Long-Term Focus Groups as a Mobility Research Method

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As part of an interdisciplinary research project, a primary objective was to identify the imagery that is characteristic of specific regions in terms of mobility and transport.[01] In order to utilize qualitative methods together with existing quantitative data, a focus group was recruited and deployed for various surveys and workshops. Group consultations provided a means of testing concepts, developing new ideas, overviewing public acceptance of a service, and studying the impact of an initiative, for example. Of particular significance here is the fact that the focus group was assembled at the beginning of the project so that it was possible to work with the same people throughout the entire project. Since the focus group existed for more than three years, this method is referred to in the following text as the *long-term focus group*.

Prototypical applications and scenarios were to be tested with people of different age groups and from different physical environments to gain insights into the effect of designs on individual mobility behavior. In this context, methods were chosen and developed in order to discuss specific questions from the fields of design, traffic, technology, and urban planning. User-specific data was collected and made available to the other project partners, while taking data protection into account. In the end, this new method of mobility research was evaluated.

This essay presents both the participatory work with the focus group and the content-related activities. In conclusion, an evaluation of the long-term focus group method is provided.

Current Status of Research and Research Questions

In addition to social or market research, the focus group method has also been more commonly used in recent years within mobility research as a qualitative or explorative method, as the following selection of projects illustrates.

One application of such a focus group, for example, is to find out about (potential) user views. For this purpose, three different focus groups (»new customers,« »combiners,« and »opt-outs«) were used to evaluate two bicycle rental systems as part of the research supporting the laboratory phase of the pilot project »Integration of public bicycle transport,« conducted by the city of Berlin (WVI 2010). A bicycle rental system was also investigated in the study of the city of Mainz's MVGmeinRad. There, focus groups were deployed to analyze the intermodal use of the bicycle rental system »in combination with bus and train« (Czowalla et al. 2018). In another project titled »Social Science Research on the Rhine-Main E-Mobility Regional Model—User Acceptance and Optimization,« participants in pilot projects discussed their experiences (Blättel-Mink et al. 2011). Interactive focus groups were also utilized as a means of investigating »user demands for individual mobility solutions, how users assess various micro-vehicles and how these can be employed in their everyday mobility« (Pollmann et al. 2018).

Focus groups are also utilized to formulate hypotheses or evaluate scenarios. For example, focus group interviews were conducted to »obtain a basis for formulating hypotheses« (Pecharda 2008). As part of the research project »AVENUE21—Automated and Connected Transport: Evolution of Urban Europe,« focus groups were deployed to evaluate possible scenarios (Mitteregger 2020).

This methodology is also used when social research institutes are engaged to carry out mobility research. For example, the infas Institute for Applied Social Science, commissioned by the automotive supplier Continental, conducted international mobility studies between 2011 and 2018 using focus groups. These studies had alternating focal points and dealt with »the structure of everyday mobility« (infas n.d.).

01 The research project »Infrastruktur—Design—Gesellschaft« (2018 to 2021) was funded by the Landes-Offensive zur Entwicklung wissenschaftlich-ökonomischer Exzellenz (LOEWE) in the German Federal State of Hesse with the following lead project partners: the University of Art and Design in Offenbach (design, overall management), the Frankfurt University of Applied Sciences (transportation planning), Goethe University Frankfurt (mobility research), and the Technical University of Darmstadt (media and communication technology/architecture).

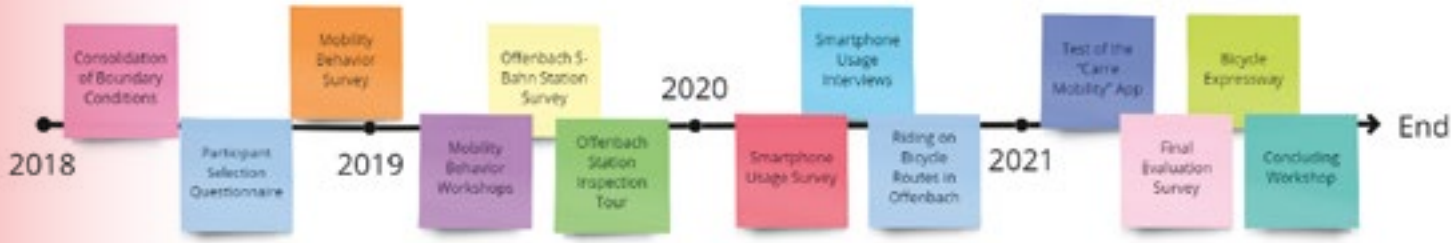

Fig. 1 Timeline of focus group activities (authors' illustration)

In the project discussed below, the utilization of the focus group took place under similar background circumstances as in the aforementioned projects. In contrast to those, however, this focus group was used not only to answer one but several questions over the course of the entire project. Since this method had not been previously applied in such a way within mobility research, the following research questions were investigated:

- What are the advantages of the long-term focus group method for the project?
- What are the advantages of the long-term focus group method for the participants?
- In what ways can participants be motivated to continue their involvement?

