Increasing the Sustainability of Online Brand Communities by Organising Offline Events

Bachelor Thesis

Team 7

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**Abstract**

A brand community is a specialized group of admirers of a brand that is not necessarily geographically bound. Due to technological advancements, communities rely increasingly on virtual means of communicating. For a virtual part of a community to be sustainable, members must keep contributing by, for example, posting messages. This paper investigates the reasons for people to participate in virtual communities and whether this is stimulated by attending offline events organized by the same community. Furthermore, we looked at the moderating effect of considering the products related to the brand community as hedonic or utilitarian. We investigated this by conducting a survey amongst members of the Amazon Mechanical Turk and Reddit community. Our experiment shows a, on average, positive relationship between offline events and online participation. The p-value regarding this effect is marginally significant and shows a confidence interval overlapping with zero. Combined with the absence of consensus in earlier research, this does not enable us to draw conclusions on the relationship between attending an offline event and online participation. However, when looking at the moderating variable the data analysis showed that community members are more eager to participate in an online brand community if the product that is offered by the brand is considered hedonic rather than utilitarian.

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## 1.1 Relevance

A brand community is a specialized group of admirers of a brand that is not necessarily geographically bound (Muniz and O'Guinn, 2001). Due to technological advancements, communities increasingly rely on virtual means of communicating. Bender (1978) already pointed out the relevance of a virtual dimension in brand communities. He described how low cost and easy accessibility of online spaces allow members to establish practical and emotional relationships which are not bound to location or time. For a virtual part of a community to be sustainable, members must keep contributing by, for example, posting messages (Lin, 2007). Members must keep contributing as they might lose interest due to the lack of new content on the platform. New messages can inspire or help other users using their embraced brand.

Traditionally, members of brand communities interacted offline. However, since the emergence of the internet, online opportunities have given brand communities an entirely new dimension. Technology-based communication platforms are more commoditized than ever before and consequently reaching fast-growing audiences. Network effects of brand communities increased to a great extent. Engagement grows; the community gains knowledge and generates more value (Bussgang & Bacon 2020). Active members help to acquire new members, thereby decreasing acquisition costs. An online platform allows for easier and faster access to other members than offline events. The fact that 45% of the world population has a smartphone amplifies this effect. Member's availability improved, and they can support each other by merely posting messages online, leading to lower costs of service for businesses (Bussgang & Bacon 2020).

Organizing offline events are a way to get brand community members to identify more with other members and the brand itself. This increase stimulates engagement with the community and could positively affect online participation. Participation includes viewing and posting activities, respecting the rules of the community and replying to solicitations, physical attendance and co-organizing. Engagement focuses on online presence, namely the frequency and intensity of visits, posting, commenting and sharing (Ardichvili et al., 2003).

Now that the overall importance of participation in online brand communities is clear, the question remains why people would participate. In this paper, we investigated these reasons. Specifically, we focused on the question whether companies can enhance participation in online parts of the communities by organizing offline events, such as gatherings and activities, and whether the product or service is being considered hedonic influences this relationship, in comparison to being considered utilitarian. For this paper, we decided to define hedonic goods as goods primarily providing experiential consumption and pleasure, whereas utilitarian goods are primarily providing instrumental and functional value (Dhar & Wertenbroch, 2000). For managers, we expect it to be more effective and relevant to try to increase consumer participation by organizing offline activities for hedonic goods than for utilitarian goods. We assume that people feel more need to identify and engage with a brand when it leads to a feeling of pleasure. They are less concerned with this when it comes to fulfilling a need with utilitarian goods or services (Żyminkowska, 2018).

## 1.2 Conceptual model

Taking into account the above-mentioned reasons that might increase online participation, the central hypothesis of this paper is: on average, the individual member participation in offline gatherings has a positive effect on individual member participation in online brand communities which is intensified when the product or service is considered as hedonic by the community. The increase is higher for a product or service when it is considered hedonic by the community compared to when a product or service is considered utilitarian. This hypothesis contains a causal claim and is visualized in a conceptual model (see figure 1). The underlying research question related to the hypothesis is: what is the effect of participation in offline events on the number of contributions made by an individual community member in an online brand community and what is the effect of whether the product or service is hedonic on this relationship? This research question consists of several elements. We will elaborate on these elements in the following paragraph.

First of all, the focal unit in the research question is community members. Secondly, the domain is all the members of the group of brands with an associated online community that also organize offline interactions. Due to the geographical dispersion of members of online communities, location is not a limitation to the theory. Thirdly, the explicit causal relation expressed in the hypothesis is that a member of a community has a higher level of participation online after visiting an offline gathering than someone in the same community who did not take part in the offline gathering. We define participation in the online community in line with earlier research by Pöyry et al. (2013) as producing content for the community (interactive, contributive usage behaviour).

Participation in offline gathering

Individual member participation in online brand communities

Hedonic product or service

Figure 1 – Conceptual model

## 1.3 Research strategy

To find out whether the hypothesis displayed in the conceptual model above is supported, we conducted a literature review and an experimental study supported by an online survey. Our strategy included a 2 x 2 between-subject design. The population consisted of the ‘SampleSize: Where your opinions actually matter!’ Reddit community and of the Amazon Mechanical Turk community. The effect size of our research concerns the effect of offline events on online participation. Additionally, a second effect size in our study expresses the moderating effect of considering the product related to the brand community as hedonic, in comparison to considering it utilitarian, on the relationship between attending offline events and online participation. These effect sizes are measured as beta coefficients by constructing a linear model.

## 1.4 Managerial relevance

A real-life example of a brand community, that we will discuss to create a more clear and vivid view of our research question, is the case of the Walt Disney Company. This company is a well-known example of a brand which invests substantial amounts in its community. For years, they have been very active in positioning their brand as an entertainment experience, rather than just a media company. These investments have resulted in a large number of Disney fanatics, which are connected by a deep love of the magical brand of Disney (Peckover, 2020).

In the case of Disney, an offline event in which fans of the brand come together is the D23 Expo. People from all over the world join this yearly three-day event to share their enthusiasm for the brand. Given Disney’s reputation of fun and excitement, it is considered a hedonic brand (Pettigrew, 2011).

If we apply our research question and hypothesis to this case, we would like to know whether people who attend the offline events, participate more in the virtual communities after the gathering than community members who are similar in characteristics but do not attend the offline events. Disney's marketing managers could use the outcome of this research in their future marketing strategy and the development of their virtual community spaces.

Even though Bender (1978) already described the concept of virtual brand communities, real advancements in the research on online aspects of brand communities were only made in the last decade. Several research articles, which are discussed later in this paper, investigate the reasons for people to participate in online communities. In these articles, the effect of offline interactions between members on their online participation has been the subject of research as well. Nevertheless, the findings in the research papers have not been consistent and show opposing findings. As a result, it remains unknown whether offline activities and interactions do enhance or restrict online participation. This ambiguity is one of the reasons why a critical review of different sources and this research topic is very relevant.

Furthermore, most of the papers have focused on virtual communities that were not centred around, nor maintained by, brands. The communities investigated are made up of people who share the love for a specific activity (e.g. cooking), rather than for a brand. As this paper focuses explicitly on communities centred around brands as their central topic, the theoretical domain fundamentally differs from research done before. Moreover, the papers discussed in chapter 3 are respectively nine and thirteen years old. With the pace in which technological advancements take place nowadays, updated research with more recent data could be relevant.

The considerations in the previous paragraphs make that our research findings are relevant to managers, specifically to those concerned with marketing. For a virtual community to be sustainable, participation of its members is vital. When members stop contributing to the community, it will cease to exist (Lin, 2007). Therefore, it is of utmost importance for managers to find methods that reinforce the participation of members. This paper considers a possible strategic action in this regard. When participation in offline events enhances community members' participation in the online community, organizing offline events could be part of a brand’s strategy to create a sustainable brand community.

## 1.5 Next chapters

In the upcoming chapters, we will first focus on the theory and studies related to our research by performing a critical evaluation and a critical synthesis of these studies. Our research will follow up on this by first describing our method and measurement protocol, after which we will interpret the results on the treatments effects, interaction effect and control variables. The results also include managerial implications and lessons learned. This paper ends with a discussion chapter that provides a conclusion of the conducted research and includes recommendations and limitations.

# Chapter 2: Theory

## 2.1 Definitions

The thinking process to decide on a hypothesis started with the following question: what can we do to help brand community managers stimulate positive and sustainable individual member participation? This question led us to choose individual member participation in online brand communities, as a dependent variable. The theory-based definition differs in previous papers. Ardichvili et al. (2003) described it as ‘viewing and posting activities, respecting the rules of the community and replying to solicitations, physical attendance and co-organizing’. As was mentioned in the introduction, we decided to take a slightly different definition by defining individual member participation in line with Pöyry et al. (2013) as producing content for the community (interactive, contributive usage behaviour).

The next step was to come up with the independent variable. This could be a brand, content or community factor. We decided to go with a community factor, namely the participation in an offline gathering. The final variable of our hypothesis, which is the moderating variable, includes a hedonic product or service. A good or service is hedonic when it relates to a feeling of pleasure, more than with a feeling of necessity (Dhar & Wertenbroch, 2000).

## 2.2 Effect

Several theories to explain the relationship between offline events and online participation exist. First, the positive effect of participation in an offline gathering on the participation in online brand communities might be a result of the decrease of bridging social capital when people attend offline events (Sessions, 2010). Another possibility is that offline events stimulate people to form closed networks. These two findings can explain why people will feel more attached to a community after attending an offline event (Chen & Cage, 2013). Lin (2007) mentions this theory of an increased sense of belonging as well and describes it as the experience of personal involvement in a system or environment so that persons feel themselves to be an integral part of the system or environment.

## 2.3 Causal model

The focal unit in our research is community members. The theoretical domain is the group of brands with an associated online community that also organize offline interactions. The explicit causal relation expressed in our hypothesis (see figure 2) is that a member of a brand community has a higher level of participation online after visiting an offline gathering than someone in the same community who did not take part in the offline gathering. This effect is expected to be strengthened when this brand is considered hedonic.

Participation in offline gathering

Individual member participation in online brand communities

Hedonic product or service

Figure 2 - Causal model

Chapter 3: Critical Evaluation of Studies

The critical evaluation aims to evaluate and synthesise the results of empirical studies in the field of brand communities. We analysed various papers based on a checklist to validate if the presented results and recommendations are academically sound. All papers are discussed in detail in appendix 5.

3.1 Focal units

When comparing different articles, two categories of focal units can be distinguished. Most articles research the level of individual community members (McCully et al., (2011); Koh et al., (2007); Pöyry et al., (2013); Sessions, (2010)). Other studies research the level of a community as a whole (Muniz and O'Guinn, (2001); Lin (2007); Chen & Cage, (2013)).

Offline interaction can increase the online participation of individual members who participate in these offline events. However, as the community exists of members who attend offline events and of members who do not, the participation of these non-attending members also influences the overall participation in a community. If the existence of offline events influences the online participation of non-attending members, the effect on the participation of members on the individual level and the whole community might differ. Therefore, choosing different focal units makes a significant difference.

3.2 Independent variables

The most common independent variable amongst the articles is offline participation, implying attendance to an offline event. Pöyry et al. (2013) and Muniz and O'Guinn (2001) use a different independent variable. The former focuses on the type of motivation to use Facebook pages, either hedonic or utilitarian. The latter does not contain an independent variable, since the paper does not test a hypothesis, but focuses on the theoretical notion of brand communities.

We evaluated the measurement validity and reliability by examining the procedures of previous empirical studies. The measurement validity and reliability of the independent variables are all sufficient or high. To illustrate, Pöyry et al. (2013) measured the independent variable using several questions. To evaluate the measurement validity, we examined the methods sections of this paper. The authors described they calculated loadings for each item in the survey, and they all met the threshold. Consequently, we concluded that the measurement validity for the independent variable was high. Another example, Sessions (2010) measured the independent variable, participation in offline events, using an online subscription list. To increase the validity, the researcher compared the people on the pictures posted on the gatherings page to the people on the attendees' list. On this basis, we concluded that the measurement validity was high. Also, these measures are objective and therefore considered reliable. We applied a similar evaluation method for all other papers as can be seen in appendix 5.

3.3 Dependent variables

All the dependent variables are related to the relationship between brand community members and the community itself. This relationship varies from posting activity, participation and contribution in general, to a sense of belonging and the strength of bridging and bonding social capital. Posting activity, participation and contribution in general are most relevant to our hypothesis since they concern our definition of participation. However, the other dependent variables are essential for our research too, since they give a broader understanding of the effects of offline events that are relevant to managers. For instance, a sense of belonging can further increase participation as an intervening variable. To evaluate the measurement validity and reliability for the dependent variables, we used the same approach as with the independent variables. We looked if the procedure was clearly described by the academic, and we searched for possible shortcomings (see appendix 5). We have concluded that the measurement validity and reliability of the dependent variables are all high or sufficient, except for the papers written by Koh et al. (2007) and Pöyry et al. (2013). For the article by Koh et al. (2007), validity and reliability are low because it is unknown how the dependent variable is measured, besides the fact that they used a survey as a research strategy. On the other hand, the article by Pöyry et al. (2013) lacks measurement validity for the dependent variable since they observed a disconnection between the member's perception of participation and real participation based on server-log data.

3.4 Theoretical domain and population

The theoretical domains in the articles are different but have some overlap. Overall, they are stated in very general terms and do not focus on a certain period, country or industry. The only domain which is significantly different compared to the others is the one in the article by Pöyry et al. (2013). This paper did not focus on (members of) virtual communities hosted by brands but researched members of brand-hosted Facebook pages instead. As described in the discussion on this article (appendix 5), the attendance of multiple brands on the same platform (Facebook) might cause different results compared to the papers which focus on regular brand communities.

In contrast to the theoretical domains, the populations do differ as they are specific subsets of the theoretical domain. They are either determined by distinguishing organisations, brands, locations or media platforms. For example, Lin (2007) takes thriving virtual communities in Japan as a population, whereas Pöyry et al. (2013) focuses on members of a specific travel agency's Facebook Page. In the first case, the population is bound by location. In contrast, for the second example, a specific brand is the population of interest.

3.5 Research strategy

The most common research strategies in the papers are the use of surveys and the use of data from a database. The use of surveys reduces internal validity and reliability in comparison to other research methods. Specifically, server-log data has a higher internal validity because with surveys there is a risk of respondents not answering honestly or correctly. People might think they are more active than they are. Furthermore, as was described in the article by McCully et al. (2011), there is a disconnect between members' perceived participation and their actual participation. In that study, the behavioural data of participants' participation showed different results than the conducted survey, which asked participants to assess their level of participation. To measure the concept of participation, this disconnect may cause a significant problem with using survey data. Using server-log (behavioural) data instead of, or even better in addition to, survey data, would solve this problem. Nevertheless, for example, Koh et al. (2007) only used surveys in their research.

In general, some of the articles described are merely exploratory. They research the relatively new concept of brand communities and often use a multi-method approach. For example, in the article by Muniz and O'Guinn (2001), the researchers interpret data from various brand community websites and face-to-face interviews. As there is room for interpretation in qualitative data, the reliability decreases. On the other hand, using quantitative data increases the reliability as the data is less prone to biases. Besides that, there is less room for interpretation.

3.6 Sampling method

The sampling method used in the different articles is merely dependent on the research strategy used. None of the articles, except for the article by Lin (2007), uses a probability sampling method. The use of a probability sampling method seems to be technically impossible, given the studied topics. When research uses sever-log data, they study the whole population (census) in most cases. Otherwise, in the case of a survey research design, the researchers use a non-probability voluntary convenience sampling method.

