

Community behavior study regarding charity and greed, using a community sharing fridge

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ABSTRACT

—7 April 2016. Aim Based on the theme of “Vending Machine--charitable and greedy”, the researchers proposed the research question “What does a sharing fridge reveal about a community, regarding charitable and greedy behavior?”. The team then came up with the research tool called “Community fridge”.

Methodology After setting the variables, researchers used field research methodologies like observation and interview and sufficient data was collected.

Conclusion After analysing the data based on the variables set, the research came to the conclusion (1)People have strong community feeling in the community where the research was conducted. (2)The placement of the fridge did not influence the amount of transactions within the community. (3)The community is slightly greedy. (4) People care and make an effort to build their self-image within the community. Finally, there can be concluded that the community fridge works as a community measurement tool. The research is expected to have a beneficial effect on supporting the practice of design for communities and further research on communities.

Keywords

commodity exchange, community, share, vending machine

INTRODUCTION

—In order to explore the field of charitable and greedy behavior, research has been conducted to capture the essence of these parameters. Previous research has noted through a theoretical framework that charity and greed are often influenced by social pressure and audience effects which are indicated by donations (DellaVigna et al. 2012). A fridge with a trading driven system has been used as a

tool to measure charitable and greedy behavior, and explore the mechanism within the industrial design community. These measurements provide qualitative data about the non-financially driven trading behavior of the community and the potential reform of sub-optimal behavior. These qualitative data sets have been conducted by field research.

Because this theoretical framework is based on donations, expressed by numbers, the results are highly reliable for comparison. However, this theoretical framework only distinguishes individual behavior and implicates little information about the mechanism of a community. The primary aim of the present research was to explore how such tool could maximize the value of the existing knowledge and insights into charitable and greedy behavior of the community. Therefore, the results were validated by donations which resulted in the total value of the trading driven fridge.

Our earlier research, shows greedy behavior within the mechanism of the community. However, individuals show more charitable behavior, even when the fridge is placed outside the workspace. The transition, from inside the workspace to outside the workspace, did not influence the number of trading transactions and the total value of the trading driven fridge. At the end of the two weeks trial, the total value of the trading driven fridge slightly decreased (Figure 1). The reason behind this result seems to be social pressure related and financially driven. However, the conducted research lasted two weeks, to compare reliable results the research should have been conducted for a longer period of time within different communities. Even though during the two weeks the equal amount of transactions have been taken place, it seems the community has a passive approach towards this model regarding the feeling of being responsible. Observation has shown that the community felt a little responsibility towards cleaning

the fridge from expired products such as rotten pears. In most situations, cleaning the fridge was left to the responsibility of an active approach from a co-researcher towards this model regarding the feeling of being responsible.

However, when research is conducted for a longer period of time within different communities and is not influenced by subjects familiar with the existing conducted research. It is likely the analyzed results will, the parameters will have a different outcome. Therefore, this paper describes and analyses a tool to measure charitable and greedy behavior within the industrial design community at the University of Technology Eindhoven.

DESCRIPTION OF ACTIVITIES

Within the field research, the behaviour sampling method was used. This involved watching the entire group of subjects, the industrial design community of the TU/e. And recording each occurrence of a specific behavior of interest and with reference to which individuals were involved. This test was conducted for two weeks in March 2016.

The data gathered using this method had several forms. The observations of the people using the fridge, were documented as notes and pictures.

Interviews (appendix.1) were conducted with people that had an interaction with the fridge. This was done afterwards because else it would interfere with the natural interaction behaviour with the community trading fridge.

A comment board was placed next to the fridge, here people could leave a message for others in the community or for the researchers. Pictures were taken every hour to keep track of the state of the fridge. The community that was chosen to conduct this research was the community inside the Industrial design faculty at the Eindhoven University of Technology. This community is a semi-closed community where people know each other vaguely. An open community like a train station would be to anonymous and stealing behavior was expected.

