Social or Financial Goals?
Comparative Analysis of User
Behaviors in Couchsurfing and Airbnb

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Abstract

Uber and Airbnb, two well-known sharing economy
services, are facing conflicts with traditional taxi and
hotel companies because these services have monetary
benefits but are free from legacy regulations. However,
non-monetary-based sharing services, represented by
Couchsurfing, Inc., are free from such conflict and still
successful. We investigated the distinctive user
participation motivation of non-monetary-based sharing
services versus monetary-based ones. Specifically, a
comparative analysis of Couchsurfing with Airbnb was
conducted via affinity diagramming from host profiles
and guest review data. The human relationship, rather
than a house, is discovered as the primary shared asset
and the primary satisfaction feature for Couchsurfing
users. This study gives an insight to prioritize human
relationships as the main design concern while
developing non-monetary based sharing economy
services.

Author Keywords

Sharing Economy; Participation Motivation; Non-
Monetary; Airbnb; Couchsurfing;

ACM Classification Keywords

H.1.2 Information Systems: User/Machine Systems;
Human Factor
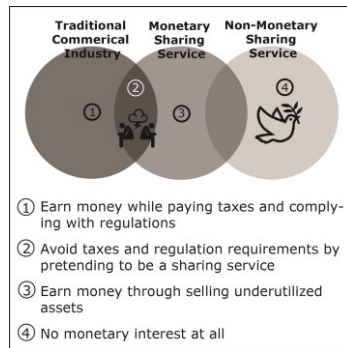
Figure 1: Description about overall current status of sharing economy.

Users	Couchsurfing	Airbnb
Host	About Me	User Profile
	My Home	Description
Guest	Reference	Review

Table 1: As a Couchsurfing host, *About Me* is to introduce himself and *My Home* is to describe his house to his potential guests. These parts correspond to *Profile* and *Description* of Airbnb. As a guest user, he/she can leave his/her service usage feedback after staying at a host's house. This part is respectively *Reference* at Couchsurfing and *Reviews* at Airbnb.

Introduction

The online-based sharing economy is articulated by Lessig in 2008; "non-price-based social relations" act as a primary source of resource allocation in the sharing economy. Individuals participate in a sharing economy to create value, which is independent from money [6]. However, the current business movement of sharing economy has been changed as noted in Figure 1. Airbnb and Uber (③ on Figure 1) face serious problems with the traditional commercial industry, such as traditional hotels and taxi companies (①) that pay taxes and comply with regulations. This is because participants of the sharing economy are not governed by any taxation obligations or building fire safety regulations. Airbnb and Uber, as a result, face serious legal conflicts worldwide (②). For example, in 2014, the Barcelona government imposed a €30,000 fine on Airbnb for a serious infringement of local tourism laws [2]. Uber is partially or fully banned in many countries, including the United States, Germany, and Spain [7].

However, there is a new type of sharing economy, which does not have a problem aroused due to its independence from a monetary system. Participants of this non-monetary-based sharing economy share their underutilized assets for non-monetary benefits, such as friendship, trust, or time (④). The most popular and active non-monetary sharing economy service is Couchsurfing, a global house exchange service of 12 million people in more than 200,000 cities [3].

Our goal of this study is to investigate what kinds of distinct motivation compel people to participate in non-monetary-based sharing economy services as a host and guest user, rather than monetary ones. Our focus of this research is on housing because Couchsurfing is one of few non-monetary-based sharing economy services that have researchable amount of information. In monetary-based sharing, Airbnb performs as an equivalent housing service to Couchsurfing.

Both services have two types of users: a host and a guest. A host shares a place (couch, floor, or bed) with a guest to sleep, with monetary benefits with Airbnb or without any monetary benefits with Couchsurfing. In Couchsurfing, the hosts may gain friendship or social experience from the guest, rather than money. According to Lauterbach et al. [4], Couchsurfing hosts prefer to maintain the host role, and rarely change their role as a guest, and vice versa for a guest user. Thus, a host and a guest may have distinctive characteristics and it is necessary to investigate them separately. Therefore, we collected *About Me* (*User Profile*) and *My Home* (*Description*) data to oversee the host's user behavior, and *References* (*Reviews*) data to oversee the guest's user behavior, as illustrated in Table 1.

Liu [5] studied the participation motivations of eight Couchsurfing users, and found materialistic benefits, cultural information, and emotional support. Ikkala et al. [8] explored the motivation of twelve Airbnb host users and found financial and social motivations for the hosts. Both studies were based on interview data, and focused on one sharing economy service. Belloti et al. [9] interviewed randomly selected sharing economy, not limited to few certain services, users and service providers. He found that service providers have idealistic motivations, such as creating a better community and increasing sustainability but, users are motivated by gaining what they need and convenience. Our study has research values for 1) investigating online user behavior data, 2) distinguishing user types

(host or guest), and 3) conducting a comparative analysis of participation motivation between non-monetary and monetary-based-sharing economy services.

