

Memes while you wait: An Evaluation Tool for User Satisfaction

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ABSTRACT

Memes are among the most popular visual media formats of this time. They are already used to reflect on actions and events globally, but the use of memes as an evaluation tool is left relatively unexplored. This study implements memes into an evaluation tool. The effectiveness of this tool is evaluated in the context of the waiting environment. A digital platform has been developed where participants can view and create memes about their experience, creating a contained online meme-community specific to the waiting location. The platform has been tested in three different environments. The study showed that most people like to make use of the platform without making a meme themselves. Also, a big difference in users' interests could be seen between the environments. Although it showed potential to be used as a visual evaluation tool to express thoughts and opinions to evaluate user satisfaction, it is suggested to perform further research with the same topic in calmer waiting areas.

Author Keywords

Memes; evaluation tool; waiting environments; object-relabeling; public transport

INTRODUCTION

As the old saying goes: "A picture says more than a thousand words". Several studies have proven that the brain is much faster at processing imagery than text [2]. This study will focus on the effectiveness of implementing a visual evaluation tool as part of a service quality evaluation. For this, a trendy graphic format will be used that grew very popular in the past decade: Memes.

Currently, memes are no longer just funny pictures, like they were in their early years, but are now part of a whole internet culture and are used as expression tools. Memes are used to express thoughts and opinions on many different topics, including politics, climate change etc. [6]. In a way, memes are already used as a tool to express experiences among peers; therefore, memes are a very suitable visual format for this study.

If you look around you currently, there are requests for evaluation everywhere; almost every service you use wants to know whether you like it and how they can improve their services to increase your satisfaction. However, most of these requests include long and boring

surveys, resulting in low response rates and a feeling of inability to express themselves properly among participants. So a change is needed in order to achieve higher response rates. One interesting possibility is to make the evaluation more fun and personal for the participants through visual expression in the form of memes.

For this specific study, an interest was taken into waiting environments as the desired location. This is because many people kill waiting time by looking at their phones [9]. Looking at memes is one activity performed when using your phone while waiting. On top of that, a moment of waiting also seems like the perfect time for some reflection, thinking about the enjoyments and frustrations of past events. Waiting is often seen as tedious, so implementing an evaluation tool including memes could be an excellent addition for this scenario.

This study aims to determine whether memes allow for better expression of (waiting) experiences within different environments. The following research question will be explored:

- How could a meme platform be used as an evaluation tool?

For this study, it is also interesting to find out if this platform is handy in the waiting environment and can help people pass the time. Furthermore, the whole point of this platform is to replace regular surveys, so it is also essential to know how people can express themselves in relation to regular surveys that include standard Likert-Scales, for example. Finally, it might be helpful for this particular public transport environment to see if users indeed use the platform to express their frustrations about their travels. All of this led to the following sub-questions:

- Do memes allow for better expression than other evaluation methods like Likert-Scales?
- Do memes help with expressing frustrations experienced during travels?
- Can creating memes help with passing the time in waiting environments?

An online platform was designed for this study, allowing users to make their own memes about experiences they encountered while using public services. This platform was deployed to be used out in the field by people. The primary waiting environment for this specific study is a waiting area at the Eindhoven Centraal train station where people wait for their busses since public transport is one of the most used public services in daily lives that deals a lot with user satisfaction. Furthermore, two other environments were used to collect additional insights.

RELATED WORK

Traditional Evaluation Tools

Despite their popularity, surveys/questionnaires might not be the best method for acquiring user satisfaction data, mainly due to their low average response rates of 33 per cent [16]. However, there are differences in response rates depending on what medium is being used. Face-to-face surveys have the highest response rate, with an average of 57 per cent [16]. This low number is logical since participants are directly approached in person and

asked to participate. However, after that, the more digital the survey gets, the lower the participation rates get up to the point where an in-app survey only has a response rate of 13 per cent [16].

The length and experience of a survey or questionnaire are vital determinants of response rates. Long and boring surveys/questionnaires lower the participation rates. An evaluation of 12 or more questions that takes over 5 minutes to complete already drops the response rate by 15 per cent. This number increases to 40 per cent when it takes more than 10 minutes [16]. These statistics can be somewhat backed up by another study investigating differences in response rates between "short" and "long" surveys for health evaluation studies [12]. All of this is related to the human's attention span and motivation.

Waiting Experiences

Waiting is often experienced as tedious unless the service is valuable; for instance, it contributes to the experience [15]. Considering train stations, the clients are goal-directed and therefore conscious of the time. When standing in line for hedonic services, visitors experience the waiting time as less boresome. Van Hagen [15] found that customers can be in a telic state when they enjoy the journey or a paratelic state when they rather see it as a functional activity. Functional services ask for an efficiency-oriented service, whilst with hedonic services it's more about enjoyment. For both situations, the wait evaluation seems to determine the satisfaction, with the wait of more importance than the time estimation. He found that time passes more quickly when adding sounds and music to the train station, even though people said they do not need it – showing a gap between the conscious image and the unconscious experience.