As stated above, when researchers use server-log data, they use a census sampling method and therefore, no observations are missing. Only the study by McCully et al. (2011) uses server log data without including all members of the community in their sample. They tried to create a control group by comparing members who attended an offline event to similar members who did not. Most of the papers that use a survey design have many missing observations. These incomplete samples are a logical consequence of applying a voluntary sampling method in combination with an online survey. The articles do not mention whether these missing values concern Missing at Random or Missing Not at Random. Therefore, we cannot make any assumptions about the consequences of missing observations.

3.7 Literature review

Real advancements in the research on the concept of brand communities have only been made in the last few years. Consequently, there are not many empirical papers with the same dependent and independent variable. As such, all the papers reviewed and summarised link to the hypothesis formulated previously in this paper. However, it is not possible to formulate a conclusive answer to the research question using a metanalysis. Instead, we will use a qualitative approach in the critical synthesis.

Concerning the comprehensiveness of the literature review, no relevant existing studies are missing that test the same hypotheses. We examined all the evidence that is directly relevant to our hypothesis. However, we could have extended the list of studies that contain information which has an indirect relevance to our research. Limited research on brand communities exists, so we mainly found papers focused on virtual communities in general. These papers are relatively old as well. Other studies not included in this research are even more outdated. Due to the pace of technological advancements, they are not relevant now.

# Chapter 4: Critical Synthesis

The central hypothesis of this paper is: on average, the individual member participation in offline gatherings has a positive effect on individual member participation in online brand communities which is intensified when the product or service is considered as hedonic by the community. We define online participation in the community as producing content for the community (interactive, contributing usage behaviour). We consider a good or service to be hedonic when it relates to a feeling of pleasure, more than with a feeling of necessity (Dhar & Wertenbroch, 2000).

Practitioners, like marketers and brand managers, want to increase participation in online brand communities as its (active) members are vital for the community to be sustainable. When members stop contributing to the community, it will cease to exist. Our research question addresses a possible approach for managers to reinforce the participation of members.

For managers, it is vital to know the size of the effect formulated in the hypothesis because they need to know if investing time and resources in offline events is worthwhile if they want to increase online participation. Therefore, it is important to identify a quantitative effect size.

## 4.1 Studies that directly test the hypothesis (Offline attendance 🡪 Online participation)

Due to the novelty of the research field, only three of the seven studies in our literature review contain hypotheses that have similar independent and dependent variables to the hypothesis of interest in our research (McCully et al. (2011), Koh et al. (2007), Sessions (2010)) (see table 1). In general, we consider the quality of these papers to be high. There are some concerns regarding the measurement construct of the dependent variable in the article by Koh et al. (2007) since they only used survey data to capture the concept of participation as described in chapter 3.5. Still, this paper provides a broader understanding of the effects of offline events and online participation and is therefore considered relevant.

Table 1 – Characteristics studies

|  |  |  |  |
| --- | --- | --- | --- |
| **Name study** | **Effect size** | **Precision (CI 95%)** | **Study Characteristics** |
| McCully, Lampe, Sarkar, Velasquez and Sreevinasan, 2011 | -2.79 / -4.328 | N/A[[1]](#footnote-2) | Server data |
| Koh, Kim, Butler and Bock, 2007 | 0.387 | N/A† | Survey data  No interpretation of the effect size given |
| Sessions, 2010 | 0.01\* | [-2.02 ; 2.04] | Server data  Effect not significant\* |

It is important to note that the theoretical domains from the articles that contain hypotheses like the one that we study are different from our theoretical domain. All studies focus on virtual communities in general. Therefore, the results are not explicitly bound to brand communities. It is hard to make an adequate comparison in effect sizes as research designs and effect size measurement instruments differ between the articles. What is interesting to note, however, is that all three articles show a different sign.

Koh et al. (2007) found a significant positive correlation between participation in offline events and online participation. On the other hand, McCully et al. (2011) found a significant negative correlation, even though the effect sizes differ in magnitude over the different trials. In the third article, Sessions (2010) did not find any significant relationship. This article is the only one which provides enough information to calculate a confidence interval for the effect size. The confidence interval contains strong negative and positive values[-2.02083 ; 2.04083]. This overlap with zero decreases the usefulness for managers, as the results do not imply a specific direction of the effect.

These inconclusive results do not imply that only one of the studies is right (Course Book - Research Training & Bachelor Thesis Course, n.d.). All studies have been analysed and are of high quality. Instead, the difference in sign implies that the theoretical domain is assumed to be heterogeneous. McCully et al. (2011) are very conservative in extending their findings beyond the population. In the final section of the article, the researchers raise one question about the extension of results to communities like Wikipedia. However, due to the high context dependency and the unique nature of the researched population, the authors do not make any further implications. Therefore, they do not compare results to other papers and use citations only to provide possible explanations for the observed effects. The limited scope lowers the practical relevance of the effects significantly.

Sessions (2010) and Koh et al. (2007) are less conservative and generalise their findings to virtual communities in general. However, they also acknowledge the early stage in which their research takes place in this field. Similarly, they do not compare their results to those of other studies. Instead, they use other studies to provide possible explanations for the findings. The described heterogeneity of the theoretical domain, combined with the large confidence interval in the case of the study of Sessions (2010), causes the practical relevance of the observed effects to be limited.

The difference in sign between McCully et al. (2011) and Koh et al. (2007) can be the result of several differences between the two research designs. First, McCully et al. (2011) researched a geographically dispersed population. The population of Koh et al. (2007) is bound to a country (Korea). Geographical proximity could influence the effect of offline events on online participation. Nevertheless, this has not been a topic of research papers published so far and could, therefore, be a subject of later research. A second possible explanation for the difference in sign follows indirectly from the discussion of the paper of McCully et al. (2011). The study of Koh et al. (2007) uses a survey which asks participants to rate their participation before and after an offline event, whereas McCully et al. use server log data. As was mentioned in the critical evaluation, members' perceived participation and their actual participation show differences. In the study of McCully et al. (2011), participants tend to think that they became more active after attending an offline event, while their server log data showed an opposite trend. If the same were the case for the study by Koh et al. (2007), this would explain the difference in the observed effect.

## 4.2 Studies that test other hypotheses

Since the number of studies examining the direct relationship between the attendance of offline events and online participation is limited, the critical evaluation will also evaluate four studies that indirectly relate to the hypothesis. Including these papers increases the understanding of members’ participation.

The study by Muniz and O'Guinn (2001) does not include an effect size. However, it is a relevant paper as it establishes the concept of brand communities and tests its existence in the first place. The article by Pöyry et al. (2013) provides more insights into the moderating variable that we included in the hypothesis. It also provides support for the expectation that hedonic motivations are positively related to online participation. The following two studies by Lin (2007) and Chen and Cage (2013) indirectly relate to the hypothesis since they introduce an intervening variable and different theoretical notions like social bonding and bridging, respectively.

The study by Lin (2007) does not make a direct claim between offline activities and participation in an online community. It instead introduces the intervening variable ‘sense of belonging’ as depicted in the figure below (see figure 3). The relationship between the independent and dependent variables are both positive. So, in case the intervening variable, sense of belongingness of a member in a community, is increased after attending an offline event, the online involvement would increase as well. The relationship between attending an offline event and online participation would be similar to the results in the study by Koh et al. (2007), which were also positive indicating that organising an offline event would have a positive effect on online participation.

Figure 3 - Hypothesis by Lin (2007)

Offline features: offline activities

Sense of belonging

Behaviour intention

H1

H8

The last paper by Chen and Cage (2013) is relevant for the hypothesis as it looks at how relationships between members of a community emerge and what the effect of organising meetups is on this relationship. This paper suggests that members who attend offline gatherings interact less frequently with members of the community with whom they have more loose connection than with members with whom they have close connections, compared to non-attendees. These results might imply that the effect of organising an offline event might have a considerable different effect on the participation of attendees and

non-attendees. This again highlights the importance of the difference between researching participation for the community as a whole compared to on an individual member level.

These papers all have a different theoretical domain as the authors are all cautious and do not generalise the results outside their population. Furthermore, these studies are unique and specific that there have not been researches with the same theoretical domain and different populations. Therefore, it is not possible to infer if different populations would result in similar findings.

|  |  |  |
| --- | --- | --- |
| **Name study** | **Studied Hypothesis** | **Effect size** |
| Muniz & O'Guinn, 2001 | Brand communities exist | N/A[[2]](#footnote-3) |
| Pöyry et al., 2013 | H1: Hedonic motivations are positively related to participation behaviour.  H3: Utilitarian motivations are negatively related to participation behaviour. | H1: 0.51  H3: Not supported |
| Lin, 2007 | H8: Offline activities positively affect the sense of belonging to the virtual community.  H1: Strong sense of belonging infers a strong intention to be more involved in the virtual community. | H1: 0.41  H2: 0.21 |
| Chen and Cage, 2013 | H1: Meetup attendees are more likely to lose bridging social capital after attending a meetup, compared to non-attendees.  H2: Meetup attendees are more likely to increase their bonding social capital after attending a meetup, compared to non-attendees | H1: -9.253 H2:12.615 |

Table 2 – Details studies

# Chapter 5: Methods

## 5.1 Research strategy

As discussed in the introduction chapter, the research question in this paper is: what is the effect of participation in offline events individual member participation in online brand communities and what is the effect of whether the product or service is hedonic on this relationship*?* In line with this question, our hypothesis is that, on average, the individual member participation in offline gatherings has a positive effect on individual member participation in online brand communities which is intensified by the product or service being considered hedonic by the community.

To collect empirical evidence for the claim formulated in the hypothesis, we chose a research strategy with the highest validity and reliability given the constraints regarding feasibility, time and resources. We conducted an experimental study supported by an online survey. This type of research strategy typically makes direct links between manipulations and effects. Therefore, they have a high internal validity if other potential variables that could cause differences in the dependent variable are ruled out (Course Book - Research Training & Bachelor Thesis Course, n.d.). The hypothesis tested does entail a causal claim. To increase the internal validity of the experimental study, we chose a 2 x 2 between-subject design. By using this strategy, we studied the effect of attending an offline event (independent variable) on online participation (dependent variable). As described by Żyminkowska (2018), the type of goods that a community is centred around moderates this relationship (utilitarian or hedonic). The independent variable is dichotomous, either yes or no, and so is the second condition: the brand either sells a utilitarian or hedonic good. As a result, we created the conditions and research paradigm displayed in table 3.

Table 3 - Paradigm research strategy

|  |  |  |
| --- | --- | --- |
|  | Utilitarian Good | Hedonic Good |
| Participation in an offline event | Member participated in an offline event with a brand that sells a utilitarian good | Member participated in an offline event with a brand that sells a hedonic good |
| No participation in an offline event | Member did not participate in an offline event with a brand that sells a utilitarian good | Member did not participate in an offline event with a brand that sells a hedonic good |

A research strategy concerning a lab-experiment, which has a higher internal validity than the chosen strategy, was not feasible for this research. For an experiment, the researchers need to recruit participants, isolate them in cubicles to manipulate conditions and let them participate in a survey while keeping all other variables constant. Moreover, the researcher might also need to pay the participants or provide them with another incentive. It was impossible to follow all the steps necessary to adequately conduct a lab-experiment within the given time frame and available resources.

## 5.2 Population

Due to time and resource constraints, it was not possible to research a real brand community. Instead, we took internet users exposed to online communities as a population. To be more specific, the population consisted of the users of the 'SampleSize: Where your opinions actually matter!' Reddit community and of the Amazon Mechanical Turk community. These people are not necessarily a member of a brand community and are therefore not directly part of the theoretical domain. However, as a scenario has been described (see measurement protocol in section 5.3), the respondents were subject to one of the created brand communities. As a result, they were part of the theoretical domain within the context of the experiment.

Of course, we could not survey all users of the communities mentioned above. Therefore, we took a sample instead. Through voluntary convenience sampling, members of the Reddit Sample Size and Amazon Mechanical Turk community have taken part in our research. As all members of the communities are part of the population, we did not encounter any problems in gathering data from this population.

## 5.3 Measurement protocol

In this section, we give precise definitions of the variables used in the hypothesis. Firstly, we define the independent variable as individual member participation in offline gatherings. Sessions (2010) described such events as 'local, face-to-face gatherings of online community members.' Later in the article, she describes people meeting offline as people who 'meet in person'. McCully et al. (2011) used similar terminology when describing offline meetings as 'face-to-face meetings.' From these definitions, we take the definition of participation to an offline event in this study as meeting face-to-face. In the survey, we used this definition by describing a situation where people attend an offline car-gathering organised by the brand from which they have bought a car. At this event, they can meet and interact with other car-owners driving the same brand.

The moderating variable in the hypothesis consists of two concepts: hedonic and utilitarian goods*.* Dhar and Wertenbroch (2000) describe the former as goods that 'provide more experiential consumption, fun, pleasure and excitement (designer clothes, sports cars, luxury watches, etcetera)'. On the other hand, utilitarian goods are described by them as being 'primarily instrumental and functional (microwaves, minivans, personal computers, etcetera)'. Okada (2005) builds on these descriptions by stating that hedonism and utilitarianism are not necessarily two ends of a one-dimensional scale. Different products can be high or low in both hedonic and utilitarian attributes. Okada (2005) characterises hedonic (utilitarian) alternatives as being primarily or relatively more hedonic (utilitarian). For this paper, we decided to take on similar definitions. Hedonic goods are supposed to be goods primarily providing experiential consumption and pleasure, whereas utilitarian goods are goods primarily providing instrumental and functional value.

Finally, we defined the dependent variable as individual member participation in online brand communities. From all concepts discussed before, this is the most widely discussed concept in academic literature. McCully et al. (2011) define online participation as 'contribution of content to the online community'. Pöyry et al. (2013) adopt a similar view when stating that online participation is 'producing content for the community (interactive, contributing usage behaviour)'. Ardichvili et al. (2003) take a broader view on participation and describe participation as both the willingness to share knowledge and the willingness to use a platform as a source of knowledge as active participation. The same distinction is made by Koh et al. (2004), who distinguish active participation (posting) and passive participation (viewing). For this research, it is not feasible to focus on both sides of the equation. Therefore, we will define individual member participation in online brand communities in line with earlier research as a contribution of content to the online community. We measured this construct in the experiment, which is administered with the support of an online survey (see appendix 2). In the survey, the construct of participation is measured by asking participants to rank their attitude to certain statements which are used in earlier research by Pöyry et al. (2013).

By using Pöyry et al.'s (2013) way of measuring the construct of participation, as well as using their definition of participation, we made sure to measure the right concept. Still, it was necessary to evaluate the measurement model and adjust the items to fit the context. To evaluate the convergent validity of the items, we evaluated the Cronbach's Alpha (a value between 0 and 1) computed by Pöyry et al. (2013). If the value is at least 0.7 for each item, it meets the minimum threshold. Once the value is lower than 0.7, we should discard the items should from the questionnaire (Bhattacharjee, 2019).

Pöyry et al. (2013) extensively discuss the validity of the constructs. They used Amos 19 software to calculate the loadings, which were equal to 0.911, 0.956, 0.920 and 0.796, respectively. The researchers used a threshold of 0.6, so they concluded that the items were measuring the same construct, participation. Despite our more conservative threshold of 0.7, we still conclude that the items are valid since they meet the minimum threshold. Furthermore, the composite reliability (CR) and average variance extracted (AVE), which measure the internal consistency, are 0.868 and 0.647, respectively. They are also higher than the suggested thresholds for these measures of 0.7 and 0.5. These thresholds are widely accepted in academics. Lastly, Casaló (2010) already validated the construct. To conclude, based on the validation by Casaló (2010) and Pöyry et al. (2013) and a critical review on their evaluation of the conceptualisation of participation, the suggested items are considered valid and are in the questionnaire.

