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The responsible, sharing consumer

A closer look at the motivation of potential private durable goods’ suppliers in the sharing economy

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In the twenty-first century, consumers have various options in terms of acting more responsibly towards their environment. One of these options is a more conscious utilisation of private durables by renting them to other consumers at times when they are not being utilised. This kind of sharing has always taken place within living memory between friends and family. However, with the emergence of the Internet, consumers can now also initiate such exchanges with likeminded strangers from far away. They can meet virtually at C2C\(^1\) online renting platforms, which allow them to exchange the rarely utilised durables with minimum transaction costs.

### 1 Introducing the sharing economy

These C2C online renting platforms are just one manifestation of the sharing economy. The term ‘sharing economy’—also referred to as the access economy, collaborative economy, collaborative consumption or shareconomy (Zimmermann 2017, 1)—refers to a development that is described as one of the 10 most disruptive ideas that will change the world (Walsh 2011). A range of companies is regularly cited when it comes to the description of the phenomenon: for example, the online platform Airbnb\(^2\) connects consumers wanting to rent (out) private rooms or properties at times when they are not inhabited. Consumers can resell, buy, swap or simply give away pre-loved fashion items via platforms such as Kleiderkreisel.\(^3\) TaskRabbit\(^4\) in turn matches everyday tasks posted by consumers and so-called taskers instantly via its platform. Such firms are regularly valued at a billion dollars on the stock market. Analysts forecast a bright future for the whole sharing economy, with revenue estimations ranging from 3.5 to over 110 billion US dollars (Andjelic 2015; Thomas 2015).

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2. www.airbnb.com
3. www.kleiderkreisel.de
4. www.taskrabit.com
Even if the media and society are thrilled at this development, a general definition of the sharing economy is still missing. The question is: What do these concepts have in common? Looking at today’s sharing landscape, we can see some core patterns:⁵

[1.] There is a great diversity of exchange processes in the sharing economy, even if it is all designated as sharing. From the supplier’s viewpoint the processes range from reselling, gifting and swapping to lending or renting. Whereas the latter two refer to access-based exchanges where the resource is shared only temporarily, the first three imply a permanent transfer of ownership. Furthermore, the exchange can be compensatory or not. If a resource is borrowed or gifted, the receiving party gets it for free. When it comes to swapping, the receiving party gives a non-monetary resource in return. Reselling and renting incorporate monetary compensation.

[2.] Despite the diversity, all these exchanges lead to a higher usage intensity of underutilised resources. When clothes are swapped, which are otherwise thrown away, their period of use is extended. By lending a durable such as a drill at times when it is not being used by its owner, the durable’s usage is intensified. Even when you are renting a seat in a car, then the capacity of the car is being better used.

[3.] The introduction of the Internet, and more precisely the mechanisms of Web 2.0, has boosted sharing concepts on a larger scale. Lower transaction costs make it possible to decentralise sharing on the demand and supply side, therewith connecting a wider range of actors and finally enabling the more efficient handling of transactions via online platforms.

Bringing all this together we can summarise that the modern sharing economy stands for an economic concept that encompasses all undertakings that provide online platforms via which decentralised distributed actors can increase the usage intensity of idle resources through either ownership-based or access-based exchange processes (Zimmermann 2017, 25). In this context, sharing can be seen as a distribution function that makes a property useful even at

⁵ For more details, see: Zimmermann 2017, 10ff.
times when the proprietor is not using it. The newness arises from the technology component, which lifts the modern sharing economy from a centralised to a decentralised construct by decreasing transaction costs. At the same time, whereas the ‘old sharing’ with the inner circle was often non-compensatory, the idea of exchanging resources with strangers increasingly invokes the purpose of earning money with it. When these transactions between strangers take place, it becomes necessary to have an evaluation system, replacing the former trust between family members, friends and neighbours. This transforms non-market sharing to today’s market-based sharing.

<table>
<thead>
<tr>
<th></th>
<th>Centralized</th>
<th>Decentralized</th>
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<tr>
<td><strong>Non-market</strong></td>
<td>public libraries, households, communes</td>
<td>sharing with neighbors, couchsurfing</td>
</tr>
<tr>
<td><strong>Market</strong></td>
<td>tool rentals, Netflix, Rent the Runway</td>
<td>Airbnb, Blablacar, Why own it, Kleiderkreisel, Uber …</td>
</tr>
</tbody>
</table>

(1) decrease of transaction costs
(2) from non-compensatory to compensatory transactions
(3) from personal trust to evaluation systems

**Figure 1: The sharing economy development matrix.** Source: Own illustration based on Fremstad 2014, 10.
2 Focus of study and research questions

During the initial desk research we came across an article about the German start-up Why Own It, which started as an app-based platform where people could lend items to friends and later also strangers. After some years it had to shut down its operations. The founder stated: “People who have registered preferred to borrow things, but hardly anyone has uploaded items” (Glöckler 2015). In other words, the platform suffered from a lack of participants offering items—an imbalance of supply and demand occurred.