Understanding behavioral differences provides practical design implications: user interaction support, information architecture design, or motivating user participation. Furthermore, this research may clarify the sharing economy user characteristics based on sharing economy business types.

We found that the primary sharing asset with Couchsurfing is human relationships and the secondary sharing asset is a house. Airbnb, in contrast, has a house as the primary sharing asset and human relationships as the secondary. Guests in both services were satisfied with the shared assets that hosts primarily provided. This finding implies a potential improvement of designing service, such as expanding the features of human relationships and personal interaction in Couchsurfing.

Service Usage

The usage process of both Airbnb and Couchsurfing consists of six steps: searching for a house to stay, contacting the host, sending confirmation, making the payment, staying at the chosen house, and writing feedback (optional). At first, users search for a house with information about the destination, the arrival and departure date, and number of guests. Then choose a house and send a request to stay. If a host confirms their stay, a confirmation message is sent to the guest users. Only for Airbnb, at this stage the payment is made from the guest to Airbnb. After staying at the host's house, guest users can leave free-form reviews.

Methodology

Data
We set New York City as the basis for examination, as it is a representative city for both Couchsurfing and Airbnb. Therefore, all hosts we investigated are New York City residents, and the guests are those who stayed at the New York City host's house.

Sampling and Preprocessing
There are 22,257 active ongoing Airbnb rentals in the New York City. We separated all rentals into three groups according to the number of reviews for each rental. More than 10 reviews (group 1) accounts for 41.85%; 1 to 9 reviews (group 2) accounts for 42.52%; 0 reviews (group 3) accounts for 15.63% [1]. Only group 1 and 2 are considered valid sample groups. 30 rentals were randomly selected from each group. Also, five reviews were randomly selected from group 1 and one review from group 2.

For Couchsurfing, neither public statistics nor sorting functions were available. Thus, hosts with no reference were excluded, and this resulted in 7,825 active hosts. Similar to Airbnb, 30 hosts with more than 10 reviews, and another 30 hosts with less than 10 reviews were randomly selected. Five reviews and one review from each group were randomly selected respectively.

Users reviews are replies to one open-ended prompt for both services, each of which is similar to the other. User profiles and house descriptions are also generated by replies to open-ended prompts, but each service has a different number. However, all prompts are optional to respond to, so users often have particular motives for responding to each prompt.

Affinity Diagramming: Bottom-Up Approach
We separated the original text into sentences. By inspecting the objective of each sentence one by one, each sentence was classified into several custom categories. Three experimenters were collaboratively involved and all had to consent in classifying sentences.

After assigning each sentence into several categories, we grouped each custom category with similar characteristics into more broad upper-level categories. For example, *host's personality, interests, beliefs* are grouped as the upper-level category of *host's self-description*. Finally, the number of sentences for each group was counted to see proportion of each category.

Result and Analysis
Host Behavior Analysis Result
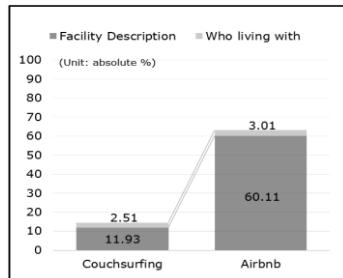The host behavior analysis consists of three comprehensive categories: *Facility & Environment,*

Host, and Message from Host to Guest. There is a distinct difference in the proportions of each category between Couchsurfing and Airbnb as noted in Table 2.

To be specific, Airbnb hosts are noticeably more active in describing *Facility Descriptions* (including house, location, and neighborhood atmosphere) compared to Couchsurfing host users, as illustrated on Figure 2. In other words, Couchsurfing hosts do not feel importance in informing guests about facility unlike Airbnb hosts.

From *Host* category, Couchsurfing hosts were more willing to deliver personal information such as self-description, participation motivation, and life experience as on Figure 3. Especially, regarding to self-description, Couchsurfing hosts write diverse and private issues including interest, belief, and life philosophy. However, Airbnb hosts prefer to share less personal and limited issues such as occupation.