Our survey started with a scenario in which the respondent buys a car. The case description is concise to prevent respondents from losing focus. At the same time, it provides enough information to make sure respondents understand the situation and can imagine the scenario. The main action in all four scenarios is buying a car. We assigned the participants of the survey randomly to the two levels of the condition (hedonic/utilitarian) and treatment (offline/online). We told the participants that they would either buy a sports car (hedonic) or a regular car (utilitarian) and they would either go to an offline gathering or not. We chose a car as a product because it has clear distinct utilitarian (e.g. commuting) and hedonic (e.g. sports car) features. By using the same product category in all conditions, we kept other factors constant as much as possible. If one were to use different products, people might feel more attracted to one product than the other. Next to that, this product allowed us to keep other factors, next to the hedonic-utilitarian distinction, constant. The car is the same in every situation, except for the difference in hedonic or utilitarian attributes. Differences in brands, colour and other properties can influence the attractiveness of a product to a specific participant. Keeping these factors constant improves measurement reliability. To clarify the reason for buying a car, we printed the sentence stating whether it is for utilitarian or hedonic purposes in bold. Images of a car show and an online brand community were added to the survey to visualise the described scenario and increase the respondent’s ability to imagine the described situation. Next to that, we removed car brands from the image to prevent bias.

Two survey questions measured the construct participation, which was the dependent variable in the hypothesis. In line with the research by Pöyry et al. (2013), the source of our survey items, we based the answers on a 1-7 Likert scale ranging from 'completely disagree' to 'completely agree'.

After having received responses from all participants, we aggregated the scores for the two questions concerning participation per respondent by averaging them. We took the obtained scores as a measurement for the construct of participation, the dependent variable. Afterwards, we created a linear model in which we calculated beta-coefficients for all independent and control variables by using R-software. We compare these coefficients in the results section.

Next to the questions to test our hypothesis, the survey also included questions to check the attention of participants and to gather information on participants’ background and demographics. We added the attention-check questions to check the validity of the scenario; whether the respondent understands the car is a hedonic or utilitarian good and whether they read the scenario correctly. Furthermore, we used the background questions to see whether specific characteristics related to the scenario affected the respondent's behaviour regarding the researched effect. We asked participants whether they were part of a brand community in real life to see whether results would differ between participants who are community members beyond the limits of the experiment and participants who are not. Besides that, we asked them to what extent they considered themselves to be car enthusiasts to account for the effect of the specific product we chose in the experiment. Furthermore, we asked participants to rate their internet proficiency to see whether this has an impact on the relationship we are investigating. Finally, we included demographics questions to increase managerial relevance. It is relevant for managers to know whether the effect is different for different demographic groups.

Including these control variables in our linear model and running sub-group analyses has several benefits. Firstly, the attention-check questions make sure that participants were aware of the defining characteristics of their treatment group. We decided to remove participants who answered the question incorrectly. Next to that, by running sub-group analyses on the question on whether people are part of a brand community in real life we test whether the effect holds more or less for people who are part of a brand community in real life. The same holds for the questions on internet proficiency, enthusiasm about cars and demographics. By analysing the differences in results amongst the different groups, we make sure that the results can be used by managers to target the right group of people. If the effect holds for one group but does not for another, managers know what people to target within the offline event.



# Chapter 6: Results

## 6.1 General information

Following the research strategy described in chapter 5, we have obtained the results and will discuss them in this section. In total, we have collected 280 responses. We have not used 51 responses since these respondents did not answer the attention check question correctly. Additionally, we have taken out eight answers as there was at least one value missing (e.g. gender and age). These adjustments left 221 responses we could use in the data analysis. As the proportion of missing data did not exceed 5%, we did not conduct a worst-case analysis.

We have quantified the scores for the participation questions (1-7) and calculated an average to create a score for participation per participant (ranging from 1-7). We have standardised the final scores for participation using the scale() function in R-software. All treatment and demographic variables were standardised and put together in a linear model to measure their effect on average participation which is the dependent variable in the model. The individual scores for each participant are accessible in the data matrix in appendix 3. Figure 4 presents a summary of the data. This boxplot indicates that the hedonic conditions result in a higher score for average participation than the utilitarian conditions. Furthermore, we can indicate that within the hedonic and utilitarian treatments, the group which 'attended' an offline event score higher on average participation than their counterparts who did not. By constructing the linear model, we tested these indications thoroughly.

Please note that sample sizes differ slightly between the groups due to the removal of responses in the survey. They range from 47 respondents for the online-hedonic condition to 66 respondents for the online-utilitarian condition. For the offline conditions, we had 49 participants in the hedonic treatment group, and 59 in the utilitarian treatment group. As the sample sizes for all conditions are exceeding the threshold value of N=30, we have not identified problems in running the linear regression. Socio-demographics also slightly vary between the treatment groups.

A close up of text on a white background

Description automatically generated

Figure 4 - Box plot average participation per condition

We summarised the number of participants per demographic age, gender, education, and employment group in table 4. The output from the linear model indicated that, for example, 31.5% of all male respondents were in the online-utilitarian condition, compared to only 17.1% in the online-hedonic condition. However, this is a direct result of a similar division in the number of overall responses per group, being 29.9% and 21.3% respectively. We have obtained similar results when looking at other demographic variables. We observed more significant deviations in the demographic categories with very few respondents, such as in the age group < 20 years (9 respondents in total). All these deviations are for accounted by including the demographic variables as control variables in the linear model.

Table 4 - Number of participants per demographic group

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Treatment | | | |
|  | Online-Utilitarian | Online-  Hedonic | Offline-Utilitarian | Offline-Hedonic |
| **Gender** |  | | | |
| Male | 35 | 19 | 31 | 26 |
| Female | 29 | 26 | 28 | 22 |
| Prefer not to say | 1 | 0 | 0 | 1 |
|  | | | | |
| **Age** |  | | | |
| <20 | 5 | 1 | 0 | 3 |
| 20-30 | 29 | 17 | 26 | 16 |
| 30-40 | 16 | 12 | 18 | 15 |
| 40-50 | 8 | 7 | 10 | 6 |
| 50-60 | 2 | 5 | 1 | 8 |
| 60-70 | 4 | 3 | 4 | 1 |
| 70-80 | 1 | 0 | 0 | 0 |
|  | | | | |
| **Education** |  | | | |
| High School | 16 | 12 | 14 | 12 |
| Bachelor | 30 | 20 | 35 | 26 |
| Master | 14 | 11 | 9 | 11 |
| Doctorate | 1 | 1 | 1 | 0 |
| Other | 4 | 1 | 0 | 0 |
|  | | | | |
| **Employment** |  | | | |
| Part-time | 7 | 8 | 5 | 4 |
| Full-time | 22 | 21 | 28 | 21 |
| Self-Employed | 10 | 6 | 3 | 8 |
| Student | 19 | 5 | 11 | 11 |
| Retired | 3 | 1 | 4 | 1 |
| Unable to Work | 1 | 1 | 2 | 0 |
| Unemployed – Looking for work | 2 | 0 | 5 | 4 |
| Unemployed – Not looking for work | 1 | 3 | 1 | 0 |

## 6.2 Treatment effects

*Offline*

As can be seen in appendix 4, we found a positive effect size for the effect of offline events on online participation. The standardised beta-coefficient of 0.13220 indicates that participants in the offline treatment have a, on average, 0.13220 \* STDaverage participation higher score for the construct participation than people in the online treatment. However, the p-value (0.0814) is higher than the threshold level of 0.05, which indicates that the effect size is not significant. However, we consider the effect to be marginally significant (p < 0.10). A 95% confidence interval returns an effect size of [-0.01645 ; 0.28085]. This confidence interval does include the value zero and therefore, does not confirm the positive association. However, as is also depicted in figure 5, there is a strong tendency towards a positive association. The low significance of the results may be dependent on the small sample size.

*Hedonic*

Although not directly relevant for our hypothesis, we reported a positive effect size for the hedonic condition on average participation as well. The 95% confidence interval

Figure 5 - Output R effect size offline interactions

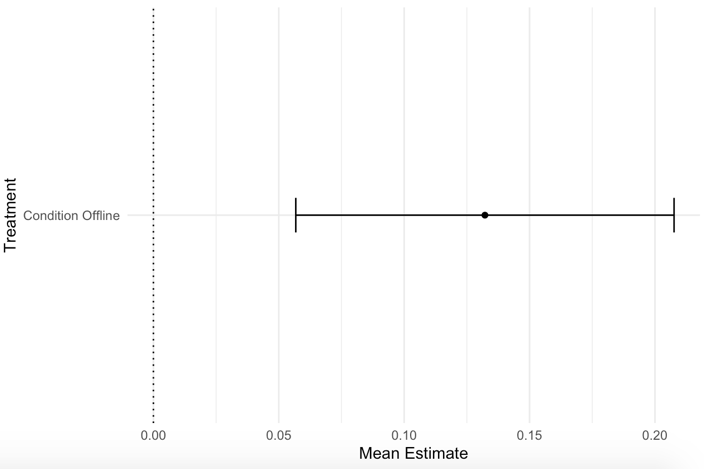
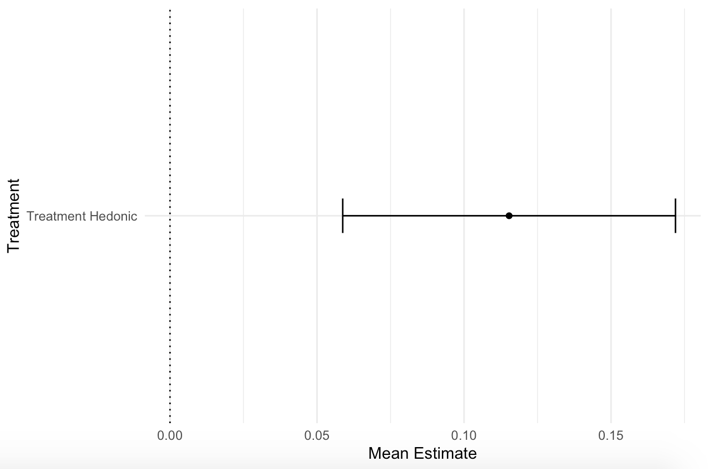
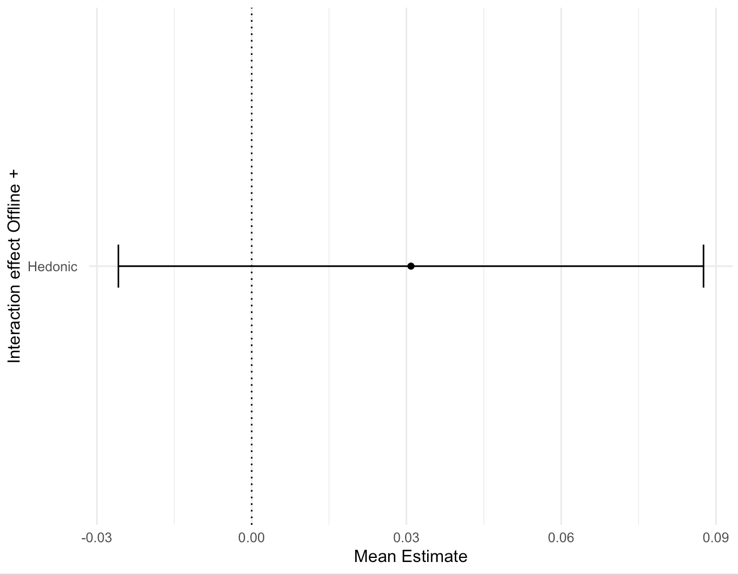


Figure 6 - Output R effect size hedonic products



calculation returns a value of [0.00382 ; 0.22684] and does therefore not overlap with zero (see also figure 6). This indicates a positive association between the hedonic condition and online participation.

Figure 7 - Output R interaction effect offline - hedonic



.

## 6.3 Moderating effect

The effect sizes reported above are valid if we keep the other condition on the baseline level (online – utilitarian). The above conditions (offline - hedonic) were part of an interaction term in the linear model to assess their interaction effect. As can be seen in figure 7, the interaction term offline\*hedonic returns a positive effect size of 0.03088. The effect of the offline treatment on average participation is therefore on average 0.03088 \* STDaverage.participation higher under the hedonic condition than it is under the utilitarian condition. However, one should note that this effect size does not seem to differ significantly from zero, given the high p-value (0.586). This insignificance is confirmed by the 95% confidence interval, which is calculated as [-0.08090 ; 0.14264] and therefore overlaps with zero to a great extent (see figure 7).

## 6.4 Control variables

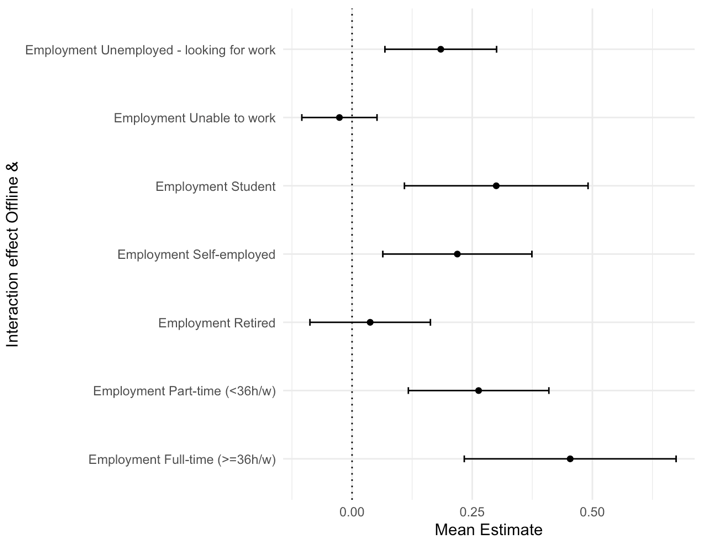
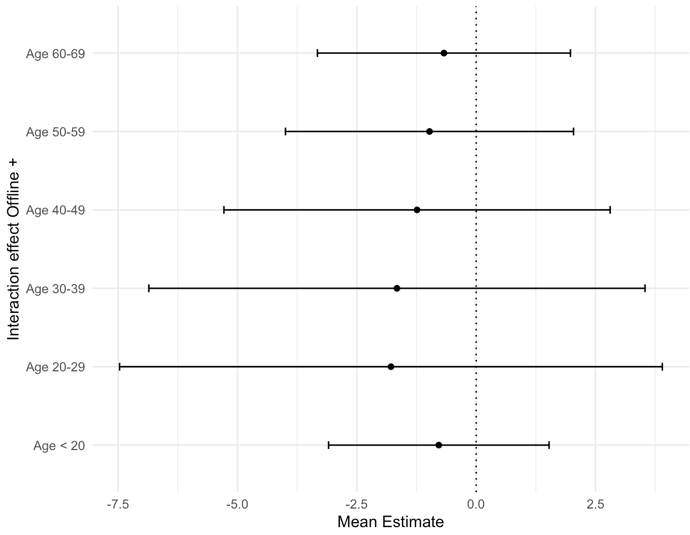
Various control variables are part of the linear model to assess whether the effect of offline interactions on online participation differs for the different levels of these control variables. The first of these variables is about demographics. Next to that, some of the variables see on characteristics specific to the described case situation. The results in the next paragraphs do not indicate that the different levels of the control variables showed a certain level of participation, as this was not the focus of this research. Instead, they indicate the effect of the different levels of those control variables on the effect of offline events on participation.