We intensified our research in that direction and found that at least in Germany there are indeed fewer consumers willing to lend something compared to those who want to borrow. According to a recent study, 46 per cent of the population have already rented something in the sharing economy, but only 33 per cent have offered something (PricewaterhouseCoopers AG WPG 2015a). A similar picture was revealed by a second study: although 90 per cent are willing to lend items to friends or family, less than 10 per cent are willing to lend something to a stranger (TNS Deutschland GmbH 2015). Looking at the network effects in these markets it becomes clear that the shortage in suppliers is the key obstacle in the context of C2C sharing concepts. More suppliers mean more items, which makes a platform more interesting to demanders. Therefore, more demanders would join the platform, and more matches, namely successful rentals, would occur. There is no shortage in demand; therefore, the poor supply in goods being offered is the reason that the market is not as efficient as it could be.

We wanted to understand why this shortage in supply occurs in the case that the supply side is made up of consumers only. Because of the wide scope of the sharing economy we decided to focus on a certain (1) product range, (2) a specific exchange process and (3) a specific process phase. As the big successful examples mostly deal with high-value sharable resources such as cars or flats, we anticipated that the shortage problems might rather occur in the context of durables of lower value. Thus, we concentrated on (1) physical durables that can be found in a typical household. Furthermore, we decided to examine (2) the exchange process of renting in order to take the mone-
tary compensation as one possible factor into account. The actual process of renting out items over an online platform includes several phases. First, the supplying consumer has to decide whether he or she wants to offer a specific underutilised item on an online platform for rent. If this decision is positive, an account has to be established, the item has to be inserted (including description, pictures etc.) and decisions regarding the renting conditions—such as shipping costs or renting period—have to be made. If someone is interested in renting the item, the supplying consumer will receive a request. After that he/she can finally decide whether to rent the item to that particular party for that specific time. Bearing this process in mind, we decided to concentrate (3) on the first fundamental decision—about whether or not the consumer wants to offer a specific item on an online platform for rent.

These specifications led us to the following research questions:

[1.] Why do consumers offer—or not offer—their durables for rent via online platforms to foreign consumers?

And in addition, considering addressability:

[2.] Are there any target groups that are particularly affine? Are there any socio-demographics that discriminate between consumers who would and would not offer their durables for rent?

3 Development of a causal model

Under perfect conditions, behaviour would be the dependent variable. However, it has to be taken into account that a representative survey showed that only 6.5 per cent of the German population had already used a C2C online renting platform in 2013 (Zentes, Freer and Beham 2013, 34). Even a few years later, this figure might not have increased significantly. Therefore, the intention instead of the actual behaviour seemed to be the more appropriate dependent variable. However, it is not just the usage but also the knowledge of the
existence of sharing concepts such as the one above that are not particularly common. Only 25 per cent of respondents knew of such C2C online renting platforms in 2013 (Zentes, Freer and Beham 2013, 34). As intention is a kind of plan and can only be developed if one is aware of an opportunity (Davis and Warshaw 1992, 392), intention also seemed to be inappropriate. Therefore, we finally decided to go for expectation as a more probability-based form of intention. Thus, the expectation to offer a durable for rent on a C2C online platform if the opportunity is given⁶ was chosen as the dependent variable.

Further development of the causal model was fundamentally based on Ajzen’s Theory of Planned Behaviour (TPB). The intention to do something—which we replaced with the expectation to offer a durable for rent—is a predictor for a specific actual behaviour in this model. The intention, in turn, is influenced by the subjective norm, the perceived behavioural control and the attitude towards the behaviour (Ajzen 1991, 186). The attitude can be described as a constant tendency to react to a stimulus in a certain manner (Crocker 1997, 76). The perceived behavioural control stands for the degree of confidence in having the ability to execute a certain behaviour. The subjective norm reflects the perceived social pressure to exhibit a certain behaviour or not (Ajzen 1991, 184ff).

