

Plateformes numériques et consommation collaborative: une étude économétrique des usages et des revenus

Journée consommation collaborative - MARSOUIN

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Introduction

Three main categories of collaborative platforms:

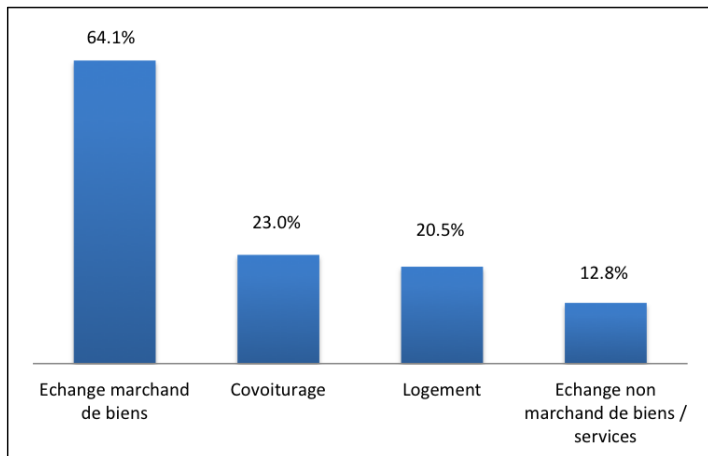
- ▶ Peer-to-peer (C2C) marketplaces: *connecting individual sellers with buyers* (ex: *eBay*, 1995; *Leboncoin*, 2006)
- ▶ Sharing platforms: *sharing underused assets or services, for free or for a fee, directly from individuals* (*Blablacar*, 2004; *Airbnb*, 2008; *HomeAway*, 2005)
- ▶ On-demand platforms: *matching customer needs with providers to immediately deliver goods and services* (*Heetch*, 2013; *Cocolis*, 2015)

All of them are multi-sided platforms (Rochet & Tirole, 2006; Einav & al. 2016), with network externalities (intra and cross-group)

Some figures from Marsouin survey (2016)

- ▶ Global adoption rate of collaborative platforms: 70%

Figure: Adoption rate by platform type





Comparison with Baromètre Fevad

◆ CONSOMMATION COLLABORATIVE

La consommation collaborative a connu un véritable essor au cours de ces deux dernières années. Plus d'un internaute sur deux déclare souhaiter y recourir en 2016.



 Vous avez eu recours à cet usage par Internet en 2015

 Vous envisagez d'avoir recours à cet usage en 2016

source : Baromètre Fevad/CSA janvier 2016.

Comparison with Baromètre Fevad

En tant que vendeur



16 %
y ont eu recours
en 2015



27 % ont l'intention
d'y recourir
en 2016

source : Baromètre Fevad/CSA Janvier 2016.

60 %

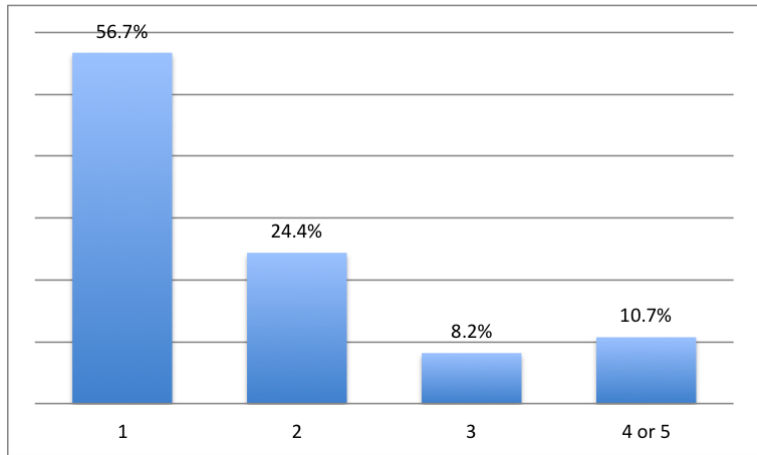


**des internautes ont acheté ou vendu
sur des sites permettant de mettre en
relation des particuliers au cours des
6 derniers mois (produits neufs ou d'occasion)**

source : Observatoire du consommateur connecté Fevad/
Médiamétrie juin 2016.