*Age*

The first of these variables is the participants' age, which we have measured in 10 categories (see appendix 2), of which three age groups did not include any respondents. As can be seen from figure 8, the effect of offline events on participation does not differ significantly amongst the different age groups. Taking the oldest age group with respondents (7) as a baseline level, the interaction coefficients of the different groups are close to zero, and none of them turned out to be significantly different from zero (all p > 0.7). Figure 8 depicts that the confidence intervals of these coefficients overlap with zero to a great extent too.

Figure 9 - Output R interaction effects offline – employment status

Figure 8 - Output R interaction effects offline - age



*Employment Status*

We obtained a different result for the control variable regarding employment status. When taking the category *unemployed – not looking for work* as a baseline, some interesting results are obtained (see figure 9). Two of the categories (*unable to work* and *retired*) do not show interaction effects that differ significantly from the baseline level. However, the other groups show positive interaction effects of which the confidence interval does not overlap with zero. This result implies that it can be assumed that the positive association between offline events and online participation is more substantial for these groups. Interestingly, these groups contain all people who are working or actively preparing to start working soon. A possible explanation for this result could be that people who are part of the active workforce have less spare time compared to people who are not. Therefore, they might be more eager to participate in less time-consuming and restrictive online means of communication after visiting an offline event. However, the sample sizes for the groups *retired* (N = 8) and *unable to work* (N = 4) are too small to draw meaningful conclusions from these results.

*Education*

For the control variable, which took the level of education into account, no interaction effects which differ significantly from the baseline level (being *high-school*) have been identified (see figure 10).

*Gender*

Figure 11 - Output R interaction effects offline - gender

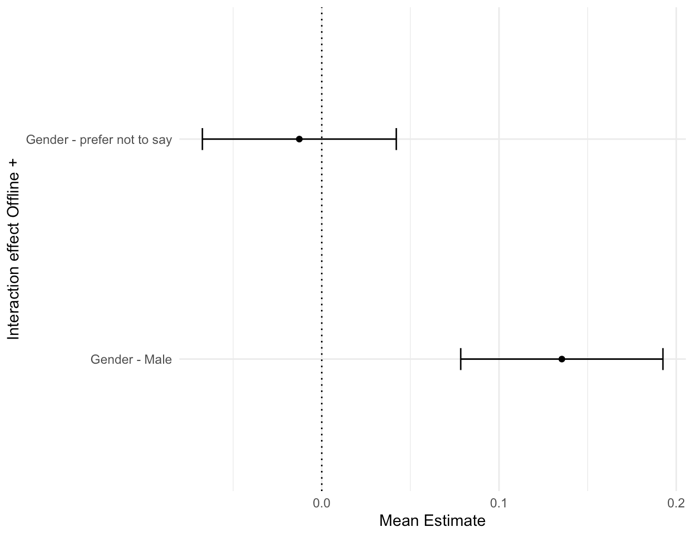
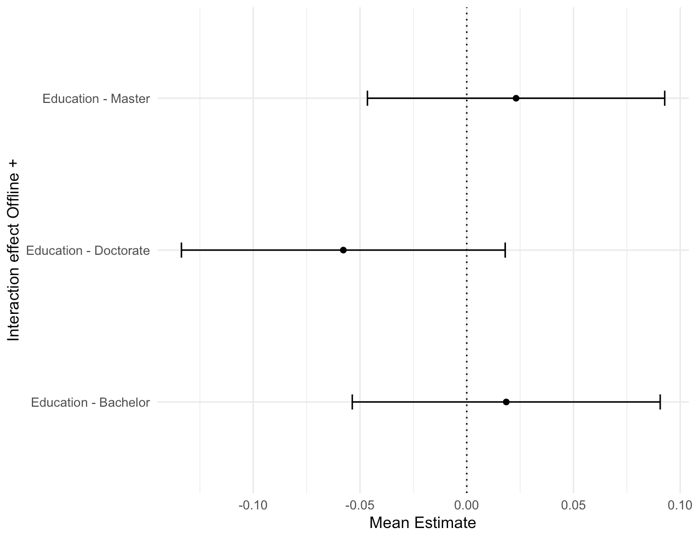


Figure 10 - Output R interaction effects offline – education level



In contrast to education, the control variable considering participants’ gender does show a significant interaction effect (see figure 11). Taking *female* as a baseline level for this condition, the level *male* gives an interaction effect that differs from the baseline level (interaction β = 0.145). As the confidence interval does not include zero, we concluded that the positive association between offline interactions and online participation is higher for *men* than it is for the baseline level *women*. This difference could exist because women visit an offline event more to serve their social needs, whereas the reason for men is to find additional information on their cars. The presented online platform in the survey is more directed at information sharing than it is at socialising, as discussion topics are, amongst others, on mechanical car parts and delivery schedules (see appendix 2). This characteristic might be an explanation for the difference in effect on their online participation afterwards.

*Case-specific control variables*

The final three control variables are specific to the case described in the survey. We included these variables to account for the effect of differences in enthusiasm about the product group and internet proficiency. Furthermore, we used a question on whether participants are part of a brand community in real life to see whether the effect is different between participants who are community members outside the experiment and participants who are not.

First, we asked participants to rate to what extent (1-5) they considered themselves to be a *car enthusiast*. Next to that, we asked them to what extent they considered themselves to be *proficient in working with computers* (1-5). Both variables do not show interaction effects that differ significantly from zero (see figures 12 and 13). These results indicate that the positive association between offline events and online participation does not differ between the different levels of these variables.

The third and final of the case-specific variables asked participants to rate the extent to which they considered themselves to be *a member of a brand community in the real world* (1-5). As depicted in figure 14, we obtained an interesting result. The output of the model returns a negative interaction effect for this control variable (interaction β = - 0.122) with a confidence interval that does not overlap with zero. This indicates that the positive association between offline interaction and online participation is less intense for people who consider themselves to be a brand community member in the real world. This could mean that the observed effect is less strong in a real brand community setting, but we think another explanation for this observed effect is possible too. A very high positive coefficient (0.369, p < 0.001) is reported for the overall effect on online participation for people who consider themselves to be part of a brand community in the real world compared to people who do not. The fact that these people already score high on participation in the group in which no offline event took place. This finding could make the effect of organising such an offline event relatively less effective compared to people who do not consider themselves to be part of a brand community in real life. Given the high managerial relevance of this variable, additional research on real brand communities should test this effect and define its causes.

Figure 12 - Output R interaction effects offline – car enthusiast

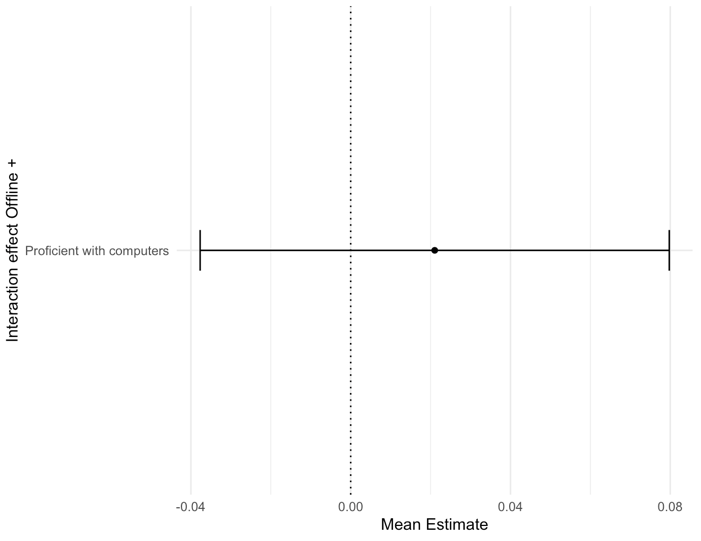
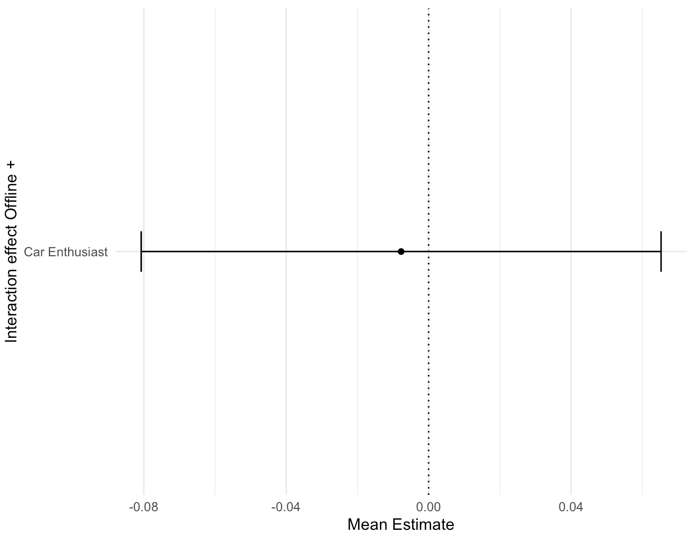
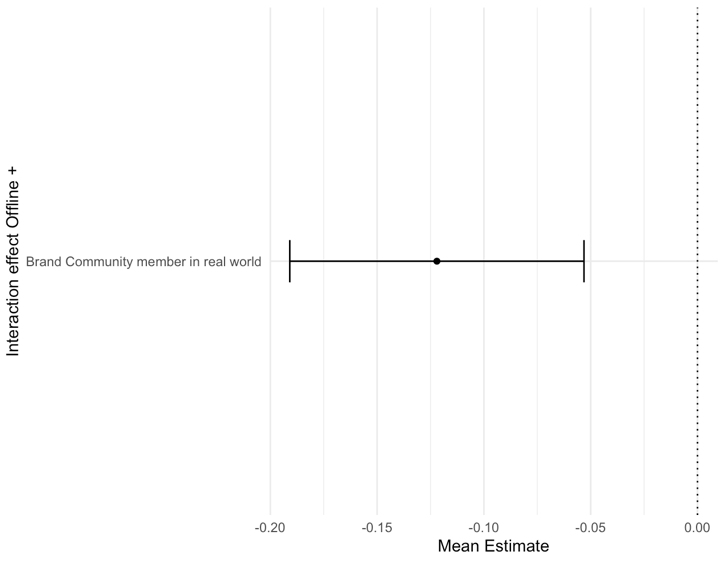


Figure 13 - Output R interaction effects offline – proficient with computers

Figure 14 - Output R interaction effects offline – community member real world



## 6.4 Managerial implications

In this section, we will discuss managerial implications and limitations of the results. The central part of the hypothesis is about the effect of offline events on online participation in brand communities. As discussed in the previous section, the evidence on this effect is not conclusive. The results are tilted towards a positive relationship as expected in the hypothesis, but the effect was only marginally significant (p < 0.10). As discussed in the critical evaluation, previous research did not come to a consensus on the direction of this effect either. It is therefore hard to conclude any managerial advice from the obtained data on this relationship. However, the relationship between the hedonic product category and participation was significant. Therefore, managers can assume that building an online brand community around hedonic products has a higher chance of becoming a success. This result does confirm prior research. We have not found a significant interaction effect on participation between attending offline events and the hedonic product category. This finding indicates that the product group to which the product belongs does not influence the effect of organising offline events on online participation. This effect has not been tested directly in prior research. However, the hypothesis we deducted from several earlier findings which indirectly addressed the moderating effect of hedonic and utilitarian products could not be confirmed.

We included several control variables in the linear model, of which one gave an interesting insight. Employment status seems to interact with the effect of offline events on participation. For people belonging to the active (future) workforce, so people who are not retired or unable to work, the effect of offline events on participation was significantly stronger compared to people belonging to the groups *unable to work* or *retired*. This difference can be interesting to managers when targeting people to attend offline events. However, when using these results, one should be careful given the small sample sizes for some of the groups.

We want to make some general comments on the managerial implications resulting from the findings presented above. Due to limitations in time and resources, it was not possible to research a real brand community. We tried to minimise the bias on our results while designing the survey by, amongst others, removing brand names and keeping factors such as colour between the groups as similar as possible. However, given that the interaction effect on participation between offline events and people who indicated that they were a member of a brand community in the real world is significantly negative, one should question whether these results are generalisable to brand communities in the real world. Additional research on real brand communities and their fundamental differences is needed to generate useful and reliable managerial advice.

## 6.5 Lessons learned

In this paragraph, we will describe how our thesis project differed from previous research and the lessons learned from writing it. Moreover, some challenges that we encountered are discussed, as well as how we tackled them.

When designing our study, we quickly noticed that researchers should think about many minor details that might impact results. For example, when designing the questionnaire, we wanted to include pictures to make the experiment more vivid for the respondents. Nevertheless, the choice of pictures might impact the behaviour of respondents as they include logos and words. So, we learned to evaluate the format of the survey to reduce the response bias to the minimum. Additionally, working with Qualtrics and its prolific features was new to us. Previously, we worked with Survey Monkey or Google Forms. The interface of Qualtrics was somewhat more challenging. However, it offered multiple options that we used that would not have been possible via the other previously mentioned survey distributors.

After having designed the questionnaire, it was time to collect data. Our initial plan was to collect data on campus by asking students randomly to fill out our survey. Nevertheless, due to the COVID-19 pandemic, we had to change plans and collect data online. We started with sharing our survey on Reddit. We posted our survey daily for a couple of days but quickly realised that due to the vast number of surveys posted daily, we hardly received any respondents and had to think about an alternative. After trying the SurveySwapplatform but receiving a similar number of respondents, we decided to publish our survey on Amazon Mechanical Turk and pay respondents a small fee for their time. After having posted the survey on this platform, we reached our targeted number of respondents within a day.

Nevertheless, we were not convinced about the quality of our data. Many respondents did not take more than 90 seconds to fill out our questionnaire, and we thought this would be impossible. We decided not to use and pay for responses from respondents that did not meet our threshold of 90 seconds. We kindly communicated this with our respondents as we believed it would be unreliable. This decision appeared to be a big mistake and one of the most important lessons of our project. We received numerous emails saying that it was possible to finish the survey within the 90-second timeframe and that people wanted their financial compensation. After having done some research, it is plausible that the respondent on this platform are indeed able to finish the survey within 90 seconds as they might be trained in filling out many surveys in several minutes. Consequently, we decided to pay all respondents and use their data for our research.

After that, it was time for the data analysis. Our supervisor encouraged us to do some coding and provided some guidelines on Canvas. During the Applied Business Methods and Business Information Management courses, we have been introduced to coding in R for the first time. Some of our group members felt more proficient working in R than others. The codes used in the examples on Canvas were entirely new for us. Therefore, we learned some coding and interpreting data in R. Interpreting data was also challenging at times since the exact ways to solve problems always deviated a little from the standard answers provided online. Luckily, we tackled these issues by contacting our supervisor for support.

At the beginning of the research project, we decided to include a moderating variable in our hypothesis. In hindsight, this complicated the whole research project in every phase. Nonetheless, this factor challenged us to reflect always about research practice and made us understand the research topic more thoroughly.

To comply with the open science framework (OSF), we made our data accessible in a public repository on Github. We did so to promote transparency and allow researchers to replicate and validate our findings.

# Chapter 7: Discussion

## 7.1 Conclusions

Brand communities are increasingly important for brands as these specialised, non-geographically bound groups of people offer benefits to the marketing department as well as customers. It is a challenge for companies to keep brand community members participating on their online platforms. Often only a few members participate actively, and most other members only consume information. It would be desirable for firms that more members contribute to the brand community because if the few active members stop participating, the online brand community will cease to exist.