Figure 2: Host behavior analysis - further analysis for *Facility & Environment* category
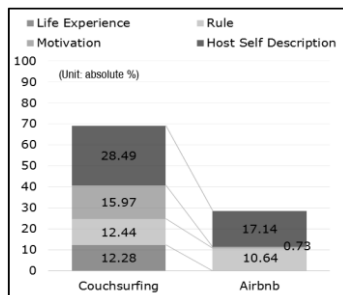
Figure 3: Host behavior analysis - further analysis for *Host* category

Objective of Sentence	Couchsurfing Total		Airbnb Total		Objective of Sentence	Couchsurfing Total		Airbnb Total		Objective of Sentence	Couchsurfing Total		Airbnb Total	
	1161	100%	1042	100%		1161	100%	1042	100%		1161	100%	1042	100%
Facility & Environment	368	14.44%	777	63.12%	**facility description**	304	11.93%	740	60.11%	accommodation (house, facility, cost)	162	6.36%	400	32.49%
										location, transportation, attraction, commercial facility	142	5.57%	278	22.58%
										Neighborhood atmosphere, Mood	0	0.00%	62	5.04%
					who living with	64	2.51%	37	3.01%	Living with Whom	40	1.57%	9	0.73%
										pet	24	0.94%	28	2.27%
Host	1763	69.19%	351	28.51%	**Host Self-Description**	726	28.49%	211	17.14%	personality, characteristics	123	4.83%	128	10.40%
										interest	428	16.80%	59	4.79%
										Job Specification	24	0.94%	24	1.95%
										belief	86	3.38%	0	0.00%
										philosophy	65	2.55%	0	0.00%
					Motivation and Experience	407	15.97%	9	0.73%	reason to participate	78	3.06%	0	0.00%
										satisfaction about service platform	23	0.90%	9	0.73%
										CS/Airbnb experience	306	12.01%	0	0.00%
					rule	317	12.44%	131	10.64%	house rule& limitation	202	7.93%	113	9.18%
										how to contact	17	0.67%	2	0.16%
										booking arrangement	78	3.06%	15	1.22%
										preferred schedule to meet	20	0.78%	1	0.08%
					life experience	313	12.28%	0	0.00%	travel experience	92	3.61%	0	0.00%
										personal story	221	8.67%	0	0.00%
Message From Host to Guest	417	16.37%	103	8.37%	**Comment to guest**	228	8.95%	52	4.22%	preferred (not preferred) guest style	112	4.40%	21	1.71%
										advice to guest	89	3.49%	0	0.00%
										joke to guest	7	0.27%	0	0.00%
										tourist attraction tip	20	0.78%	31	2.52%
					what host can do for guest	189	7.42%	51	4.14%	favor	99	3.89%	51	4.14%
										preferred experience to have with guests / what I can share with guest	90	3.53%	0	0.00%

Table 2: Result of host analysis (Degree of darkness implies the ratio of the category)

A difference also found in the *Message from Host to Guest* category. While Couchsurfing hosts deliver messages related to human relationships such as preferred guest style and activities to do together. In contrast, Airbnb hosts usually focus on formal hosting aspects, such as tourism tips and favors to offer.

Guest Behavior Analysis Result
The guest behavior analysis consists of three comprehensive categories: *Feeling, Descriptions*, and *Message* as on Table 3.

Feeling category shows that Airbnb guests are much more interested in expressing their satisfaction about *Facility & Environment* (including room, and location) on Figure 4. However, Couchsurfing guests prefer more to discuss how they felt about *Host*s.
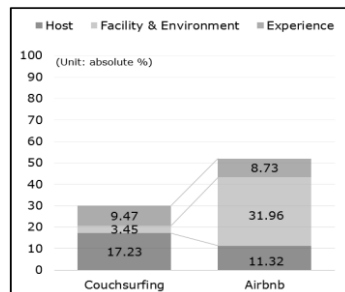
Although the total proportion of *Description* is similar between Airbnb and Couchsurfing, different details are noticed. Couchsurfing guests more often describe the type of experiences shared with hosts and type of host.

As Figure 5 illustrates, Couchsurfing guests prefer to write a direct message to their host to express their appreciation, and to invite host to their home. More intimate relationships are observed between Couchsurfing hosts and guests, compared to Airbnb.

Discussion

Airbnb hosts and guests both concentrate on the house itself. Hosts mostly promote their house, and simultaneously, guests express satisfaction mostly on the house. However, the opposite result was observed with Couchsurfing; both hosts and guests were not interested in the house itself. The house was regarded

Figure 4: Guest behavior analysis - further analysis for *Feeling* category
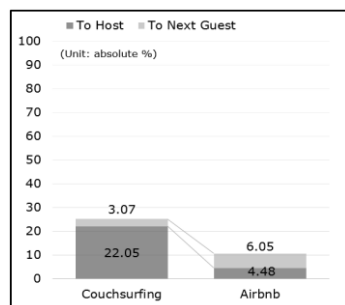
Figure 5: Guest behavior analysis - further analysis for *Message* category

Objective of Sentence	Couchsurfing Total		Airbnb Total	
	1161	100%	1042	100%
Feeling	350	30.15%	542	52.02%
Description	503	43.32%	405	38.87%
Message	308	26.53%	95	9.12%