The subjective norm is criticised as being a weak indicator of intention (Armitage and Conner 2001, 481f). Additionally, some authors note that TPB-based studies often examine the injunctive norm only (Rivis and Sheeran 2003, 219; Lapinski and Rimal 2005, 132f). The injunctive norm is a subfield of the social norm and describes the individual’s perception of whether a certain behaviour will be approved or disapproved by important others. The counterpart of this is the descriptive norm, which reflects the individual’s perception of whether important others would or would not show the specific behaviour under the same circumstances (Stürmer and Siem 2013, 20f). According to Rivis/Sheeran, the latter is missing in the TPB. In a meta-analysis they were able to prove that the addition of the descriptive norm as a further predictor can increase the variance explained in the intention (Rivis and Sheeran 2003, 218). Accordingly, we introduced the descriptive norm as the first additional predictor.

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⁶ Hereafter called expectation to offer a durable for rent.
Another extension of the model is former experience with identical or similar behaviour. According to Ajzen/Fishbein, experiences are implicitly covered by the attitude variable (Vogelsang 2003, 27). However, as other studies were able to show that the inclusion of the experience as a separate variable can increase the amount of variance explained (Oullette and Wood 1998, 62ff), we decided to include the former experience as well. We split it into (1) the experience with C2C renting platforms as renter, (2) the experience with C2C renting platforms as tenant and (3) the experience as a supplier on C2C sharing platforms based on other exchange processes (such as eBay).  

Figure 2: Main model. Source: Zimmermann 2017, 76.

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7 Herefrom abbreviated as experience as C2C renter, experience as C2C tenant and experience as C2C supplier.
‘A key attribute of the TPB is that it allows for a direct or indirect measurement of the constructs depending on the scope and nature of the study’ (Holst and Iversen 2011, 19). Direct measurements are sufficient if one aims to predict intention or behaviour. However, at the same time these direct measurements prevent one from gaining deeper insights about the reasons for evaluation of the attitude, subjective norm or perceived behavioural control. Indirect measurements take this into account by predicting the independent variables based on the respondents’ beliefs and expected consequences (Holst and Iversen 2011, 19).

In many other studies the attitude towards behaviour turned out to be the strongest predictor of intention (Ajzen 2005, 9). Thus, we decided to delve deeper into this influencing variable by measuring it indirectly. To reflect the attitude adequately, the indirect measurement requires a profound knowledge of its determinants. Therefore, we decided to make use of the direct measurement for all constructs in the main model and tried to predict the attitude (which is affective if measured directly (Herrmann 2003, 119; Slaby and Urban 2002, 18)) with the help of the indirect measurement in a second partial model. By doing so, we hoped to gain first insights about the structure of the affective attitude.

4 Exploration of the affective attitude’s determinants

According to the TPB, people build their affective attitude on the basis of expected consequences of their behaviour. The question in our setting was therefore: What consequences do consumers expect when offering their durable for rent on a C2C online platform? Based on certain surveys and a small-sample pre-study, several predictors were explored.

One of the expected consequences was the expected financial benefit. Several surveys (PricewaterhouseCoopers AG WPG 2015b, 18; ING-DiBa AG 2015,
5) show that a substantial proportion of consumers (approximately 30–45%) think that generating additional income would be an important benefit of sharing private items. This goes hand-in-hand with the fact that the unused potential of physical items can be turned into money by renting them.

The second expected consequence is the expected social benefit. This enjoyment of sharing might result from a more egocentric or altruistic perspective, but nevertheless the good feeling of doing something good for society seems to be a further motivator for participation as a renter on such a collaborative platform (TNS Deutschland GmbH 2015, 18; PricewaterhouseCoopers AG WPG 2015b, 18; Hawlitschek, Teuber and Gimpel 2016).

The expected ecological benefit could also be a predictor for affective attitude. A positive benefit for the environment is recognised by the vast majority of people, although it remains unclear whether they look at it from a renter’s or a lender’s perspective (Gfk-Nürnberg e.V. 2015; ING-DiBa AG 2015, 5).

Consumers also seem to associate negative consequences with the behaviour of renting items to others. This is not surprising taking into account that people treat items that belong to others less carefully compared to handling their own property (Durgee and O’Connor 1995, 90ff). In the pre-study, the respondents thought about possible losses or depreciation of the durables. As both risks were mentioned throughout separately, we conceptualised them as two variables: the expected risk of loss, and the expected risk of depreciation (Zimmermann 2017, 64).

