughly half of the surveyed car owners in both cities (53% and 47% in San Francisco and Oakland, respectively) expressed concern about the liability issues potentially involved in doing so and admitted to harboring a lack of trust in others in regard to their personal belongings (Figure 7). These results confirm the previous literature: work is needed with respect to insurance policies and P2P organizational strategies to build trust.

Convenience and availability were also cited as deterrents to renting out a personal vehicle through P2P: although only 17% of San Francisco's respondents mentioned this issue, over 25% of Oakland vehicle owners cited it as a negative aspect of P2P. Other concerns noted by survey respondents with regard to vehicle provision include: aversion towards personal interaction, disinterest in resource sharing, lack of standardization throughout the P2P industry, and the fear of renting an unreliable personal vehicle to others.

Despite these considerations, more than 25% of surveyed owners (from both cities) stated they would be willing to rent out their vehicles through a P2P carsharing service. Over 50% of these respondents cited economic benefits as the motivating factor. Another motivator for owners to provide a vehicle for P2P carsharing rental was to make use of an otherwise underused asset. Respondents from Oakland (31%) seemed more interested in renting their vehicles through a P2P carsharing service than those from San Francisco (18%).





Owner Positive Perceptions

Owner Negative Perceptions

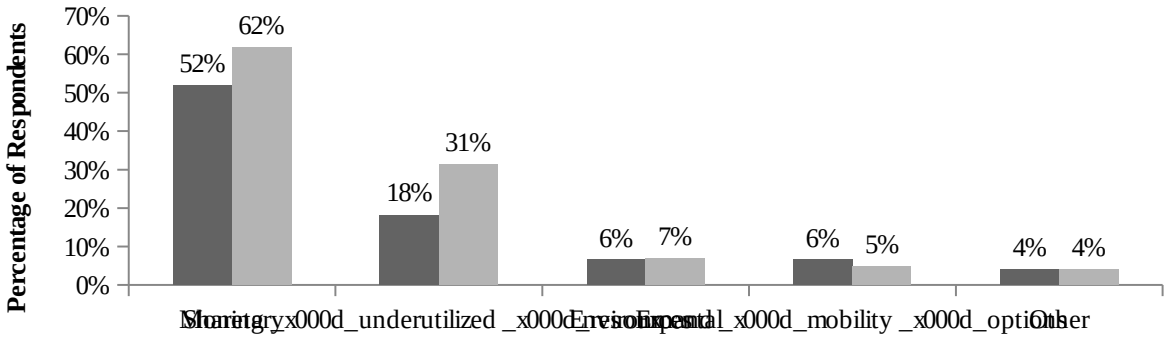


FIGURE 7 Positive and negative perceptions of P2P carsharing as a vehicle renter and vehicle provider.

CONCLUSION

The study results indicate that there is a low awareness of P2P carsharing, particularly among those without access to a private automobile. Openness towards P2P carsharing and the sharing economy was consistent throughout both survey populations, indicating that these attitudes are likely more contingent on human behavior than socio-demographic context. The vast majority of respondents were open to using other shared-use services, such as Airbnb for the purpose of renting lodging, and a significant number of people stated they would consider renting a vehicle through a P2P operator. Of the survey respondents who owned a personal vehicle, 25% would be willing to share their personal vehicles. The study also revealed that travel behaviors, such as driving frequency and public transit use, considerably affect an individual's openness to P2P, as more frequent drivers were generally less open to renting through P2P carsharing, while more frequent public transit users exhibited a larger interest in this.

Despite the low level of awareness of P2P carsharing among survey respondents, many agreed that it sounded like a convenient and affordable innovative mobility approach. Vehicle owners viewed it as a good opportunity to earn extra income, while possibly helping someone else and making use of an underused asset. Both potential vehicle providers and renters, however, voiced concerns about liability, which points to the larger issue of trust. Although raising awareness of P2P carsharing and other shared-use services is unlikely to address all issues that surround and affect the sharing economy, such a strategy could heighten the visibility of P2P organizations and aid in their adoption.

In growing the market for P2P carsharing services, operators should continue to promote their services by either maintaining or enhancing the discounts and special offers they currently extend to new members. For example, Denver's eGo CarShare partners with entities, such as LivingSocial and Groupon, to reach and raise awareness among a large number of individuals and to offer first-time membership at a discounted rate. Raising awareness of P2P carsharing services could also help build awareness, trust, professional standing, and reliability.

A more comprehensive insurance and policy framework would potentially also help to support P2P carsharing expansion. At present, only California, Oregon, and Washington have passed legislation to protect a vehicle owner's insurance plan when acting as a vehicle provider in a P2P carsharing service. P2P companies, such as RelayRides and Getaround, provide insurance policies for vehicles while they are being shared, but clearer legislation detailing who is liable for the damage accrued above the limits of these insurance policies and for maintenance-related costs, which occur while a vehicle is being shared, is needed.

Online platforms that encourage trust-building are emerging to address privacy and trust issues. P2P carsharing operators should continue to foster users to develop an "online reputation" that further inspires consumer confidence. While linking Facebook and other social media profiles may increase credibility and trust within the sharing economy, this also introduces privacy issues. Any policy regarding "online reputation" will need to be sensitive to privacy considerations about how such data are used and protected, in addition to considering the extent to which users are able to opt out of sharing personal information. Finally, more research is needed into the social and environmental impacts of P2P carsharing, as well as its market demographics and business model understanding.

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