The situation in this building is the following; firstly, there is a canteen upstairs opening at 09:00 and closes at 14:00. Secondly, there are vending machines outside the study space that sell snacks and drinks. Finally, there is the Lucid bar (study association bar), also a good place to get snacks and drinks because the price is cheaper than the canteen and vending machines, the lucid bar is open from 12:00 till 17:00.

The first week the location of the fridge was a workspace for students and staff members. Roughly around 100 members are daily in the same workspace. Although not every day the same people are working in the study space there is enough stability for everyone to know each others' faces. The second week the fridge was moved to the common hall just outside the workspace of the community.

According to the interviews, people felt watched inside the workspace which caused hesitation. Therefore, a difference in behavior is expected when the fridge is moved to the hallway where there is more anonymity.

The design of the community trading fridge was based on a small fridge. Upon this fridge a new layer was added, to create more context and to communicate the concept. This layer was a board placed on top of the fridge to invite the community. It contained an explanation of use (in comic form), bright colors and a slogan to stimulate the use of the fridge. The slogan stated: "Pick a snack and put something back". The inside of the fridge was altered to a grid of shelves with various sizes. The shelf sizes varied to find out if people would put something back of same proportions, that fitted the shelf size. The specific fridge design used for this community can be seen in figure 1.



Figure 1. Community fridge in its context

The concept of the community trading fridge was inspired by several social vending machines. Like the "coca cola happiness machine", this machine was placed in a (student)community and gave gifts to the community. Another inspiration was the "cheap t-shirt machine", this machine was placed on a train station and people could buy a t-shirt for 2 dollars. After interaction with this machine, a video was shown about how these shirts were produced by exploited workers. At the end of the video, the person was asked if they still wanted the t-shirt or wanted to donate the money to a good cause. These were all special social vending machines that inspired to making a vending machine that also allowed to donate and share within a community.

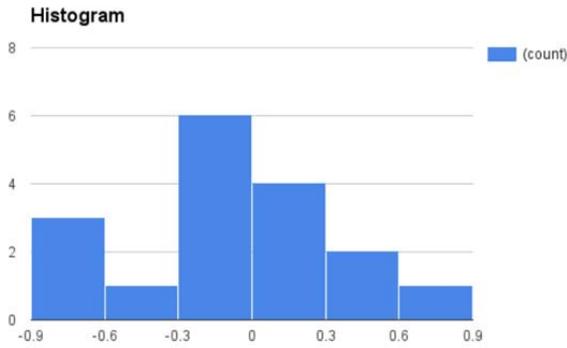


Figure 4. Transactions

Kind of products

The kind of products that were put inside the fridge varied a lot with products like panties, cigarettes, electric wires, old bread, apples, chocolate bars and mandarins. At the beginning of the experiment, the fridge was full of food items. The first transactions was a food item for a non-food item, showing the community that it doesn't necessarily had to be a food item. After all the instructions on the fridge, didn't force the users to trade food for food items.

The preference for the users of the fridge was for the pre-packed food items, which were all high in sugar. 3 times soft drinks were taken out which had a high sugar level and were consumed in the afternoon. From the research Gatenby (1997), there is know that the afternoon is the most likely time of the day, that snacks are consumed. This behaviour is also shown in the kind of products that are taken out, see figure 5 for illustration.

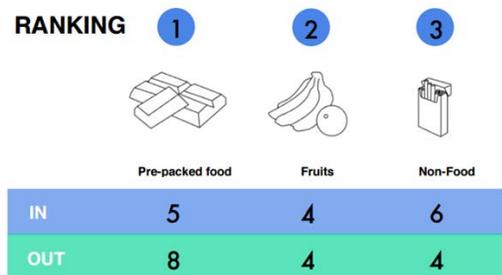


Figure 5. Object transitions, prepacked food, fruits and non-food

Observations

Use of the fridge

In the instructions on the fridge, there was chosen to leave the objects that could be traded openly to the community to interpreted. The sentence "Take a snack and put something back" implies that it is up to the user to put back what they want.