The last expected consequence is the expected effort necessary for renting. As physical products have to be handed over, transaction costs occur. Negotiating the conditions, packaging and shipping, for example, take time and therefore negatively influence the affective attitude (Zimmermann 2017, 65f).
5 The meaning of the durable as moderator

Items can become containers of emotions and memories when someone associates them with important experiences or persons. Thus, it might be that a particular item has a specific meaning for one person but not for another (Las-tovicka and Fernandez 2005, 813ff). If one is asked about offering a meaningful durable for rent it can be hypothesised that the expectation to offer a durable for rent will be lower on average compared to durables without any emotional ties. In addition, the question arises about how far the meaning of the durable influences the effects in both models.

Two consumers might think about offering a camera for rent—for one of them the camera is of irreplaceable value, as it is a gift from an old friend. The other consumer has purchased the camera and never used it. It is quite likely that the consumer with the gifted camera will have a more rejecting and thereby lower affective attitude towards offering this irreplaceable durable for rent. Nevertheless, it is also quite likely that he or she will evaluate the expected consequences like the other consumer, as they represent the rational part of the attitude. If this is the case, an ambivalence between the emotional part (affective attitude) and the rational part (expected consequences) occurs in the case of meaningful durables. The meaning of the durable then negatively moderates the effect of the consequences on the affective attitude.

Furthermore, this attitudinal ambivalence might result in a lower effect of the affective attitude on the expectation to offer a durable for rent. Therefore, we follow the results of Povey/Wellens/Conner, who can prove that attitudinal ambivalence leads to a significantly lower effect of attitude on the intention in the TPB (Povey, Wellens and Conner 2001, 23f).
Figure 3: The complete model. Source: Zimmermann 2017, 76.
6 Inclusion of socio-demographics

The nature of the TPB model implies that socio-demographic variables are not separate indicators for intention. At the same time, it is within the scope of this research to review the discriminative power of socio-demographics. Several surveys (Gfk-Nürnberg e.V. 2015; PricewaterhouseCoopers AG WPG 2015b, 7; Balderjahn et al. 2015, 16ff; TNS Deutschland GmbH 2015, 8; Heinrichs and Grunenberg 2012, 13ff) indicate that age, gender, income and education have discriminative power to separate different types of sharing consumers. Although these surveys refer to a wide range of sharing contexts, it makes sense to include these socio-demographics in the research. These variables will not be included in the model but the size and structure of the quota sample will allow us to analyse the potential differences.

7 Study design

As the meaning of the durable was used as a moderating variable, two separate samples were drawn with the same structure. In one sample the respondents were asked to think about a non-meaningful durable [group A]. In the other group they had to refer to a meaningful durable [group B]. As all statements were in respect of a concrete durable, this durable had to be defined at the start of the questionnaire. To simplify the process, respondents were shown a list of 50 typical household durables that are offered regularly on sharing platforms.

In respect to the socio-demographics, we used a quota sampling to ensure that sample structures were comparable. Each sample was expected to have \( n = 250 \) respondents.
To analyse the extended TPB model, a regression approach was used. The latent variables of the model were measured using several indicators, which we combined into an index at the end. As a result of the popularity of the TBP, many items had already been tested. This allowed us to measure fewer items in the questionnaire, with the positive effect of a reduced cognitive effort for the respondents. Additionally, we conducted cognitive interviews for validity checks and an online pre-test to review the reliability of the constructs in advance.

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8 Items can be looked up in Zimmermann 2017, 90ff.
After the survey had been completed, we found no significant difference in the composition of the groups. So we were able to compare the results of both samples, which only differed regarding the meaning of the durable. The quality of the operationalisation of the latent constructs had been evaluated in three steps according to Zinnbauer/Eberl (Zinnbauer and Eberl 2004, 6ff). At first, we checked the internal consistency using Cronbach’s Alpha and the item-to-total correlation. Then an exploratory factor analysis was carried out. If the results were acceptable, these were re-tested with the help of a confirmatory factor analysis. As a result, the construct of perceived behavioural control was withdrawn from further regression analysis. The other constructs were kept.\textsuperscript{9} The assumptions for regression analysis—such as homoscedasticity or no multi-collinearity—were also tested.\textsuperscript{10}

8 Results

The expectation to offer a durable for rent is very low on average, with means of 2.63 [non-meaningful durable] and 1.93 [meaningful durable] on a five-point scale, where five represented the highest level of agreement. The difference between the groups is highly significant [p-value of 0.000], which supports the hypothesis that consumers are less willing to offer a meaningful durable for rent.