The main research question that we address in this paper is whether offline events enhance online participation in brand communities. Furthermore, it examines whether the type of product (hedonic or utilitarian) influences this relationship. If managers use brand communities successfully, these can be a competitive advantage. However, in existing literature there is little good advice on how to run these communities effectively.

We found three papers that tested a hypothesis which was similar to ours. McCully et al. (2011), Koh et al. (2007) and Sessions (2010) all found different results when testing the relationship between attending an offline event and online participation. Koh et al. (2007) found a significant negative effect between offline gatherings and online participation. This contradicts our marginally significant positive result. Like our research, Koh et al. (2007) came to this conclusion based on survey data. As described before, there seems to be a disconnect between survey data and actual participation, as was later described by McCully et al.. This is a limitation to the research by Koh et al. (2007). Next to that, contradicting with our research, their research was based on a geographically bound community (Korea), whereas most brand communities nowadays are characterized by the absence of these boundaries. This makes their results less applicable to brand communities with the characteristics as we defined them. In 2010, Sessions did additional research on the relationship between offline events and online participation and came to a different conclusion. Even though posting activity increased, the commenting to others’ posts decreased which led to an insignificant effect on participation in general. Finally, a paper by McCully et al. (2011) described a significant positive effect between offline events and online participation. In contrast to the paper by Koh et al. (2007), the papers by Sessions (2010) and McCully et al. (2011) did use server-log data.

Our thesis project and the three papers that researched this topic all come to a different result. Furthermore, none of the papers did focus specifically on brand communities, but rather on virtual communities in general, of which some have very different characteristics than most brand communities (such as geographical boundaries).

We conducted a critical evaluation of studies and a 2 x 2 between-subject experimental study, the results are inconclusive. Our experiment shows a marginally positive association with a confidence interval overlapping with zero. Therefore, it does not enable to draw conclusions on the relationship between attending an offline event and online participation. The answer to whether to accept or reject our hypothesis remains inconclusive.

Nevertheless, the moderating variable in our hypothesis provides an interesting insight. The data analysis shows that community members are more eager to participate in an online brand community if the product that is offered by the brand is considered hedonic rather than utilitarian. Nonetheless, we did not find support for the moderating effect. The type of good, either hedonic or utilitarian, did not significantly affect the relationship between attendance of an offline event and online participation.

Finally, examining the control variables, members’ employment status and gender might provide new understandings for marketers and managers. The active (future) workforce shows a positive association between attending an offline event and online participation, while participants who are retired or unable to work show a negative association. A possible explanation for this behaviour could be the limited time resources the active workforce has. Consequently, these groups will be more careful in choosing the offline events they attend. As a result, they are more engaged with the brand and participate more actively online. Moreover, males have a significantly higher positive association between attending offline events and online participation compared to women. More research is needed to investigate this observation further.

## 7.2 Recommendations

Given the conclusions, there are a few key takeaways for managers. Firstly, brand communities built around hedonic goods are more likely to be viable compared to communities surrounding utilitarian goods. Accordingly, managers that maintain or would like to set up an online brand community should think about the product attributes they highlight and whether these are considered hedonic or utilitarian by the (potential) community members. If managers give hedonic attributes more attention, online participation is more likely.

Additionally, if the objective of organising an offline event is to improve the level of online participation, then the active workforce plays a more vital part than people who do not work. Therefore, marketing activities to invite people to an offline event should target the active workforce.

In the introduction we mentioned the Walt Disney Company as a brand that organises offline events for its community members. We can use this company to explain the managerial relevance of our research too. If managers at Disney want to increase online participation, they might consider to increase the frequency of organizing offline events. The company offers merely hedonic goods and services. It is recommended to highlight the hedonic attributes more in the company’s communication with its brand community members. This might increase the effect of organizing an offline event on online participation.

## 7.3 Limitations

Although we tried to minimise the factors affecting the experimental results and biases, our research has some limitations. The main limitation of our own research is that the population and sample size were not necessarily members of a real brand community. The main drawback is that the results are not directly generalisable to the theoretical domain. According to our data, the association between attending an offline event and online participation is also less strong for respondents who consider themselves part of a brand community in the real world. Resulting from a lack of time and resources, we were also not able to experiment in a lab, where we would be able to keep more potential influencing factors the same.

Moreover, the survey design has another downside concerning validity. We asked the respondents questions regarding their intentions. Nevertheless, intentional questions might not predict behaviour. As mentioned before, McCully et al. (2011) explained that there might be a gap between survey data and behaviour data. Using a real brand community, registering the presence of members at an offline event and analysing server log data after the event would provide more valid results. Additionally, although we reached the minimal threshold of 30 respondents per condition/treatment, our sample size was not large enough to make significantly reliable inferences about the control variables. Sometimes a clear association between a control variable and the dependent variable was visible, yet not reliable due to the small sample.

We found a marginally significant positive effect on the relationship between organising offline and online participation. To further develop the understanding of this relationship, we have two recommendations for future research. One of these approaches links to an article we described in an earlier section. In this paper, Chen and Cage (2013) found that members who attended an offline gathering are more likely to loosen their interaction with members who did not attend an event (bridging, weak ties) and are more likely to interact with members who attended an event (bonding, strong ties), compared to non-attendees. This might imply that organising offline events is more beneficial for attendees who are able to create more close connections during a gathering, than for non-attendees. Furthermore, it could explain a difference between the effect of offline interaction on online participation on an individual and on a community level. Future research could examine what the influence of the processes of bonding and bridging is on the relationship between organising offline events and online participation in brand communities.

Next to that, we did a longitudinal study rather than a time series study as we only asked participants after attending the car show about their intention to participate online. Therefore, we do not know how long the marginally positive effect on online participation after attending an offline event will last. Future research could focus on the duration on this effect to enable managers to make conclusions about the most effective time interval between offline events.

# Appendix 1: Matrix studies





# Appendix 2: Survey

Thank you for helping us by participating in this questionnaire. This survey is part of our Bachelor Thesis at Rotterdam School of Management, Erasmus University. The questionnaire should take just 5 minutes of your time.

Please read the questions carefully and answer as truthfully as possible. There are no right or wrong answers. Your responses are collected for educational, non-commercial purposes and will be treated as confidential. Participation is voluntary, so you can decide to interrupt the survey at any time.

If you have any questions or suggestions, you can send an email to 470850lv@student.eur.nl

Ditte Selders, Luuk van de Ven & Guus van den Akker  
Students BSc International Business Administration  
Erasmus University Rotterdam

[NEXT PAGE]

Before you answer the questions, imagine you are in the following situation:

**(Utilitarian/Offline)** You recently got a new job and need to commute to work. Unfortunately, it is not possible to go by bike or use public transport, so you decide to buy a car. You do not care about the design of the car or its characteristics as **you will onlyuse the car to commute from your home to work and back. You see it as a necessity and will not use it for pleasure**. Once you bought the car, you regularly participate in online discussions with other drivers who drive the same model on a forum hosted by the brand. At the same time, you retrieve inspiration from the brand’s social media.

After using the car satisfactorily for three months, you are invited by the car dealer to attend a car show where they present all new models from the brand. You decide to go and accept the invitation. At the venue, you meet other people who drive the same brand. Everyone shares experiences about the brand. At the end of the show, you head home and do not regret attending the event.

A group of people performing on stage in front of a building

Description automatically generated

Image car show

(**Utilitarian/Online)** You recently got a new job and need to commute to work. Unfortunately, it is not possible to go by bike or use public transport, so you decide to buy a car. You do not care about the design of the car or its characteristics as **you will onlyuse the car to commute from your home to work and back. You see it as a necessity and will not use it for pleasure**. Once you bought the car, you regularly participate in online discussions with other drivers who drive the same model on a forum hosted by the brand. At the same time, you retrieve inspiration from the brand’s social media.

**(Hedonic/Offline)** You recently got a new job and need to commute to work. You already have a car at home. Yet, your new salary allows you to buy another car **which you will use just for pleasure**. Not just a car, but a sports car! With great care, you choose a car that has a sleek design and many luxurious attributes, such as automatic parking and steering. Once you bought the car, you regularly participate in online discussions with other drivers who drive the same model on a forum hosted by the brand. At the same time, you retrieve inspiration from the brand’s social media.

After using the car satisfactorily for three months, you are invited by the car dealer to attend a car show where they present all new models from the brand. You decide to go and accept the invitation. At the venue, you meet other people who drive the same brand. Everyone shares experiences about the brand. At the end of the show, you head home and do not regret attending the event.

A group of people performing on stage in front of a building

Description automatically generated

Image car show

**(Hedonic/Online)** You recently got a new job and need to commute to work. You already have a car at home. Yet, your new salary allows you to buy another car **which you will use just for pleasure**. Not just a car, but a sports car! With great care, you choose a car that has a sleek design and many luxurious attributes, such as automatic parking and steering. Once you bought the car, you regularly participate in online discussions with other drivers who drive the same model on a forum hosted by the brand. At the same time, you retrieve inspiration from the brand’s social media.

Question for all groups:

What was the main reason for buying a car?

* For pleasure
* Because it is a necessity

[NEXT PAGE]

Imagine that you just drove home with your new car. You are considering whether you want to use the online community of the brand (see image) of which you bought a car to talk about your driving experience.

A screenshot of a cell phone

Description automatically generated

Image online brand community

*Question for offline conditions:* Please answer the following questions about your online presence regarding the brand AFTER having visited the show.

(all 1-7 scales (Completely disagree – Completely agree), all loadings are significant (p < 0.001)):

* I intend to participate actively in the community activities (for example by posting to the page or commenting other’s posts).
* I intend to post messages and responses in the community with great excitement and frequency.

*Questions for online conditions:* Please answer the following questions about your online presence after having read this scenario.

(all 1-7 scales (Completely disagree – Completely agree), all loadings are significant (p < 0.001)):

* I intend to participate actively in the community activities (for example by posting to the page or commenting other’s posts).
* I intend to post messages and responses in the community with great excitement and frequency.

Background questions:

Do you consider yourself…

(all 1-5 scales (Does not describe me – Describes me extremely well), all loadings are significant (p < 0.001))

* A car enthusiast?
* A brand community member in the real world?
* Proficient working with computers?

Demographics:

To what age category do you belong?

* < 20
* 20-29
* 30-39
* 40-49
* 50-59
* 60-69
* 70-79
* 80-89
* 90-99
* > 100

What is your gender?

* Male
* Female
* Prefer not to say

What is the highest degree or level of school you have completed?

* + High school degree or equivalent
  + Bachelor’s degree
  + Master’s degree
  + Doctorate
  + Other (please specify) [TEXT ENTRY]

Which of the following best describes your employment status?

* + Employed full-time (>36 hours a week)
  + Employed part-time (<36 hours a week)
  + Self-employed
  + Unemployed (currently looking for work)
  + Unemployed (not currently looking for work)
  + Student
  + Retired
  + Unable to work

Thank you for participating in this survey. If you still have any questions or remarks, please contact 470850lv@student.eur.nl. All scenarios and identities discussed in the surveys were fictional, non-commercial, and only created for the purpose of the survey.

# Appendix 3: Data matrix

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Group 1  No offline event - Utilitarian | | Group 2  Offline event – Utilitarian | | Group 3  No offline event - Hedonic | | Group 4  Offline event - Hedonic | |
| Cases | Average Participation | Cases | Average Participation | Cases | Average Participation | Cases | Average Participation |
| C1.1 | 1,5 | C2.1 | 1 | C3.1 | 3 | C4.1 | 3 |
| C1.2 | 2 | C2.2 | 4,5 | C3.2 | 1 | C4.2 | 4,5 |
| C1.3 | 4,5 | C2.3 | 1 | C3.3 | 2 | C4.3 | 2,5 |
| C1.4 | 2 | C2.4 | 4 | C3.4 | 2 | C4.4 | 3,5 |
| C1.5 | 4,5 | C2.5 | 3 | C3.5 | 4 | C4.5 | 3,5 |
| C1.6 | 1 | C2.6 | 4 | C3.6 | 6,5 | C4.6 | 1,5 |
| C1.7 | 7 | C2.7 | 1,5 | C3.7 | 5 | C4.7 | 6 |
| C1.8 | 2 | C2.8 | 4 | C3.8 | 5 | C4.8 | 5,5 |
| C1.9 | 3,5 | C2.9 | 7 | C3.9 | 5 | C4.9 | 4,5 |
| C1.10 | 3 | C2.10 | 6,5 | C3.10 | 4 | C4.10 | 6 |
| C1.11 | 2 | C2.11 | 6 | C3.11 | 5 | C4.11 | 6 |
| C1.12 | 5,5 | C2.12 | 2 | C3.12 | 5 | C4.12 | 6 |
| C1.13 | 5 | C2.13 | 5 | C3.13 | 5 | C4.13 | 6,5 |
| C1.14 | 2 | C2.14 | 6 | C3.14 | 6,5 | C4.14 | 5,5 |
| C1.15 | 4 | C2.15 | 5 | C3.15 | 2 | C4.15 | 5,5 |
| C1.16 | 1 | C2.16 | 6 | C3.16 | 1 | C4.16 | 5 |
| C1.17 | 6 | C2.17 | 5,5 | C3.17 | 5,5 | C4.17 | 5,5 |
| C1.18 | 1,5 | C2.18 | 4 | C3.18 | 7 | C4.18 | 3 |
| C1.19 | 4,5 | C2.19 | 5 | C3.19 | 6 | C4.19 | 5,5 |
| C1.20 | 6 | C2.20 | 2 | C3.20 | 5 | C4.20 | 5,5 |
| C1.21 | 1 | C2.21 | 5,5 | C3.21 | 3 | C4.21 | 7 |
| C1.22 | 2 | C2.22 | 2 | C3.22 | 2 | C4.22 | 5 |
| C1.23 | 3,5 | C2.23 | 5,5 | C3.23 | 3,5 | C4.23 | 6 |
| C1.24 | 3 | C2.24 | 5,5 | C3.24 | 6,5 | C4.24 | 3,5 |
| C1.25 | 6 | C2.25 | 6 | C3.25 | 5,5 | C4.25 | 6 |
| C1.26 | 6,5 | C2.26 | 1,5 | C3.26 | 5 | C4.26 | 4 |
| C1.27 | 2 | C2.27 | 3,5 | C3.27 | 4,5 | C4.27 | 6 |
| C1.28 | 1 | C2.28 | 6,5 | C3.28 | 6,5 | C4.28 | 6 |
| C1.29 | 1,5 | C2.29 | 4 | C3.29 | 6,5 | C4.29 | 4,5 |
| C1.30 | 1 | C2.30 | 1 | C3.30 | 5,5 | C4.30 | 7 |
| C1.31 | 2 | C2.31 | 3,5 | C3.31 | 6 | C4.31 | 6,5 |
| C1.32 | 5,5 | C2.32 | 6,5 | C3.32 | 4 | C4.32 | 6 |
| C1.33 | 4 | C2.33 | 5,5 | C3.33 | 4,5 | C4.33 | 6 |
| C1.34 | 7 | C2.34 | 1 | C3.34 | 2,5 | C4.34 | 4 |
| C1.35 | 3 | C2.35 | 2 | C3.35 | 7 | C4.35 | 6 |
| C1.36 | 2 | C2.36 | 5,5 | C3.36 | 5,5 | C4.36 | 4 |
| C1.37 | 5 | C2.37 | 5,5 | C3.37 | 4,5 | C4.37 | 5 |
| C1.38 | 2,5 | C2.38 | 7 | C3.38 | 5,5 | C4.38 | 6 |
| C1.39 | 5 | C2.39 | 4 | C3.39 | 4,5 | C4.39 | 3,5 |
| C1.40 | 6 | C2.40 | 3 | C3.40 | 4,5 | C4.40 | 6,5 |
| C1.41 | 5 | C2.41 | 6 | C3.41 | 5 | C4.41 | 5 |
| C1.42 | 2 | C2.42 | 3 | C3.42 | 5 | C4.42 | 7 |
| C1.43 | 1 | C2.43 | 1 | C3.43 | 3,5 | C4.43 | 4,5 |
| C1.44 | 1 | C2.44 | 6,5 | C3.44 | 5 | C4.44 | 2 |
| C1.45 | 6 | C2.45 | 5,5 | C3.45 | 5,5 | C4.45 | 2 |
| C1.46 | 4,5 | C2.46 | 2,5 | C3.46 | 6 | C4.46 | 2 |
| C1.47 | 2,5 | C2.47 | 6,5 | C3.47 | 1 | C4.47 | 3,5 |
| C1.48 | 1,5 | C2.48 | 5,5 |  |  | C4.48 | 6 |
| C1.49 | 2 | C2.49 | 3,5 |  |  | C4.49 | 2 |
| C1.50 | 5 | C2.50 | 6 |  |  |  |  |
| C1.51 | 5 | C2.51 | 6 |  |  |  |  |
| C1.52 | 2 | C2.52 | 1,5 |  |  |  |  |
| C1.53 | 2,5 | C2.53 | 5,5 |  |  |  |  |
| C1.54 | 6 | C2.54 | 5,5 |  |  |  |  |
| C1.55 | 4,5 | C2.55 | 1,5 |  |  |  |  |
| C1.56 | 2,5 | C2.56 | 6 |  |  |  |  |
| C1.57 | 5 | C2.57 | 1,5 |  |  |  |  |
| C1.58 | 1 | C2.58 | 1,5 |  |  |  |  |
| C1.59 | 5,5 | C2.59 | 2 |  |  |  |  |
| C1.60 | 3 |  |  |  |  |  |  |
| C1.61 | 3,5 |  |  |  |  |  |  |
| C1.62 | 2,5 |  |  |  |  |  |  |
| C1.63 | 2 |  |  |  |  |  |  |
| C1.64 | 1 |  |  |  |  |  |  |
| C1.65 | 3 |  |  |  |  |  |  |
| C1.66 | 4 |  |  |  |  |  |  |
| N = 66 | Mx1 = 3,356 | N = 59 | Mx2 = 4,144 | N = 47 | Mx3 = 4,543 | N = 49 | Mx4 = 4,837 |