The fridge was observed during the weeks from a small distance to look at the behaviour of the community. A lot of students walked by and stopped for the fridge to read and understand the use of the fridge, however, it was not immediately used. The building where the fridge was placed, can be seen as two big working spaces, where students sit most of the time in either of the two. During the first week, people talking about the fridge and its presence was heard in the other space than the fridge as standing in. The rumour about the community fridge was spreading around the community within 3 days.

Community integration

In order to understand if the fridge was integrated into the community, several observations were made that could be interpreted as integration.

During the 2 weeks, nothing got "stolen" out of the fridge, or what you can also call delayed transactions. When interviewing the students, it already appeared that people didn't dare to take something out, without putting something back for it immediately. Even though a product could be placed back a day later, nobody of the community dared to do this. In the second week, the fridge had received 3 donations, showing good integrations.

To find the boundaries of the communities integrations, a pear that turned bad over the days, was left there by the researchers on purpose. It could reveal if the community felt responsible for throwing away this pear. Likely it seems that the community did not feel responsible enough to fully take care of the fridge since the pear was not thrown away by the community. On the last day of the second week, it was thrown away by the researchers so the fridge would look appealing again.

Comment Board

There are 18 comments in total during the two weeks experiment which includes comments about idea using the community fridge, the comments about the insides and the communication with the community.

According to the comment board (Figure 6), people in the community like the idea of the community fridge as there are 33% of the comments are about the idea and all of them said it was a nice idea. In addition, people in the community also used the fridge to communicate with each other. They talked about the food inside and the quandary about whether they can take out something without putting in. Moreover, there are some positive comments: "Sigaret saved my life" or "Banana!!!" .This phenomenon shows that people feel connected to the fridge and to the community. They use it not only for changing stuff, but also for the intention of communicating with the community which implies that they accept the fridge as part of the community.

People also made comments about bringing social control back to the community. That indicates that to a certain extent, there is a lack of social control in this community.



Figure 6. Comment Board

Interviews

There are 9 interviews in total during the experiment and what was found in light of these interviews were grouped into three aspects.

The first aspect: people think what they put in should be useful to other people in the community. For example, the first person who put in the cable said that he wanted to put in something useful and he did not care about that was food or not. He thought, first of all, it should be useful to the community. Therefore, by using the fridge, people have a feeling that they are supporting the community.

The second aspect: people do not want to seem greedy so most of them will not take out anything if they do not have something to trade. Otherwise, if they took out what was more expensive than what they put in, they would do something which they consider it as charity to balance the input and output. For example, a group of people took out the bar of chocolate in exchange of a mandarin and an apple. They said that they felt as an honest deal since they would share it with others in the group. Through the action as sharing, they kind of found a way to balance the charity and greed.



Figure 7. Interaction with the community fridge

From another interview, the participant expected to eat one apple inside the fridge but he did not because he did not bring anything to exchange. After the interviewer reminded that he could bring something back later, the participant took away the apple and promised that he would put something back the next day. This phenomenon shows that people in this community don't want to be greedy before they show any charity.

The third aspect: the context of the fridge and the shape of the shelves inside influence people's behaviors. One female participant said that maybe if there was no one around, she would take one, but she still would feel guilty. Other participants also mentioned that they were wondering that what if the fridge was put in quiet space or anonymous and they would take it more easily. The shape of the inside also influences people's behaviors as some participants were finding the correct size in the fridge for what they put in.

CONCLUSION AND RECOMMENDATIONS

The aim of this research was to find out what a sharing fridge reveals about a community, regarding charitable and greedy behavior?

There was observed there was a strong community feeling. People liked the concept as they wrote down on the comment board and told about in the interviews. The amount of rumors in the community showed interest. Also, the total value of products inside the fridge increased. This was a sign of appreciation and people have the willingness to share with and donate within the community.