In contrast, we could not find any differences regarding age and income for the two groups. When it comes to group B the results show that gender has a small discriminative power: men are slightly more likely to offer a meaningful durable for rent than women [+0.25 on a 5-point scale]. The same is true for group A regarding level of education. When comparing the extremes, the results of group B reveal that consumers with a university degree are much more likely to offer a non-meaningful durable for rent than consumers who have completed junior high school [+0.8 on a 5-point scale].

\textsuperscript{9} For more details, see: Zimmermann 2017, 106ff.
\textsuperscript{10} For more details, see: Zimmermann 2017, 110ff.
The multiple stepwise regression reveals that the TPB variables of affective attitude and injunctive norm explain most of the variance in the expectation to offer a durable for rent [79% in group A; 75% in group B]. By including the descriptive norm it can be slightly increased up to 81 per cent in group A [non-meaningful durable]. The former experience variables are unable to add any additional explanation of variance.

Table 1: Stepwise regression analysis of the main model
(http://www.verbraucherzentrale.nrw/978-3-86336-918-7_23_table1)

As expected, the affective attitude is the strongest predictor for the expectation to offer a durable for rent. In the partial model, we tried to explain this variable, partly with the expected consequences. By taking a look at the average rating, we found a relatively low average expectation of financial benefit [group A: 1.76; group B: 2.28] and a fairly high average expectation of associated negative consequences such as the risk of loss [group A: 3.14; group B: 3.63], the risk of depreciation [group A: 3.54; group B: 4.00] and expected effort [group A and B: 3.5]. The external consequences of social benefit [group A: 3.32; group B: 3.07] and ecological benefit [group A: 3.27; group B: 2.72] revolve around a medium positive rating on average.

By using multiple regression, we were able to achieve approximately 56 per cent variance explained of affective attitude for group A [non-meaningful durable] and around 44 per cent for group B [meaningful durable]. Figure 5 shows the results of the multiple regression for group A [non-meaningful durable]. All the examined predictors have incremental validity, except for the expected risk of depreciation. The effect of the expected social benefit on the criteria is the highest, with $\beta = 0.262^{***}$. Nonetheless, the effects of the other predictors are approximately at the same level, with highly significant $\beta$-values from 0.216 to 0.174 in absolute numbers.

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11 Zimmermann 2017, 120; former experiences are added separately in models three to five and can be looked up, ibid.
Comparing this with the results from group B [meaningful durable], we were able to find lower effects for the expected financial benefit (interaction term $= -0.243^*$) and the expected effort (interaction term $= -0.186^*$). In turn, the meaning of the durable does not influence the effects of the other predictors on the expectation of offering a durable for rent.
9 Summary

We have seen that the expectation to offer a durable for rent is relatively low in Germany, which explains the problems of C2C renting platforms in terms of having a sufficient supply. The meaning of the durable actually plays a role in the rating of the expectation rating. Durables that are personally meaningful are not for rent and limit the potential range of durables on these platforms even further.
In contrast to the cited studies, our research does not provide any evidence that age or income discriminate between consumers. In turn, a higher level of education seems to serve as a positive amplifier to become a supplier for non-meaningful durables on such platforms.

Moreover, the lack of durables on such platforms cannot be blamed on factors other than the affective attitude towards offering a durable for rent itself. It would not make sense either to invest in new platforms or to inform or train consumers to use these platforms. It is the attitude towards renting itself that must be changed—and this is indeed a more time-consuming process that can only come about with a shift in the views of society. The examined expected consequences—from which the affective attitude derives—give us some hints at what platform providers can foster in communication. As the financial benefits were rated relatively low on average, platform operators could explicitly mention the possible monetary returns of renting. Furthermore, as the risks seem to be predominantly in consumers’ minds, operators would be well advised to establish and highlight risk-reducing measures such as insurance options or the verification of members.

Nevertheless, the question arises of whether platform operators or even consumer policy actually have the power to increase consumers’ renting behaviour. Despite the Internet and lowered transaction costs, it is possible that C2C renting would not be successful as a result of insufficient intention from the supply side.

To address this issue, there are still several unanswered questions to be clarified:

As socio-demographics turned out to be mainly non-discriminating, could it be that renting-affine people have a certain mindset and character that distinguishes them from renting-rejecting consumers? Is it a special type of consumer that must be addressed?

As only 56 per cent of variance can be explained for affective attitude, which other factors influence affective attitude?
What roles do location and geographical conditions (i.e. neighbourhood in a big city versus rural area) play as they determine physical transaction costs?

Future work could concentrate on these issues and improve the understanding of the economically relevant phenomena even further.

References


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