Procedure

This essay describes the procedures for assembling the focus group for collaboration, conducting surveys and workshops, and project closeout. The individual steps and activities are represented in ↳Fig. 1.

In the first half of 2018, the boundary conditions for the characteristics of focus group participants were defined (mobile persons living in the Rhine-Main region). The actual recruitment of the focus group began in August with an online survey. The announcement was made via e-mail distribution lists, personal contacts, the press, various newsletters, social media, and other universities in the Rhine-Main area. In December 2018 the selection process was concluded. For the focus group, 232 people were recruited who met the boundary conditions.

The group was comprised of 40 percent women and 60 percent men. The 46 to 55-year-old age group was the most heavily represented, followed by 56 to 65-year olds and 26 to 35-year-olds, each with about 20 to 25 percent. The remaining 30 percent was split between the 36 to 45-year-old, 18 to 25-year-old, and 66 to 74-year-old age groups. Only two people were over seventy-five years of age. Most individuals (97 percent) held a driver's license. Only 0.4 percent of participants said they could not ride a bicycle.

Data protection played an essential role in project implementation. For example, it had to be possible to correlate one person's responses to different surveys. In addition, the plan was only to write to certain people in some cases; for example, just those who had previously taken part in a survey. Nonetheless, the data collected was to be anonymized. For this reason, three-digit personal identification numbers were assigned in the first online survey on mobility behavior. Starting with the number 101, all participants were respectively assigned a consecutive number. To minimize the risk of incorrectly entered numbers, rep-digits, as they are called, were omitted. In the surveys, participants then only had to enter this code and not their name or e-mail address.

In the first workshops held in March 2019, each with between ten and twenty-five participants, not only mobility behavior but also participation expectations for the focus group played an important

role. In this way, expectations that could not be met could be eliminated at the beginning and information about the working methods and opportunities in the LOEWE research project could be provided. The expectations of workshop participants can be grouped into the following four categories: personal development, influence on mobility, transformation of transport, concrete positive results. Feedback from participants during the focus group activities was recorded and taken into account when planning further activities.

To strengthen cooperation with the focus group members, regular e-mails were sent to the entire group, including invitations to surveys or workshops as well as reports on the current status of the project—and even Christmas greetings. Incentives were also sent out as a token of appreciation for participation. By being included in newsletters and invitations to events, participants were able to obtain more detailed insights into the research and to become better acquainted with the project consortium.

In the final year of the project, the focus group was invited to participate in a survey and a subsequent workshop. Both served to evaluate the long-term focus group methodology from the participants' point of view.

Summary of Thematic Work and Related Findings

In August 2019, the focus group was invited to an inspection of the Marktplatz S-Bahn station in Offenbach, in cooperation with the Design Institute of Mobility and Logistics at the HfG Offenbach. The inspection tour with nine participants focused primarily on the design of the station. In addition to a previously conducted online survey, the participants were asked on-site which waiting areas on the platform they preferred. Through this it became apparent which factors influenced the choice of waiting areas. Findings from the survey were incorporated into research work at HfG Offenbach (project-mo.de 2021).

In collaboration with computer scientists, a preliminary concept for an app to promote environmentally friendly mobility behavior was tested (Gilbert et al. 2020). This app uses activity recognition via smartphone to record the mobility of users in order to improve mobility analysis by means of concrete mobility data, while at the same time illustrating for individual users their own personal mobility. During the test phase, additional functions were automatically activated. A survey on smartphone use took place in March 2020. Due to the pandemic, subsequent workshops on the further development of the app concept had to be cancelled, but these were replaced by individual interviews via video calls in May 2020. Based on the survey and interviews, a detailed concept for the app was developed (see Reitmaier et al. in this volume).

In road tests of cycling infrastructure such as the cycle streets in Offenbach am Main in September 2020 and the bicycle expressway between Darmstadt and Frankfurt in August 2021, weak points and obstacles, as well as the advantages and attractiveness of these kinds of projects, could be directly evaluated during use. It became apparent that many road users are not familiar with the concept of cycle streets. Therefore, the small section from the focus group that participated also suggested that the rules should be better publicized. In addition, they felt that uniform rules for the design of such lanes would be beneficial. In the case of the bicycle express lane, participants criticized a sign in the middle of the pavement as well as a steep drop at the pavement edge but they especially highlighted the overall ride experience and the lane width as being positive. These results were passed on directly to the FrankfurtRhineMain Regional Association and could thus be incorporated into the further development of regional high-speed cycle lanes.