A negative effect of the strong community feeling was that people wanted to do a fair trade because they felt watched. This made some people hesitant to use the fridge. To see if the watching was the issue the location of the fridge was changed.

The placement, inside the space or in the hall near vending machines, of the fridge, did not influence the amount of transactions within the community. A differentiation was expected because people felt more watched inside the space. It should have been more anonymous in the hallway and people would perform the most greedy behavior. However, this did not make much difference which proves the assumptions to be wrong. Because the transactions of the first week whereas many as the second week.

The community is slightly greedy. However, there were some very charitable gifts, that made the total end value higher than the beginning of the experiment. The total movements of the price can be seen in figure 2.

People care about their self-image in the community and make an effort to make it as how they expect it to be.

There can be concluded that the community fridge works as a community measurement tool.

Future steps

The fridge was only tested within one community. Because of this, the conclusions are based on the Industrial Design community department at the University of Technology Eindhoven located in the Laplace building. For more constructive based research this research should have been performed in several different semi-closed communities.

The test run took only two weeks, to see if the concept is fully accepted, the test should be run for a longer period of time to see if it outruns its newness.

Future developments regarding the fridge

Have a small group of people or one person within the community that are responsible for the fridge, to clean it out and manage it. People do not clean the fridge out on own initiative.

Another improvement would be to create rules about what not to put in, like sandwiches and opened packages are not easy to trade and run bad too quickly.

ACKNOWLEDGMENTS

The advice given by our teachers, Stephan Wensveen and Annika Hupfeld, have had a great impact on the research. It helped us to have a guided process.

We want to thank the Industrial Design community for accepting and using the community fridge and help us to conduct our research.

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APPENDIX

Interview structure

Questionnaire questions (behavioral based interview, in person)

Vending/trading

What do you like about traditional financially driven machines?

What do you like about this kind of trading driven machine?

What do you want to get out of the fridge and how much? And why?

When do you want to have some food or drinks out of the fridge and how much?

And why?

How much food or drinks would you put in the fridge?

And why?

When would you put food or drinks in the fridge for someone special?

And why?

What does an open space within the fridge means?

Should it be refilled?...

Community

How would you describe your connection with the industrial design community?

How would you describe the industrial design community here?

Can you describe the communication within the industrial design community?

How often are you in this space?

Interaction

How do you act when you have immediate access to the food and drinks?

How does the community influence your actions?

Would you act differently in rather having a machine giving you the food or drink?

(not talking about the money, but talking about the dialogue, interaction with the machine)

Would you take food or drinks out of the fridge even when there is nothing interesting for you? (nothing tasty according to your taste)

How come you are taking food or drinks out of the fridge even when you did not put something back?

How come you are putting food or drinks inside the fridge even when you did not get something out of it?

How would you react on food and drinks out of date in the fridge?

What do you think of the balance in the fullness of the fridge?

Improving

Do you have a suggestion about how to improve the dialogue between the fridge and the user?

Do you have a suggestion about how to improve the trading system?

Do you have a suggestion about how to increase the quantity of exchange?

Do you have a suggestion about how to increase the qualitatively of exchange?

Do you have a suggestion about the size of the fridge?

Do you have a suggestion about the color of the fridge?

Do you have a suggestion about the material of the fridge?

Do you have a suggestion about how to improve a fair trade with the fridge?

Bibliography

à Campo S.P.H.M. (Simon)



Is a master student (1993, NL) Industrial Design at University of Technology Eindhoven (TU/e) in the Netherlands. He received his bachelor degree Industrial Design in February 2016 also at the TU/e. His main interests are in community design, interaction design and branding small companies. Using his hobby juggling as a inspiration for these interest, he also published a paper about the visualisation of the

jugglers brain.