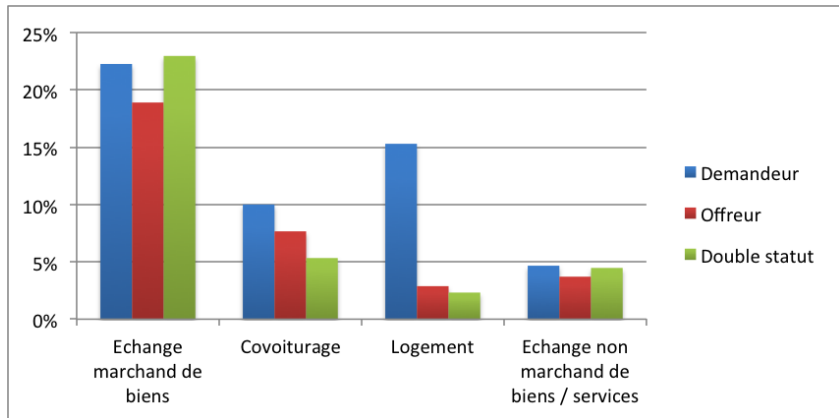
Single-homing, Multi-homing and variety of use

Figure: Distribution of adopters' diversity of use



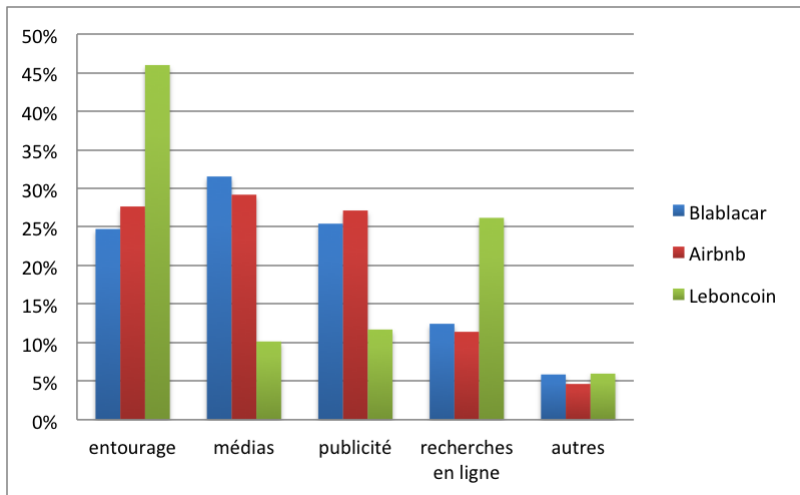
Collaborative platforms as two-sided platforms

Figure: Users on the demand/supply side



The importance of network externalities

Figure: Social / peer influence and marketing



Literature

- ▶ Schor & Fitzmaurice (2015); Edelman & Geradin (2015); Einav & Farronato & Levin (2016); Horton & Zeckhauser (2016); Sundararajan (2016)
- ▶ Determinants of participation in collaborative consumption (Hamari & Ukkonen, 2015): *Sharetribe*
- ▶ Quattrone & al. (2016): *Airbnb*
- ▶ Similar methodologies to analyze adoption and usage patterns of the Internet (Goldfarb & Prince, 2008; Drouard, 2011)

Hypothesis

The decision to use a collaborative platform, the decision to enter on the demand and/or supply side, and earnings are explained by:

- ▶ Age (-), Education (+), IT skills (+)
- ▶ income (+/- ?)
- ▶ Trust in others (+) (Akerlof, 1970; Cabral & Hortaçsu, 2010; Cabral, 2012; Tadelis, 2016)
- ▶ Location (+/- ?) "Cities are sharing economy" (Sundararajan)
- ▶ Social networks and sociability (+/- ?): network effect (+) vs substitution effect (-)

Methodology

We analyze the determinants of

- ▶ usage patterns of collaborative platforms, using ordered probit models
- ▶ the choice to enter the supply side of collaborative platforms, using binary probit
- ▶ the amount of earnings on collaborative platforms, using ordered probit models

Diversity of use

We construct the dependent variable "diversity of use" as follows.
We estimate an ordered probit model, on the adopters population.

$$diversity_i = \begin{cases} 1 & \text{if the respondent } i \text{ uses one platform type} \\ 2 & \text{if the respondent } i \text{ uses two platform types} \\ 3 & \text{if the respondent } i \text{ uses three platform types} \\ 4 & \text{if the respondent } i \text{ uses four or five platform types} \end{cases}$$