Focus group workshops were also held to test the Carré Mobility app for interconnecting neighborhoods as part of the »Environmental Mobility Hub« research project. Prior to this, a potential analysis for the mobility platform Carré Mobility had been conducted in the research project of the same name (Schäfer et al. 2021). Workshop participants had the chance to test the app and its functions before its release and to provide feedback. Tests of the app provided information about its user-friendliness and comprehensibility. These

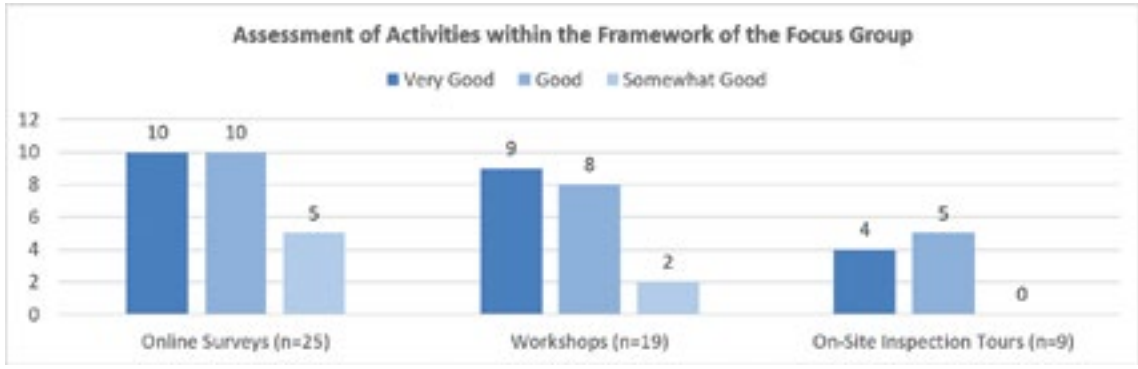

Fig. 2 Assessment of events

findings are being incorporated into the further development of the app in order to adapt it to the needs of future users.

When evaluating and interpreting the results, the fact that the focus group was not representative and that some participants' mobility behavior was very similar was always accounted for.

Evaluation of the Participation Process

A final survey was conducted in June 2021, with all focus group members invited to participate, regardless of whether or not they had contributed. The aim was to find out what people thought about participating in the focus group and in this way evaluate the work done with it. At the outset, respondents indicated whether they had participated in activities such as surveys, workshops, or site visits.

Subsequently, fifty-five people who had not participated were asked about the reasons for their lack of participation. The main reasons given were lack of time, lack of information, distance from home, and other commitments. Twenty-five respondents who had participated in actions during the focus group were able to indicate which activities they had participated in and rate these on a six-point scale (very good to very bad). The assessment of activities was predominantly positive (↳Fig. 2).

With regard to the online surveys, in the open-response box, focus group members praised the design and comprehensibility of the questions, the »interesting and relevant« questions, and the preparation for subsequent workshops and inspection tours. Two respondents criticized the answer choices as being »not always appropriate.«

In respect to the workshops, respondents particularly emphasized the exchange with other participants and the »positive and open« working atmosphere. Respondents approved of the on-site visits as a way of »getting a picture of the situation.« They praised the way these were conducted. One suggestion for improvement was that there should be more intermediate stops.

The assessment of communication, on the other hand, was more mixed (↳Fig. 3). In this respect, available communication channels were used to varying degrees. While (almost) all focus group members were aware of the newsletter and the communication in e-mails, ten people could not remember the Christmas card from the first year of the focus group. About two-thirds of the respondents did not make use of social media.

In the open-comment boxes, respondents praised the e-mails as being »appreciative,« »personal,« and »friendly,« as well as the layout of the newsletter and the opportunity to ask questions. As a point of criticism, one respondent wanted to publish more on the »common social media platforms« and complained that in one instance »communication had broken down.«

Subsequently, the long-term focus group was evaluated as a method of involving interested laypersons in the research. In the process, nineteen respondents rated the method as »very good« and five respondents as »good.« Subsequently, they