|  |  |
| --- | --- |
|  |  |

| Treatment Variable Appendix 4: Output linear model R | Estimate | Std. Error | t-value | P(>t) |
| --- | --- | --- | --- | --- |
| scale(Hedonic) | 0,1153337 | 0,0565875 | 2,038 | 0,043067 |
| scale(Offline) | 0,1322026 | 0,07542 | 1,753 | 0,081403 |
| scale(Quantitative.car) | 0,2724463 | 0,0728679 | 3,739 | 0,000251 |
| scale(Quantitative.real.world) | 0,3692643 | 0,0687313 | 5,373 | 2,49E-07 |
| scale(Quantitative.computers) | -0,0330653 | 0,0585998 | -0,564 | 0,573315 |
| scale(Age1) | -0,7384593 | 2,2900401 | -0,322 | 0,747492 |
| scale(Age2) | -1,8709761 | 5,6430951 | -0,332 | 0,740632 |
| scale(Age3) | -1,5829739 | 5,163445 | -0,307 | 0,759539 |
| scale(Age4) | -1,2835208 | 4,0183753 | -0,319 | 0,749801 |
| scale(Age5) | -0,838218 | 3,0005422 | -0,279 | 0,780308 |
| scale(Age6) | -0,6563823 | 2,6308152 | -0,249 | 0,803274 |
| scale(Age7) | NA | NA | NA | NA |
| scale(GenderMale) | -0,0469981 | 0,0569434 | -0,825 | 0,410318 |
| scale(GenderPreferNotToSay) | -0,1417781 | 0,0545717 | -2,598 | 0,01019 |
| scale(EducationBachelor) | 0,2718743 | 0,1900252 | 1,431 | 0,154323 |
| scale(EducationDoctorate) | -0,1200549 | 0,0867597 | -1,384 | 0,168224 |
| scale(EducationMaster) | 0,2706103 | 0,1578761 | 1,714 | 0,088318 |
| scale(EducationHighSchool) | 0,2960638 | 0,1699108 | 1,742 | 0,083214 |
| scale(EmploymentPartTime) | 0,0135299 | 0,1451515 | 0,093 | 0,925843 |
| scale(EmploymentFullTime) | 0,1794639 | 0,2187316 | 0,82 | 0,413081 |
| scale(EmploymentRetired) | -0,0742584 | 0,1244926 | -0,596 | 0,551633 |
| scale(EmploymentSelfEmployed) | 0,0417941 | 0,1540087 | 0,271 | 0,786428 |
| scale(EmploymentStudent) | 0,0172881 | 0,18974 | 0,091 | 0,927507 |
| scale(EmploymentUnableToWork) | -0,0273824 | 0,0778451 | -0,352 | 0,725452 |
| scale(EmploymentUnemployed  Looking) | 0,0002182 | 0,1157257 | 0,002 | 0,998498 |
| Scale(EmploymentUnemployed  notlooking) | NA | NA | NA | NA |
| scale(Hedonic):scale(Offline) | 0,030876 | 0,0567156 | 0,544 | 0,586871 |
| scale(Offline):  scale(Quantitative.car) | -0,0077213 | 0,0729994 | -0,106 | 0,915887 |
| scale(Offline):  scale(Quantitative.real.world) | -0,122009 | 0,068866 | -1,772 | 0,078217 |
| scale(Offline):  scale(Quantitative.computers) | 0,0210305 | 0,0587196 | 0,358 | 0,720669 |
| scale(Offline):scale(Age1) | -0,7827064 | 2,3090344 | -0,339 | 0,735042 |
| scale(Offline):scale(Age2) | -1,7856698 | 5,6838395 | -0,314 | 0,753776 |
| scale(Offline):scale(Age3) | -1,6599642 | 5,1968761 | -0,319 | 0,749799 |
| scale(Offline):scale(Age4) | -1,2394258 | 4,0452363 | -0,306 | 0,759677 |
| scale(Offline):scale(Age5) | -0,9782435 | 3,017007 | -0,324 | 0,746148 |
| scale(Offline):scale(Age6) | -0,6757431 | 2,6502004 | -0,255 | 0,799045 |
| scale(Offline):scale(Age7) | NA | NA | NA | NA |
| scale(Offline):scale(GenderMale) | 0,1354603 | 0,0570415 | 2,375 | 0,018661 |
| scale(Offline):  scale(GenderPreferNotToSay) | -0,0126516 | 0,0546979 | -0,231 | 0,817358 |
| scale(Offline):  scale(EducationBachelor) | 0,0184988 | 0,0721218 | 0,256 | 0,797876 |
| scale(Offline):  scale(EducationDoctorate) | -0,0578154 | 0,0758335 | -0,762 | 0,446866 |
| scale(Offline):  scale(EducationMaster) | 0,0231051 | 0,0696295 | 0,332 | 0,740422 |
| scale(Offline):  scale(EducationHighSchool) | NA | NA | NA | NA |
| scale(Offline):  scale(EmploymentPartTime) | 0,2633112 | 0,1462108 | 1,801 | 0,07347 |
| scale(Offline):  scale(EmploymentFullTime) | 0,4538295 | 0,2203583 | 2,06 | 0,040953 |
| scale(Offline):  scale(EmploymentRetired) | 0,0376792 | 0,1253459 | 0,301 | 0,764081 |
| scale(Offline):  scale(EmploymentSelfEmployed) | 0,2190661 | 0,1551234 | 1,412 | 0,159696 |
| scale(Offline):  scale(EmploymentStudent) | 0,2999938 | 0,1910386 | 1,57 | 0,118176 |
| scale(Offline):  scale(EmploymentUnableToWork) | -0,0262764 | 0,0782197 | -0,336 | 0,737332 |
| scale(Offline):  scale(EmploymentUnemployedLooking) | 0,184548 | 0,116152 | 1,589 | 0,113931 |
| scale(Offline):  scale(EmploymentUnemployednotlooking) | NA | NA | NA | NA |

# Appendix 5: Articles

Online and Offline interactions in online communities (McCully, Lampe, Sarkar, Velasquez & Sreevinasan, 2011)

The study by McCully et al. (2011) focuses on the relationship between offline and online interactions between members of a community, Everything2.com. The article is a proceeding from an international symposium in 2011 and is not published in a journal. However, the article is cited by 27 other sources and is therefore considered to be of a high standard. The article starts with a literature review, in which several benefits and downsides of offline gatherings on online communities are addressed. The researchers use a multi-method analysis technique using the analysis of content, quantitative data obtained from the server and qualitative interviews to conclude several things about relationships between offline and online interactions. One of them is that offline interactions between members of a community have a negative impact on online participation of these members. Members’ contribution to the online community (measured as the number of contributions (write-ups) made) is taken as the dependent variable. The independent variable is dichotomous and is whether members of the community who did or did not attend an offline gathering called Nodermeet. In proving this hypothesis, community members are taken as a focal unit. This corresponds with the unit of analysis, as the data used are contributions made per member (individual level).

In this article, the dependent variable is individual member contribution and not individual member participation which is used in our hypothesis. One could question whether these constructs are the same. However, as we define participation as the number of contributions made by a member, we use the same unit of analysis to measure the change in the dependent variable and we can, therefore, assume that they are the same in this case.

Even though the hypothesis is not explicitly named in the report, a paragraph in the result section is about the described effect. Therefore, we assume this is the hypothesis.

The study was done twice on different Nodermeet events. Results for both instances are similar. Therefore, the reliability is high. Two weeks after the meeting, there is no significant difference in contributions made by members of the community who attended the meeting, and a matched sample of similar users who did not. However, after six weeks, in both cases the difference is significant. After Nodermeet1, attendees of the offline event posted on average 2.79 fewer write-ups than the people in the matched sample who did not attend the event (p = 0.029) (see table 1). After Nodermeet2, attendees posted on average 4.328 fewer write-ups (p = 0.049) (see table 1). These effect sizes are measures of difference and are unstandardized as they are expressed in the original units of the variables (number of contributions made). As no standard deviations are mentioned in the article, it is impossible to standardize the effect sizes.

The researchers suggest that attendance to an offline event is related to a decrease in participation in the online community. This is not in line with the hypothesis of our research. However, this is not exactly what is measured by this research design. The fact that the attendees of the offline event contributed less than non-attendees does not directly mean that attendees posted less than they did before. The found differences could, for example, also be explained when non-attendance to an offline event would increase the number of contributions made by members. Therefore, the described relationship can only be implied and is not directly proven by the study. Nevertheless, solely based on the conclusion made by the researchers, brand community managers should be careful with initiating offline gatherings between among members of the online community. If their goal is to stimulate the participation online, organizing such events might result in a counterproductive effect. As the article does not focus on brand communities, no implications on managerial relevance are made by the authors. However, the view of brand managers who think that online activity of community members can be stimulated by organizing offline events is questioned after analysing the results presented in the article. If a manager wants to improve offline activity, they might have to take a different strategy.

As no hypothesis is mentioned in the article, it is hard to determine whether the authors assume causality. In the Discussion part, they make a statement that ‘there are several possible interpretations for the decrease in contribution following attendance at a Nodermeet’. In light of the other sections in the article, the claim made by the authors is not regarded as a causal relationship.

The study contains different research strategies, but for the assumed hypothesis that is relevant for our research, the article uses a quasi-experiment as a research design. Specifically, the study can be characterized as an event study in which the attendance to an offline Nodermeet event can be seen as the event. With this research strategy, the study does not generate evidence which can support a causal claim as the possibility cannot be excluded that both the independent variable (event) and the dependent variable are influenced by an unobserved third variable (Course Book - Research Training & Bachelor Thesis Course, n.d.). In other words, other potential causes which might cause the effect are not controlled. The effect size parameter is consistent with the research strategy, as a mean of differences between people who attended Nodermeet and similar people who did not is reported as the effect size.

The theoretical domain in this study is all people participating in online communities. The population is the members of the online community Everything2.com. The population is exactly defined because a list of all members of the community exists. The population is also part of the theoretical domain. The article describes the studied population as the users of a ‘wiki-like user-generated content site’.

The relevant hypothesis for our research report compares users who attended an offline event to similar users who did not. Measurements are made by examining historical data and rely on ‘subjects’ rather than informants or respondents. Not all cases in the population are studied but a sample is taken instead. This sample cannot be seen as a probability sample but is not decided upon by the researchers themselves either. The people attending the offline events selected 'themselves', without knowing that they took part in the research. This self-selection causes biased estimation results, and therefore reduces trustworthiness. The fact that a control-group was created indirectly enhances the internal validity of the model. However, the self-selection of subjects diminishes this enhancement. According to the researchers, a Durbin-Watson test is conducted to ensure internal validity, but this test is only conducted for the relationship between the variables ‘Write-ups before’ and ‘Write-ups after’.

The independent variable, defined as whether someone attended an offline (Nodermeet) event, is measured based on attendance lists. This captures the definition of attendance of an offline event and is therefore considered to be a valid measurement. However, only data from large Nodermeet events are taken into account. This decreases the measurement validity as the characteristics and outcomes of small events could potentially be very different from those of large events. To generalize the findings to the selected theoretical domain, small meetups should be taken into account as well. The evaluation of attendance lists is not prone to interpretation and is therefore considered to be a reliable measurement of the independent variable. However, it is not stated in the article whether the attendance lists were created in advance or on the event itself. In the case that attendance lists are based on people who said that they were going to attend the event in advance, one could question whether this resembles the real attendance to the event. In that case, to ensure measurement reliability, the researchers should find a way to check whether people who said that they were going to an event did also attend. A possible way to do so is described in the article of Sessions (2010), who compared the attendance lists to pictures made on the event.

The dependent variable is measured by the total number of contributions (write-ups) before and after the event. Whether the number of contributions made completely captures the definition of participation is already discussed in other articles. However, the study uses server logs which is an objective way of examining the total number of contributions. The measurement is therefore considered to be valid and reliable. For the validity, one could have similar concerns as in the article of Sessions (2010). As only the number of contributions is measured and not, for example, the length, one could question the coverage of the concept of participation.

The reliability of the measurements is considered to be sufficient as it is based on quantitative output from the servers and therefore not prone to interpretation by the researchers.

A screenshot of a cell phone

Description automatically generatedTable 1 - Ordinary least squares regression predicting attendees' Write-ups after 2 and 6 weeks from Nodermeet1 and Nodermeet2 (D.V. = WU after). Nodermeet attendants are the reference group. (McCully, Lampe, Sarkar, Velasquez & Sreevinasan, 2011)

Encouraging Participation in Virtual Communities – (Koh, Kim, Butler & Bock, 2007)

The study of Koh et al. (2007) focuses on the relationship between offline interaction of virtual communities and posting activities. In the paper, no explicit hypothesis is mentioned. From figure 1, one can derive that it is about the relationship between two variables, Offline Interaction and Posting Activity of the community. There is no control group in this study and participants are self-selecting into going to an offline event. This implies that the treatment assignment mechanism is non-random. Besides that, one cannot determine whether the relationship is not due to an omitted factor causing both variables to change. The research is conducted by only one survey, so not two surveys before and after offline interaction. Consequently, this makes it very difficult to determine a causal relationship. Because of the direction of arrows in figure 1, one can assume that Offline Interaction does precede Posting Activity. There is a logical explanation of why Offline Interaction affects Posting activity. Offline meetings strengthen solidarity and intimacy amongst community members. This stimulates them to be more active in posting content online. Lastly, an association is present because the independent variable increases when offline interaction increases.