Covariates	Diversity of use	
	coef	se
age: 25-34	-0.150	[0.113]
age: 35-49	-0.492***	[0.114]
age: 50-64	-0.688***	[0.115]
age: 65/+	-1.175***	[0.128]
BAC / BAC+1/+2	0.0959	[0.0974]
BAC+3/+4	0.280**	[0.113]
BAC+5 or more	0.338***	[0.125]
use of pad	0.377***	[0.0676]
use of smartphone	-0.0438	[0.0830]
1.wealth	0.0476	[0.0833]
2.wealth	0.268***	[0.0959]
female	-0.0234	[0.0691]
city size: < 50k	0.155	[0.108]
city size: < 200k	0.178	[0.117]
city size: > 200k	0.205**	[0.0928]
Paris	0.107	[0.108]
peers effect	0.384***	[0.0676]
time with friends	0.0539	[0.0477]
time in clubs	0.144***	[0.0291]
trust in others	0.317***	[0.0737]
number of children	0.0784**	[0.0398]
free time	0.0893**	[0.0400]
election	-0.313***	[0.0834]

The decision to enter on the supply side

We model the status Y_{ij} of adopter i of platform type j as a binary variable and estimate a probit model (or a Heckman model when necessary).

$$Y_{ij} = \begin{cases} 1 & \text{if the respondent is supplier on a platform of type } j \\ 0 & \text{if the respondent is only on the demand side} \end{cases}$$

	Accommodation (type 1)	Ridesharing (type 2)	Marketplaces (type 3)
adopters	20.5%	23%	64.1%
on the demand side	15.3%	10.01%	22.26%
on the supply side	2.88%	7.66%	18.9 %
on both sides	2.32 %	5.33%	22.96 %

Expected effect of trust in others, on the probability to enter on the demand side or the supply side:

- ▶ For peer-to-peer marketplaces: Akerlof (1970), trust in others is a more important issue for buyers than for sellers.
- ▶ For short-term rental platforms: trust in others may be a more important issue for hosts
- ▶ For ridesharing platforms: no intuition

Covariates	Accommodation (Heckman - two steps)		Ridesharing (Probit)		Marketplaces (Heckman - two steps)	
	coef	se	mfX	se	coef	se
age: 25-34	-0.0659	[0.0609]	0.144**	[0.0676]	0.0116	[0.0513]
age: 35-49	0.0209	[0.0723]	0.0112	[0.0719]	0.181***	[0.0505]
age: 50-64	-0.0830	[0.0724]	0.0439	[0.0792]	0.0683	[0.0526]
age: 65/+	0.0381	[0.0994]	0.0659	[0.110]	0.100*	[0.0577]
BAC / BAC+1/+2	-0.0369	[0.0739]	-0.0369	[0.0748]	0.0697*	[0.0374]
BAC+3/+4	-0.0943	[0.0833]	0.0294	[0.0815]	0.0330	[0.0473]
BAC+5 or more	-0.0346	[0.0865]	0.0498	[0.0893]	0.0250	[0.0519]
use of pad	-0.0435	[0.0473]	-0.00366	[0.0469]	0.0120	[0.0312]
use of smartphone	-0.111**	[0.0545]	0.0290	[0.0588]	-0.0443	[0.0332]
1.wealth	-0.154**	[0.0598]	0.0254	[0.0564]	0.0187	[0.0331]
2.wealth	-0.120*	[0.0657]	-0.0824	[0.0649]	0.0311	[0.0406]
female	-0.0333	[0.0422]	-0.0946**	[0.0458]	0.0700**	[0.0282]
city size: < 50k	0.0333	[0.0699]	-0.0841	[0.0793]	0.0482	[0.0446]
city size: < 200k	-0.0184	[0.0702]	0.0613	[0.0798]	0.0373	[0.0466]
city size: > 200k	0.0574	[0.0602]	0.0828	[0.0758]	-0.0173	[0.0381]
Paris	0.0278	[0.0630]	0.0661	[0.0890]	0.0255	[0.0486]
time with friends	-0.0239	[0.0317]	-0.0921***	[0.0339]	-0.0367*	[0.0190]
time in clubs	0.0446**	[0.0197]	0.0263	[0.0215]	0.00405	[0.0127]
trust in others	0.0890*	[0.0483]	0.0893*	[0.0483]	-0.118***	[0.0349]
risk aversion	-0.123***	[0.0459]	-0.0687	[0.0511]	0.00878	[0.0299]
number of children	0.0384	[0.0253]	0.0150	[0.0269]	-0.0390**	[0.0191]
free time	-0.0440	[0.0284]	0.00381	[0.0293]	0.00845	[0.0165]
election	-0.138***	[0.0516]	-0.0449	[0.0535]	0.0587*	[0.0354]
nb of cars			0.136***	[0.0354]		