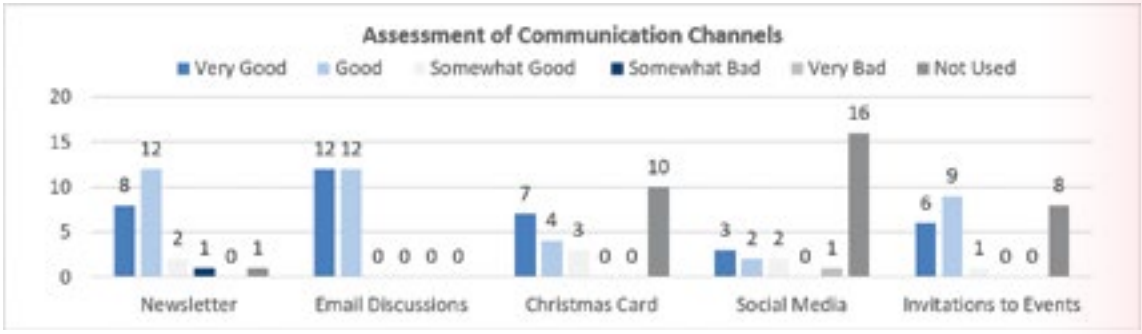

Fig. 3 Assessment of communication (n=24)

provided the reasons for their assessment in the open-response box:

– Change of perspective through the involvement of outsiders,
– Increasing acceptance through the involvement of users,
– Sharing knowledge among focus group participants.

Respondents were then asked to indicate whether their expectations from the start of the focus group project had been met. Ten respondents indicated that their expectations had been met and thirteen people that their expectations had been partially met. The latter were then given the opportunity to highlight which expectations had not (yet) been met. In this context, two respondents mentioned that the COVID pandemic had not had a »communication-enhancing« effect, and two other respondents said that they knew too little about the project results.

Following on from this, suggestions for improvement were made. Respondents mentioned an increase in communication, a shorter project duration, an increase in the number of group participants, the choice of topics, and the desire for more in-person events. At the end of the survey, forty-four people agreed to remain in the focus group to continue supporting the research.

Conclusion

The focus of the project was to recruit and monitor a focus group of residents of the Rhine-Main area for the research network. By means of this group, scientific findings derived from the user perspective were to be obtained by involving interested laypersons. The project concentrated particularly on the long duration as well as the participative work. As a result, the question arose as to the advantages of the long-term focus group method for the project. It was an advantage that the focus group was assembled at the beginning of the research project and as such could be available for the entire project duration. The group could be used as a whole or in different constellations without having to recruit a new group each time. In addition, the participants knew about the project and its goals from the very beginning. That made it easier to deploy the group, since they did not have to be informed about the entire project during the activities, but only about the current status or the respective goal of the activity.

Furthermore, the benefits of this method for participants were explored. By having the opportunity to express their opinions on current topics in mobility design and to test applications, participants were able to influence and help shape research in the field of transportation, to bring the perspective of »outsiders« into the research, and to report from the perspective of users. However, it must always be kept in mind that the focus group tended to be somewhat homogeneous in their behavior and attitude toward mobility. This point

was always factored into the analysis. For example, during the tours of the cycling infrastructure, for the most part it was the assessments of those who are bicycle-savvy that were collected. When recruiting the next time, this should be considered more closely, so that the participants differ more in their mobility behavior. People who participated in the final survey also mentioned the transfer of knowledge to lay people as one of the advantages offered by this method. In addition, workshops and on-site visits provided opportunities to get to know the other group members and to exchange ideas in discussions. More in-person events and further opportunities for exchange were mentioned as ideas for improving future collaborations.

Owing to the duration of the project, it was necessary to motivate the focus group over a period of several years. Therefore, ways in which this could be done were investigated. Traffic and mobility are topics that affect almost everybody, and a large proportion of the population consider these almost every day. When the focus is on mobility design, such as the design of infrastructure or applications, user opinion is an essential factor. It is important to involve the focus group in such a way that participants feel they can freely express their judgments and exchange views with other group members. In the final survey, these two points in particular were given a positive assessment.

Due to the significant amount of effort involved in participation, maintaining participant motivation proved to be one of the more difficult issues. Despite constant communication and invitations to surveys, workshops, etc., there was no way to prevent some people from dropping out of the focus group during the course of the project.

In addition, not all participants were equally interested in all activities and research projects. However, the topic of mobility concerns almost all people, which is why in theory all persons from the focus group were potential participants in the activities. Since they could decide whether to participate, however, it was often their particular interest, for example cycling, public transportation, or apps, that played a decisive role. This degree of flexibility and the ability to form small groups for the various activities were only possible because over 200 people were recruited at the outset.

On the whole, it can be stated that the long-term focus group method provides an opportunity to obtain the user point of view over the entire duration of a project, or over several projects, and to test new ideas. This type of focus group can be used in particular for questions that relate to the user's perspective on transport modes or services. This has also motivated some participants from the focus group to continue supporting the research.

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