A close up of a piece of paper

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Figure 1 - Analysis Results (Koh, Kim, Butler & Bock, 2007)

The theoretical domain of this study includes all virtual brand communities that organize offline events in all countries and at all times. A virtual community is defined by Koh et al. (2007) as a group of people interacting predominantly in cyberspace for their common interests, relationship building, transactions and fantasies. This defines and specifies the characteristics of the population as well, which is virtual communities in Korea. The report does not make claims beyond the population.

The focal unit of this study are virtual community members, this corresponds with the Unit of Analysis. The data used are survey results per member and are therefore on the same level as the focal unit (individuals). Only the communities with more than 2 responses and with some inter-rater agreement were considered of the 691 virtual communities in total. The independent variable of the study is Offline Interaction, which is a dichotomous variable. The dependent variable is Posting Activity.

This study is relevant for our literature review since it has a similar focal unit, concepts and proposition as our hypothesis. However, the domain differs, since that is limited to Korea in the study. According to the ERIM Journal List, this article is published in a journal that has a P-rating meaning it is published in one of the best journals in the field of management.

According to the literature review of the article, the social presence of community members increases due to offline interaction. It helps members of virtual community trust, understand and identify with one another. This is consequently providing a stronger base for posting activities. For Koh et al. (2007) to find out whether this is true, they analysed the field survey results of 77 virtual communities in Korea. The measurement relies on respondents since quantitative research is done based on a survey. The population of this research is the total of 500,000 virtual communities in Korea, which is part of the theoretical domain mentioned previously. A non-probability voluntary sample was taken from the entire population, consisting of 691 virtual communities. 77 virtual communities were selected in the end because they had more than 2 responses and some inter-rater agreement was present. Therefore, the total amount of missing cases is 614. This implies that external validity considering the application of results to the theoretical domain is questionable because of cultural dimensions. It might be that the effect of offline interaction is amplified since Korea is known as a collectivist society. The research was conducted through a Web-based questionnaire system. The research strategy is a cross-sectional study with a nominal independent variable. The 77 virtual communities make up the group of cases. This implies that there is no evidence generated in support or against a causal direction. Because only one survey was conducted, it is impossible to claim that the independent variable preceded the dependent variable. No data matrix is available for this study, making it impossible to compare the average level of control between communities and the difference between the means. To conclude, the effect size parameter is not consistent with the research strategy.

The effect size of Offline Interaction on Posting Activity is 0.387, which is assumed to be the standardized regression coefficient. No standard deviation is mentioned in the article making it impossible to calculate the standardized regression coefficient if 0.387 were to be the unstandardized regression coefficient. Although not explicitly stated, it can be assumed that the data means that Posting Activity increases by 0.387 posts when Offline Interaction is present. This is a lack of this article since it is not stated what 0.387 means in the context of the relationship tested. Nonetheless, the effect size is a measure of association. The article states that Offline Interaction increases the Posting Activity, this coincides with our interpretation of the effect size. However, a further comparison is hindered by the lack of explicit statements on the 0.387 in the article.

Unfortunately, the confidence interval of the regression coefficient cannot be calculated because no standard error is mentioned in the article. On the contrary, the coefficient of determination is known. 32.6% of the effect of Offline Interaction on Posting Activity can be explained by the model in figure 1. This percentage is low causing a lack of internal validity. The extent to which the survey can be considered to meaningfully capture the ideas contained in the concept of which the value is measured is little. Using only an online survey as a research method decreases reliability and internal validity since respondents may not provide honest answers. Therefore, it is questionable whether the sources are trustworthy. An online survey allows for lower costs, convenience and design flexibility but also creates a risk for survey fraud. If respondents do not understand a question, they might give fake answers since they are unable to ask an interviewer for any further explanation directly. A lack of accountability might cause people to randomly click buttons to finish quickly.

Cronbach alpha exceeded 0.8 and inter-rater agreement scores were greater than 0.85. A p-value smaller than 0.01 makes it extremely likely that posting activity is indeed associated with offline interaction.

Brand Community - (Muniz & O'Guinn, 2001)

Muniz and O’Guinn (2001) introduce the concept of brand community in the Journal of Consumer Research which has a STAR classification according to ERIM Journals List. This classification implies that this journal belongs to the absolute top in the field. They describe it as ‘a specialized, non-geographically bound community, based on a structured set of social relationships among admirers of a brand’. The paper does not test a hypothesis, a relation between X and Y. It rather advances the theoretical notion of brand community, looks for evidence of its existence, searches manners, mechanisms and particularities of brand communities and situates these findings within a broader context. To check the quality of the data, a checklist from *Qualitative data analysis: A user-friendly guide for social scientists* by Day (2003) was taken.

The study included two parts: a face-to-face component and a computer-mediated phase. The online and offline observations were gathered by the researchers themselves which means that they used primary data. For the face-to-face phase, an interview protocol was used. Once evidence of a brand community was discovered in the town Fairlawn, the researcher branched outward to individual members of those brand communities who lived outside the Fairlawn neighbourhood, including users’ groups and local brand communal sites.

The interviews with the households took over 100 hours. The interviews were recorded and field notes, including observational data, were also typed immediately after the interviews. The researchers gained personal history and background from the informants to allow the findings to be judged in the context of the informant’s life circumstances. After some brand communities were identified, the authors continued by attending meetings to secure interviews with individuals as well as in a group setting. Muniz and O’Guinn applied a multi-context approach to collect informants with varying community and brand histories.

For the computer-mediated phase, websites created by individuals and clubs (rather than commercial websites) related to a brand community were analysed. In total 50 websites and 300 pages were analysed. All the data collected, interviews and online, was analysed using an iterative process. The authors transcribed, interpreted, challenged, rejected and affirmed recurring themes and codes until the interpretation achieved, according to the researchers, enough interpretive convergence.

One of the authors was also an informant. According to the paper, this was advantageous. However, as being part of a brand community, you might be biased and unable to critically reflect your position. With qualitative data, it can be challenging to be entirely objective. Therefore, many researchers employ a third party to determine the quality of the evaluation of the data (Turner, 2010). In this paper, the two authors were both actively involved in the interpretation of the data. In the findings section, the researchers provide evidence for their findings by providing quotes directly taken from the interviews. They also motivate their interpretation of the quote.

Moreover, during the interview phase, the owner of a Saab dealer was interviewed. In this case, biases from the dealer may have influenced the observation. To illustrate, the owner may benefit from describing Saab as a brand with a strong brand community. He might be working with the brand the entire day and therefore surrounded by like-minded people. As a result, he might get the wrong picture of the magnitude of the brand community.

There is no hypothesis in this paper. Hence, the authors make no causal claim. The paper rather examines whether a community around a brand exists.

Since the paper tries to establish if there are brand communities among people in the first place, the theoretical domain of the paper is all individuals on earth. The population is not exactly defined, but for the face-to-face component of the study, it can be assumed that all families living in Fairlawn are taken as the population. This town was chosen largely for convenience, so it is a non-probability sample. From the population, a sample is drawn: four households participated in the data collection. One individual of a household was never interviewed, but this did not affect the results. In the computer-mediated phase, World Wide Web pages from Saab, Bronco and Macintosh, were analysed and downloaded. The population were community members using these webpages. The samples were also not random. However, multiple search engines were used to ensure that a larger variety of themes were captured. Consequently, this study relies both on informants and data analysis.

The paper establishes the concept of brand communities. Based on the authors' definition before the research, it is possible to evaluate the validity. It must be recognized that ethnographic research does not allow for the same amount of generalizability as with probability sampling. As the researchers read and reread their observational notes and challenged their interpretations of their findings, the validity can still be considered high. The combination of ethnographic and data research increases the reliability as both methods found evidence for the existence of brand communities.

Conclusion on effect sizes for the first three articles

For all three articles, there is an absence of the necessary data to calculate and interpret the standardized effect sizes. For this reason, the procedure to compute these measures are explained below as they were available in the research paper. Often you can derive the standardized coefficient from the unstandardized measure. For example, if the unstandardized regression coefficient is given (e.g. in summary research article 2), you can multiply this by a ratio of the standard deviations of the independent variable and the standard deviation of the dependent variable (Rooderkerk, n.d.). The computations are often done by software, for instance using an 'Effect Size Calculator'. These calculators can also help you to critically reflect on the effect sizes if other data than the standard deviation is provided (e.g. p-values, sample sizes). Unfortunately, was additional data besides the standardized effect sizes not available. To obtain these, the researchers should be contacted. It is important to understand the differences between unstandardized and standardized measures since the interpretation is fundamentally different. To illustrate, the unstandardized coefficient shows how much the dependent variable changes if we change the independent variable by one-unit ceteris paribus. On the other hand, the standardized coefficient indicates which of the variables has the largest effect as it represents a measure in standard deviations.

Due to the lack of standardized effect sizes, it is recommended for community managers to experiment themselves. It is clear that the effect of offline participation on online participation is too evident to be ignored, but validity is lacking. Brand managers should organize their offline event to see what impact it has online. This improves relevance and internal and external validity for the experiment of a specific brand.

Can we get from liking to buying? Behavioural differences in hedonic and utilitarian Facebook usage (Pöyry et al., 2013)

The article by Pöyry et al. (2013) relates the different motivations of people to use Facebook pages of companies to community usage behaviour. The article was published in the journal ‘Electric Commerce Research and Applications’ which is given a ranking ‘S’ in the ERIM Journal list. Furthermore, it is peer-reviewed and has over 240 scientific citations. Therefore, it is considered to be of a high standard.

Based on a literature review, the authors distinguish two different motivations to participate in online communities. First, hedonic motivations are based on seeking for fun, play and enjoyment. On the other side of the spectrum are utilitarian motivations which are defined as being goal-oriented and rational. Next to the distinction in motivations, the paper divides community usage behaviour in participation and browsing. This is in accordance with the widely adopted view that distinguishes between posters and lurkers, as described amongst others by Lai and Chen (2014).

The article tests eight hypotheses by surveying a Facebook page of a travel agency. Only the hypotheses linking both motivational constructs to participation are relevant in our literature review. Firstly, hypothesis 1 (H1) assumes that hedonic motivations are positively related to participation behaviour. Next to that, hypothesis 3 (H3) assumes that utilitarian motivations are negatively related to participation behaviour. These hypotheses take our moderating variable (hedonic/utilitarian motivation) as an independent variable. The theoretical domain is not specified in the study, but from analysing the text it follows that the domain is all users of company-hosted Facebook pages. This is not the same as virtual brand communities as meant in our hypothesis since the possible detraction by the attendance of other brands on the same platform. However, the article is still considered to be relevant to explore the context of our hypothesis.

The focal units in both hypotheses are community members, which correspond with the unit of analysis of the study. The constructs which are defined as independent variables (hedonic motivations and utilitarian motivations) and dependent variables (participation behaviour) are all linked to multiple questions in the survey which are created based on previous research. To measure participation behaviour, the survey asks respondents to rate statements like ‘I use to contribute to the community’. It can be questioned whether this gives a representative view of the actual participation of members as a difference exists between how much people think they contribute and their actual participation, as described by McCully et al. (2011).

The researchers use a structural equation model to test the hypotheses. For H1, a strong positive relationship is identified, with a structural coefficient of 0.51 (see figure 2) as the effect size (p < 0.001). H3 is rejected as no significant relationship is identified. The structural coefficient as used in the article is not explained, but for conservative reasons, we assume that it is an unstandardized path coefficient. It follows that the effect size does not express how many standard deviations the dependent variable is expected to increase when the independent variables increase by one standard deviation (Course Book - Research Training & Bachelor Thesis Course, n.d.).

A close up of a map

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Figure 2 - Structural Coefficients (Pöyry, Parvinen & Malmivaara, 2013)

The hypotheses are not clear about whether they entail a causal claim. A positive relationship between two concepts is assumed, but it is not specified whether a change in the independent variable precedes a change in the dependent variable. However, in the section in which the hypotheses are explained, it is stated that the authors ‘suggest that users’ hedonic/utilitarian motivations determine their usage behaviours’. This, combined with the fact that structural models are traditionally used to measure causal relationships, makes us assume that the researchers expect a causal relationship between the variables. A structural model should include or account for all variables that influence the relationship between de dependent and independent variable. Nevertheless, it is not possible to be entirely sure if all instances and influencing factors are included. As indicated earlier, the researcher uses a survey to gather data. This survey was taken at one point in time (two times, but it is clearly stated that the second time was only a reminder for people who did not respond to the first one) of several respondents which were not manipulated. This makes their design cross-sectional and therefore not able to generate evidence in support of the causal direction that is implied by the hypothesis (Course Book - Research Training & Bachelor Thesis Course, n.d.). The standardized effect size parameter can be mathematically correct, but it suggests precipitously causality when it is used to confirm the hypothesis with statements as stated above.

The article ends with describing the managerial implications of the findings. Most of these implications are centred around hypotheses which are not relevant for this paper. However, the final implication described is that companies should try to get extremely hedonic consumers to produce exciting content to the community. By doing so, they help the community to stay alive and attract the 'browsers' to stay active. This seems to be a valid argument based on the findings. However, focusing too much on the hedonic part of the community might distract utilitarian motivated people as this impacts their ability to be goal-directed. Managers should always keep in mind that the functionality of the community does not decrease due to the adoption of a more hedonic focus.

As described earlier, the theoretical domain is the users of the company hosted Facebook pages. The data used in the research comes from members of a travel agency’s Facebook page, which total member base can be specified as the population. Several aspects of the firm owning the Facebook page are described and based on this information the researchers conclude that the research context is appropriate. However, the fact that the travel industry represents a large sector of global e-commerce cannot be considered as enough reason to be able to generalize the findings of the study to members of other industry company Facebook pages. The people who are members of a travel companies page are likely fundamentally different from members of other company-hosted Facebook pages, which can lead to different results when the study is repeated. Nevertheless, the population is a part of the theoretical domain. From the population, a sample is taken through a posted web-survey. This sample can be considered as a non-probability voluntary sample as the members decided themselves whether they wanted to take part in the research or not. The measurement relies on the respondents to the survey, and they can be considered trustworthy as there are no questions about sensitive topics and they do not seem to have an incentive to maliciously provide faulty answers.

The questions used in the web survey linked to the independent variables (hedonic and utilitarian motivation) are provided in the article and based on scientific literature. Amos 19 software is used to calculate individual item loadings. All these measures resulted in values above the threshold, thereby indicating high measurement validity. The responses in the first and second group of respondents are compared and no significant differences between answers were found for the questions important for our research. Besides that, composite validity and average variance extracted are calculated for both constructs (hedonic and utilitarian motivation) and result values which are above the threshold, thereby indicating high measurement reliability.

The dependent variable (participation) is measured by using similar questions in the same survey. All of the above-described criteria return values above the threshold for this construct as well, indicating high measurement validity and reliability. However, in the article discussed above by McCully et al. (2011), a disconnect was described between members' perception of participation and real participation. In their research, participants to offline events showed the perception that they contributed more to the community after attending an event, while the behavioural data from the server showed an opposite effect. If the same is the case here, the answers to the questions regarding participation in the survey (which are based on members’ perception) could differ from their actual participation, thereby undermining measurement validity of the dependent variable.

How offline gatherings affect online communities (Sessions, 2010)

Sessions (2010) examines the influence of offline gatherings on online communities at large. The article is peer-reviewed and cited by 91 papers and is therefore considered to be of high quality.