Objective of Sentence	Couchsurfing Total		Airbnb Total	
	1161	100%	1042	100%
Host	200	17.23%	118	11.32%
Facility& Environment	40	3.45%	333	31.96%
Experience	110	9.47%	91	8.73%
Host	243	20.93%	115	11.04%
Facility& Environment	18	1.55%	196	18.81%
Experience	242	20.84%	94	9.02%
Host	256	22.05%	32	3.07%
Next guest	52	4.48%	63	6.05%

Objective of Sentence	Couchsurfing Total		Airbnb Total	
	1161	100%	1042	100%
Satisfaction about Host	173	14.90%	101	9.69%
Dissatisfaction about Host	27	2.33%	7	0.67%
(Dis)Satisfaction about Host behavior on Online	0	0.00%	10	0.96%
Cost Effectiveness	0	0.00%	12	1.15%
Satisfaction about Facility & Enviro.	36	3.10%	271	26.01%
Dissatisfaction about Facility & Enviro.	4	0.34%	50	4.80%
Satisfaction about Service Platform	3	0.26%	0	0.00%
Willingness to revisit	43	3.70%	39	3.74%
General Satisfaction	64	5.51%	52	4.99%
Host Personality	229	19.72%	115	11.04%
Route of knowing Host	8	0.69%	0	0.00%
Advocating Host from Complaint	6	0.52%	0	0.00%
Advantages of House Location	10	0.86%	109	10.46%
About Visiting Place (New York)	2	0.17%	0	0.00%
About Host's Pet	6	0.52%	17	1.63%
Comparison to Photos and Description	0	0.00%	11	1.06%
Simple Explanation about Facility & Environment	0	0.00%	59	5.66%
How treated as a guest	67	5.77%	76	7.29%
Number of Nights and People Stayed	22	1.89%	13	1.25%
Experience shared with Host	153	13.18%	5	0.48%
Hoping to keep in touch with Host	7	0.60%	0	0.00%
Invitation to Guest's House	32	2.76%	0	0.00%
Saying to host	67	5.77%	0	0.00%
Express Appreciation to Host	135	11.63%	32	3.07%
Willingness to be more intimate with Host	15	1.29%	0	0.00%
Recommending to Other Users	41	3.53%	42	4.03%
Advice to Other Users	11	0.95%	21	2.02%

Table 3: Result of guest analysis (Degree of darkness implies the ratio of the category)

just as a prerequisite to interact between users. The more intrinsic shared asset was a human relationship. Therefore, the primary shared asset and satisfied feature for Couchsurfing users were a human relationship and secondary were a house, vice versa for Airbnb. This difference is summarized in Figure 6.

This study is important because it provides design implications for improving the satisfaction of a non-monetary-based sharing service. For example, adding more features that encourage users to experience human relationships and interaction, instead of providing more features to describe facility and house itself. In order to achieve this, more personal and private information is necessary to be shared between users. Therefore, privacy concern is issue here.

Furthermore, this result may apply to other business fields that pursue non-monetary-based sharing economy services. For example, when designing a non-monetary car sharing service, human interactions that occurred during driving would be a more attractive feature to users than car conditions.

Many prior studies investigated the participation motivation of sharing economy [5,8,9]. They suggested to system designers the ways to build successful sharing economy services; users participate in a sharing economy to fulfill convenience and needs, while service providers have altruistic and idealistic motivations [9]. However, these studies do not consider monetary involvement. Our study emphasizes monetary and non-monetary involvement differences in sharing economies. Also, our work attempts to distinctively explore participation motivation via analysis of online users behavior data, while other studies results are primarily from interview data.

There are still limitations that we have only researched a hospitality sector in sharing economy. Therefore, we would like to expand the scope of industries for future research to obtain more generalized implications for non-monetary-based sharing economy services. Furthermore, we did not consider co-habitation in the sampling method since both services do not provide a filter option to classify a host's co-habitation status. This study can be improved in the future via specifically classifying cohabitation Airbnb users – where guest and host stay together –comparison to Couchsurfing users.

Conclusion

Given that both Couchsurfing and Airbnb are hospitality sharing services, our research shows that users expect different value regarding each community. Couchsurfing guests are more interested in making interactions with the host, while Airbnb guests are more interested in describing the facility and environment circumstance. A similar phenomenon was also found in the host analysis. Couchsurfing hosts are more willing to express internal, personal information and deliver messages to potential guests; Airbnb hosts concentrate on describing more external characteristics and how their rooms are fully equipped.

This finding may contribute to distinguish user behavior of non-monetary and monetary sharing economy services. Furthermore, many other business fields may consider this difference to design each sharing service.
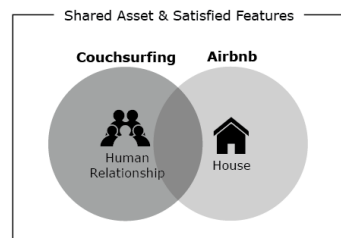
Acknowledgement

Figure 6: Primary sharing asset and satisfied feature for Couchsurfing and Airbnb

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