Modelling peer suppliers earnings

Figure: Distribution of peer sellers earnings

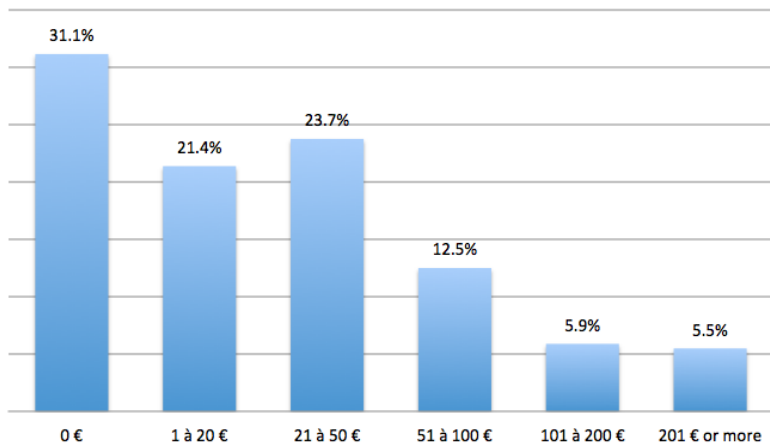
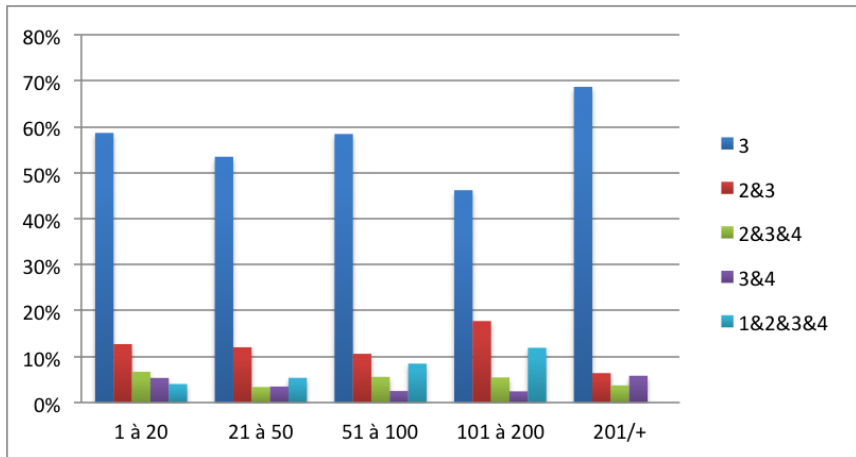


Figure: Source of earnings



Covariates	Earnings	
	coef	se
platform freq	0.129***	[0.0488]
platform diversity	0.0304	[0.0372]
age: 25-34	0.00523	[0.147]
age: 35-49	-0.0463	[0.149]
age: 50-64	-0.106	[0.163]
age: 65/+	-0.257	[0.184]
BAC / BAC+1/+2	-0.219*	[0.131]
BAC+3/+4	-0.0481	[0.152]
BAC+5 or more	-0.136	[0.173]
use of pad	0.0173	[0.0956]
use of smartphone	0.187*	[0.104]
1.wealth	0.302***	[0.109]
2.wealth	0.391***	[0.130]
female	-0.177**	[0.0894]
city size: < 50k	-0.183	[0.149]
city size: < 200k	-0.0843	[0.147]
city size: > 200k	0.0289	[0.120]
Paris	0.0551	[0.139]
peers effect	0.206**	[0.0982]
time with friends	-0.0127	[0.0644]
time in clubs	-0.0121	[0.0462]
trust in others	0.249**	[0.101]
number of children	0.108**	[0.0506]
free time	0.0310	[0.0619]
election	-0.193*	[0.114]

Conclusion

Main findings:

- ▶ "Peers effect" and trust in others have positive effects on the diversity of use and earnings.
- ▶ More complex effects of other variables.