In the literature review, the author links virtual communities to the concept of social capital. It is described that virtual environments can enhance social capital by connecting geographically dispersed friends, while it can also diminish it as it detracts from offline interactions. The concept of social capital is divided into two processes: bonding and bridging. Bonding is linked to strong social ties, while bridging is described as the process of forming weaker ties. These processes are used to introduce some merely psychological insights about ways in which face-to-face contact can impact online behaviour.

By the time the article was written, no empirical studies were done on this topic. Therefore, Sessions (2010) created a few hypotheses to test the relationship between face-to-face contact and online behaviour. Of these hypotheses, especially hypothesis 3 (H3) is relevant for our research. The hypothesis states that attendees will increase their involvement in the community after attending a meetup for the first time. In this hypothesis, the independent variable is whether a community member attended an offline meetup (dichotomous). The dependent variable is involved in the community, which is in the results section defined as an engagement in the community. This is measured by the number of contributions made by a member. For the hypothesis, individual members are taken as the focal unit, which corresponds with the unit of analysis (contributions made per member).

As is seen in earlier articles, this article uses engagement/involvement as a dependent variable, which is not the same as participation. However, as the constructs are measured by the same unit of analysis (number of contributions made), the dependent variables are considered to be the same in this case.

The study contains data of the online community metafilter.com. Over 8.5 years, 322 offline meetups took place. For members of the community who attended a meetup for the first time, the difference in 'activity' (number of contributions made) before and after the meetup is measured. However, the effect size turns out not to be significantly different from zero (t = 0.01, p = 0.99, see figure 3). When using this data to calculate a 95% confidence interval, the population mean ranges from -2.02083 to 2.04083. This confidence interval for the effect size more or less mirrors around zero, which means no clear effect size can be extracted from the data. It is therefore uncertain whether there is a treatment effect, that means in this case that it is uncertain whether activity on the online platform differs before and after attending an offline meetup, which is in line with the conclusion made by the researchers. The reported effect size is unstandardized, as it is measured in the original units of the variables (number of contributions made).

A screenshot of a cell phone

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Figure 3 - Change in activity per day following meetup attendance n= 789 activated attendees (Sessions, 2010)

The hypothesis entails a causal claim. The study follows a longitudinal research design, in which the activity of a population is measured over time. As the researchers did not have any influence in the extent to which the people attended the offline event, the research design can be defined as a panel research design (Course Book - Research Training & Bachelor Thesis Course, n.d.). For each of the participants, the number of contributions before and after an event is measured, and the mean of the differences is reported as an effect size. However, in this case, there is no control group, as people who did not attend a meetup are not considered as a benchmark. Furthermore, as described in the discussion of the article by Koh et al. (2007), people are not assigned to whether they randomly attend an offline event. This problem with the treatment assignment mechanism makes that causal claims are not supported by the evidence. The issues described decreasing the internal validity of the possible outcome. In general, an event study cannot prove a causal claim, as there is no control for other variables (Course Book - Research Training & Bachelor Thesis Course, n.d.). The reported effect size is consistent with the effect size of an event study (means of difference).

Even though the paper does not report an effect size for the hypothesis relevant for our research, it still contains some relevant insights in the way in which offline contact affects online behaviour. Attendees of offline events contribute more to the platform than members who do not attend events. Furthermore, they are significantly less likely to leave the community, which can also be seen as a sign of higher engagement. As the paper is not directed to managers, it does not contain any managerial implications. It has to be noted, however, that for both of these claims no control group was assigned in the research design. It is likely that people who attend offline events are already more engaged in an online community and that they are less likely to abandon it regardless of their attendance. Both of these aspects could be the focus of future research. If from this research follows that attendees to offline events are less likely to leave the community than similar people who do not attend, this could have important managerial implications. Retaining the people who contribute most is a top priority for them, as they keep the community alive. In that case, organizing offline events could be a positive stimulus for communities which are about to cease.

The hypotheses in this paper are directed to physically dispersed online communities. According to the introduction, the paper focuses on members' behaviour as well as on the effects on the community at large. However, all hypotheses are directed at individuals within the communities. For these hypotheses, the theoretical domain can, therefore, be specified as members of physically dispersed communities. Data comes from a large, online, physically dispersed community (MetaFilter, N > 30,000). In the method section, various aspects of the population are discussed and are linked to reasons to choose this community. According to the researchers, the fact that the high level of member diversity strengthens the external validity of the research.

H1 and H2 focus on all community members by comparing attendees to non-attendees, while H3 and H4 only focus on attendees. Therefore, the population is different for the hypotheses as well, but in all cases is the population part of the theoretical domain. For hypothesis 3, the activity data of people who attended an offline meetup are compared before and after the offline event. This means that only the people who attended an offline event are considered, which limits the population to attendees. As all attendees to offline events are studied, this is a case of a census.

Similar to the article by McCully et al. (2011), measurements are made by examining historical data and rely on ‘subjects’ rather than informants or respondents. The subjects were not aware that they would be part of future research by the time and are therefore considered to be trustworthy.

The independent variable (participation in an offline event) is measured by the subscription to gathering lists online. Whether someone attended a meeting was confirmed by comparing the people on the pictures posted on the gatherings pages to the people who were on the attendees’ lists, which ensures that the lists were accurate. Furthermore, moderators of the community were active in removing ‘sock puppets’ accounts, which are multiple accounts used by the same user, to ensure that usernames link directly to one person. The measurement of the independent variable is therefore considered to be valid. The researchers used objective measurements to determine whether someone attended an offline event, and therefore the measurements of this concept are reliable as well.

The dependent variable is measured as the number of contributions made before and after the event. As mentioned earlier, it can be questioned whether the number of contributions made captures the complete concept of involvement, but all research done so far on this topic uses this measurement as it is a relatively easy and objective measurement. Therefore, the measurements are considered to be valid. However, it has to be noted that the length of contributions is not taken into account. A comment of one word is therefore given the same value as a post of over 1,000 words. It can be questioned whether both contributions account for the same level of ‘involvement’. This could impact the validity of the measurements. SPSS software is used to count the number of contributions made to the community. This makes the precision of the measurements, and therefore the reliability, of a high level.

The role of online and offline features in sustaining virtual communities: an empirical study (Lin, 2007)

Research by Lin (2007) examines the impact of online and offline features on the sustainability of virtual communities. The paper is peer-reviewed and published in Internet Research and cited 285 times. The paper does not make a direct claim between offline activities and participation in an online community. It rather introduces the intervening variable ‘sense of belonging’ as depicted in the figure below.

Offline features: offline activities

Sense of belonging

Behaviour intention

H1

H8

Figure 4 – Hypotheses Lin (2007)

Lin hypothesizes in hypothesis 8 (H8) that offline activities positively affect the sense of belonging to the virtual community. According to Hagertry et al. (1992) sense of belonging is described as ‘the experience of personal involvement in a system or environment so that persons feel themselves to be an integral part of the system or environment’. Moreover, according to the literature review, a strong sense of belonging infers a strong intention to be more involved in the virtual community. This is hypothesized in hypothesis 1 (H1).

In both hypotheses, the focal units are individual community members. This is in accordance with the unit of analysis in the study. The theoretical domain is non-profit virtual communities. Consequently, the question remains whether the same results will be generalizable to for-profit communities.

The data was collected using a questionnaire. Sense of belonging to a virtual community was measured by asking subjects to indicate if they felt a strong sense of being part of the virtual community, strong morale among members of the virtual community and commitment to the virtual community (Lin, 2007). Moreover, offline activities were measured using items used by a study of Koh and Kim (2004). Therefore, the formulated independent and dependent variable was measured in the study.

Although not explicitly stated, it is assumed that the presented correlation coefficients are unstandardized. For H1 the coefficient is 0.41 (p<0.001) and for H8 the effect size is 0.21 (p<0.01). These coefficients reflect the relation between the constructs. Therefore, both effect sizes support the corresponding hypothesis. Since the t-values (4.77 and 3.25, respectively) and sample size (n=165) are presented in the paper as well, the unstandardized coefficient can be calculated using an online effect size calculator. Once the computations are executed, the unstandardized measure for H1 is 0.35 and for H8, 0.2467. The confidence interval for H1 and H8 is 0.2083 < x < 0.4772 and 0.0976 < x < 0.385, respectively. The interval does not overlap with 0. For this reason, there is a positive relationship. However, it should be noted that the meaning of the interval is limited to the convenience group since the researcher used the convenience sampling method. This is a limitation as this does not allow generalizability. The effect size is not interpreted by Lin (2007) for managerial practices. It rather states that the independent variables indeed positively affect the independent variable.

A close up of a map

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Figure 5 – Results hypotheses

The study does not explicitly state a causal claim. However, as was noted when discussing the structural model in the article of Pöyry et al. (2013), these models are traditionally used to measure causal relationships. The research design was a cross-sectional study, where they at one moment in time conducted a questionnaire. This method has the lowest internal validity concerning causal claims. As a result, the paper also does not generate evidence that can support a causal claim.

One of the managerial implications for virtual community managers is to understand that organizing an offline activity might foster a greater sense of belonging, which might, in turn, increase online participation. Participation is necessary for an online community to be sustainable. One way to do this by facilitating offline communication by members by for example providing email addresses of members who post in a forum.

The theoretical domain in this study is virtual communities. The population is not explicitly stated in the paper, but the sample is taken from a group of very successful virtual communities in Japan. As such, it can be concluded that the population is successful virtual communities in Japan. 20 leaders from these successful virtual communities were asked to randomly distribute questionnaires to community members. Therefore, the sample is a probability sample. In total, 200 members received the survey and 165 were completed, which resulted in a response rate of 82.5%. It is not foreseen that the missing cases would be significantly different from the observed cases and influenced the findings. Paper-based questionnaires have been distributed, so the measurement relies on respondents. It is hard to evaluate the trustworthiness of respondents if the questionnaire is only filled out once.

The measurements are drawn upon the well-validated, theoretically grounded, technology acceptance model (TAM) to examine the independent variables. The model was also validated by conducting a confirmatory factor analysis. All measures were above the threshold. Consequently, the validity of the dependent and independent variables is high. The reliability of the constructs was tested by composite reliability and the average variance extracted. The composite reliability was higher than the 0.70 thresholds for field research. Also, the extracted variances were higher than the 0.50 threshold. So, the measurements for the dependent and independent variable are considered reliable.

Exodus to the real world? Assessing the impact of offline meetups on community participation and social capital (Chen & Cage, 2013)

The paper by Chen & Cage ­represents a systematic assessment of the impact of meetups on community participation using the bridging and bonding social capital theoretical framework. The paper was published in the *New Media & Society* Journal. The study was built on two theoretical frameworks outlined in the literature review. The first concept introduced is social capital which is defined as the resources and benefits obtained through relationships among people. Social capital can be broken down into two categories: bridging and bonding. Bridging results according to the paper from loose ties that bind disparate groups, while bonding results from close connections. The former type of social capital is based on infrequent interactions between individuals from dissimilar social groups. However, the second type is based on frequent and repeated interactions between people from a similar background.

A picture containing clock

Description automatically generatedThe second framework that is essential to understand and interpret the paper's results is the notion of different social structures: brokerage and closure. Brokers refer to a connection that is built between people via a third person that would otherwise not have existed. On the contrary, closure occurs when the third person connects to others who are already connected among themselves without the interference of the third party. This principle is illustrated in the picture below.

Figure 6 – Brokerage and Closure

The authors introduced two hypotheses in their paper, which are both relevant for our thesis. The first hypothesis (H1) states that meetup attendees are more likely to lose bridging social capital after attending a meetup, compared to non-attendees. Furthermore, the second hypothesis (H2) suggests that meetup attendees are more likely to increase their bonding social capital after attending a meetup, compared to non-attendees. The independent variable in both hypotheses is whether a community member attended an offline meetup. In H1 the dependent variable is the strength of bridging social capital and in H2 the strength of bonding social capital.

The unit of analysis in the study is the same as the focal unit in the hypothesis, individual members of a community. The independent variable was measured using a dichotomous variable. When a user attended a meetup, this was registered as attended = 1. The dependent variable in H1, strength of bridging social capital, was measured by network brokerage and the dependent variable in H2, the strength of bonding social capital, was measured by network closure. Therefore, the dependent variables are structurally operationalized as brokerage and closure following the procedure used in previous research papers. As a result, the independent and dependent variable formulated in the hypotheses, are measured in the study.

The study used data from *Galactic Watercooler* (GWC), a public forum for podcast listeners of the science fiction television show Battlestar Galactica from September 2007 until September 2011. The data included tables including information about users, posts and pmtext. Within the four-year time frame of the data, there were four meetups and comparisons were made based on pre- and post-meetup observations.

After analysing the data, H1 was supported as attendees shrank their bridging social capital more (vs non-attendees) since their effective network size decreased (B = -9.253, p < .001; B = -22.856, p < .001; B = -19.892, p < .001). Moreover, H2 is supported as well, as meetup attendees (vs non-attendees) were more likely to form closed networks after each meetup (B = 12.615, p < .001; B = 24.086, p < .001; B = 17.467, p < .001). These effect sizes correctly represent a relationship between the dependent and independent variable formulated in the hypothesis and are unstandardized as they represent the original unit of the variable (effective network size). Chen and Cage interpreted the data as follows: meetups tend to decrease attendees' bridging social capital while increasing their bonding social capital. These interpretations seem to look fair after reading their analysis.

Table 2 - Regressions models predicting the change of bridging social capital after meetups

A screenshot of a cell phone

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A screenshot of a cell phone

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Table 3 - Regressions models predicting the change of bonding social capital after meetups

The researchers are making a causal claim in their hypothesis. However, their research design has a quasi-experimental nature. The research strategy that is used is an event study. This implies that changes in the value of the dependent variable are observed in cases in which an event has occurred (Course Book - Research Training & Bachelor Thesis Course, n.d.). Specifically, the event would be the meetup (attended =1). These strategies have higher internal validity than cross-sectional studies but lower internal validity than experimental research designs. Therefore, a causal claim cannot be made by using an event study. Another limitation of this research is the lack of data from other channels. Therefore, the results are less generalizable to other situations and scores low on external validity.

Managerial implication of this research is to be aware of the implications that offline gatherings have on social structures. Once an offline meetup is organized, attendees might feel more attached to the community than before. However, it should be noted that non-attendees or new users are less bridged into the community. Therefore, it will take more time to reach the desired effect of offline gatherings.

The theoretical domain in this study includes online brand communities that host offline meetups. The GWC community is the population. From the population, no sample (census) was drawn as an entire dataset including private and public conversations was used for the analysis. This research does not rely on data from informants or respondents but uses an entire database as a source. This source is trustworthy, as all information that is needed is available and it is very unlikely that the data is manipulated. The measurement for the dependent variable is high in validity because the database includes three tables: posts, users and pmtext. From there it is possible to trace which users were in contact with whom and as such the researchers were able to determine if there was a bonding or bridging relationship. On the other hand, the validity of the independent variable (attendance of meetup) is questionable as the attendance is based on GWC participants’ RSVP records, which does not necessarily mean that people attend if they have told GWC that they are planning to come. The reliability of the dependent variable is sufficient as it is based on quantitative data and not interpreted by the researchers. If the study would be repeated, it is plausible to yield similar results. The same reasoning holds for the independent variable.

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1. We were not able to calculate the Confidence Interval using an online Effect Size Calculator since the authors

   did not provide additional data, such as t/p-values or the standard error. [↑](#footnote-ref-2)
2. This paper examines the existence of brand communities among people rather than trying to find support for a (causal) relationship between variables. [↑](#footnote-ref-3)