His contributions to this research paper are the interpretation and analysis of the data together with Ziyang. Specifically in this part, he focused on the transactions and observations made on the community fridge. Together with the team he co-designed the concept and prototype and could use his experience of communities from past projects to

Driessen R.F.R. (Rincke)



Rincke Fides Rafaël Driessen was born in Nijmegen, the Netherlands in 1990. He is a master student at the faculty of Industrial Design at the Eindhoven, University of Technology, the Netherlands. He received the Bsc. degree in Industrial Design from Eindhoven, University of Technology (TU/e), the Netherlands, in 2014. In between his bachelor and master program he enjoyed a sabbatical and started as a

freelance designer, designing websites and products for various parties. Momentarily he works as a student assistant, teaching other students Grasshopper3D. His main areas of interests are conceptual design, product design and interaction design.

His contributions to this research played a big role in the development of the research concept. During the experiment he had the Wednesdays for observation, taking notes, photos and interviews, in collaboration with Ziyang. For the final paper he wrote, together with Martine, the “description of activities” part.

Li Z. (Ziyang)



A master exchange student from school of design, Jiangnan University in China. She finished her bachelor years in Beijing Normal University (BNU) and enrolled in Jiangnan University for master courses. As focused on product design during the bachelor years, she aims to develop further on product interaction design and learn various design research

methodologies to find out how to use them in distinct design projects.

Her contribution to this research was co-develop the concept for the research of the sharing fridge with the team. She worked together with Simon on the back instruction board design of the sharing fridge and kept on observing and taking notes with Rincke every Wednesday during the experiment. As for the final paper, she wrote together with Simon about the Interpretation and Analysis part.

Smits L.M. (Lisa)



Lisa Malou Smits (1992, NL) was born and raised in Delft. Currently she doing the Master's program Industrial Design at the Eindhoven University of Technology (TU/e). Her previous education is Bachelor of Design(BDes). She achieved this education in the summer of 2014 on the University of the Arts Utrecht (HKU). After her

graduation she worked one year as a self-employed. During this year she established a place where novice designers can develop their skills and work together with different teams to create a diverse composition in order to achieve a higher level of creativity.

To optimize her technology, business, research and academic writing skills she followed a clear path towards innovative integrated technology and academic research. During the pre-master she could begin to implement her vision on design and develop her professional identity. According to her design should be about a balance between function, format and society. The most important value in a design process is to understand what creates meaning for people. It is crucial to avoid or reveal unnoticed assumption during the entire process. Therefore, a diverse team with different expertise and cultures is required in order to achieve a higher level of creativity, meaning and understanding.

Her contribution to this research was co-developing the idea behind the trading system and capturing the value of this model in a scientific paper. Restraining the research question from inaccuracy to maintain the precision of the conducted research.

Other additional contributions to the constructive design research such as arranging the fridge, observing and collecting data, co-creating the presentations and writing the introduction of the final report.

Bak M.A. (Martine)



Martine Antoinette Bak was born in the Netherlands on February 20, 1994. She received her Bsc degree in Industrial Design from University of Technology Eindhoven, Eindhoven, The Netherlands (2016). She has currently enrolled the Master program of Industrial Design from the University of Technology Eindhoven.

In this Master she aims to further develop herself in a user driven designer. As a user driven designer she likes to work in the real context. Working in context means for her that she can work on real opportunities and create meaning for people. User groups she mainly is interested in is Families, children and young adults. Subjects she is especially interested in connections between people, sustainability and energy. In the future she would like to work in a small design firm and finally setting up her own small firm.

Her contribution to this research was developing the concept for the research of the sharing fridge with the team. She worked together with Liu on the physical building of the sharing fridge. The focus on the paper was the description of activities, this she wrote together with Rincke.

Liu B. (Baisong)



A master exchange student with chemical and product design background. Currently studying in Jiangnan University in China, focusing on interaction design and user research. He had one paper published, discussing integrating subliminal researches with interaction design.

The whole team conducted the research together, and he took part in all the group activities, he took a leading role in proposing the interview questionnaire, and generate conclusions from analyzed data.