A study by Antonides et al. [1] shows that the waiting experience is mainly influenced by a person's acceptable and perceived waiting times. It also showed that people base their experience on the peak-and-end rule, which includes the most extreme and the final episode. Considering the validation of the train journey itself depends highly on the extent to which the travel time can

be spent in a useful or pleasant way [1]. And pleasant activities have an even stronger effect than useful ones. If the activities on the train and the destination are in line, the effect is even stronger. The attention should shift from a functional trip that has to be predictable to a pleasant experience in which passengers want to be surprised. Next to that, passengers seemed to not care that much about dissatisfiers when they are in an excellent mood.

Improving Evaluation Tools

Several studies have been performed to find out how these response rates could be improved. Some of them looked into the recruitment methods as a factor. One option that was investigated was the use of pre-notification before sending the survey itself. Results showed that pre-notification through email had a notable increase in response rates, while pre-notification through phone calls had little effect [8]. Other studies explain that the low participation rates could be caused by the large amounts of surveys and questionnaires (mainly marketing surveys) a participant gets exposed to in their current everyday lives. So much survey information that comes in through email or phone might be considered junk and end up with the rest of the discarded messages from commercial sources. This amount creates additional barriers to considering participation [8].

Some other studies took the factor of pre-notification a step further and applied personalised pre-notification into their surveys. Although it allowed for a higher participation rate, the personalised pre-notification did not affect the response rates all that much (49 per cent for the pre-notified group and 45 per cent for the non-notified group) [3]. However, the personalisation aspect seemed to be interesting since another study used personalised feedback in web surveys to see whether it would motivate participants more for upcoming surveys. Results showed moderate differences but a much larger satisfaction level among participants after receiving the personalised feedback [4].

Exploring Uses of Memes

But creating the opportunity for participants to deliver more personalised input within surveys is left relatively unexplored. Memes could be used for an interesting opportunity since they have already been used for several different purposes within both the design and research community. According to the Oxford English Dictionary, a meme is defined as: "an element of a culture or system of behaviour passed from one individual to another by imitation or other non-genetic means". Memes can cover an extensive range of topics, often with a sense of humour. Currently, memes are mainly used as a combination of humour and self-expression/reflection [9]. The term 'meme' was also already used in 1976 by a biologist named Richard Dawkins. He explained it as "unity of human culture that is transmitted from person to person, changing and evolving in the passage, while at the same time maintaining its identity and recognizability, like a tune or a catchphrase" [17].

This definition is more related to sayings, proverbs and the general use of metaphors in language overall. Metaphors are wordplays that help explain an abstract concept or put more meaning behind a statement [7]. For example, comparing one thing to something else in an abstract way can be seen as a metaphoric comparison, which is the core of object labelling in image-based memes [10]. The use of metaphors in design isn't new. For example, the research of [5] used metaphors "to design a workshop method for generating ideas and reframing problems in design and beyond" [5].

One study performed by Terzimehic et al. [13] already explored the usage of memes as a reflection tool. In their study, they built an online meme-journaling app and compared its effectiveness to regular diary text entries for reflection on daily events [13]. The goal of this research was to implement a sense of humour into the journaling process. This was done through the use of memes. Despite being considered more challenging to perform, results showed that meme-journaling was significantly more enjoyable than written diary-journaling.

Nonetheless, memes seem to be suitable for expressing one's experiences without thematic limitations [13].

Using memes as a way of doing research can explain a design or let participants express themselves better. In addition, memes can be used to allow two parties to communicate with each other. For example, in the research from R. Biggs et al., GIFs communicate new ideas to users [11].

Similarly, another research investigated an unexplored application of memes. This time, memes were used to enrich otherwise boring curricular mathematics classes. The use of visualisation through mathematical memes could potentially make the learning of math more interesting and less formal, motivating students more [17]. The workshop discussed in this research shows that a creative element such as memes can be implemented in many otherwise dull fields, even mathematics, politics and more. This correlates with the use of memes on the internet, as they are already used to express many different events, including political events.

Conclusion

So the related works show that researchers are already discovering new uses for memes, including journaling and educational uses. However, it would be interesting to build further on this existing research and investigate how memes could be used as an evaluation tool. As said before, this has been left relatively unexplored. So this study will try to implement this new evaluation method in a design and research setting as a new direction for the usage of memes.

PROTOTYPE

Design of the prototype

As a prototype for this study, an independent meme creating and sharing platform was constructed. On this platform, participants can create their own memes about their experience and view the memes created by others at their location, essentially creating a contained online meme community specific to the waiting zone. This

platform could be accessed by scanning a Q.R. code at the particular waiting location.

As the platform is new and unused, it is essential that people know it is there and can find it. Therefore, attractive stickers and flyers have been created containing the Q.R. code leading to the digital platform (see figure X). The stickers were designed to reveal what people can put on the platform and show the usage of memes. Multiple stickers have been created, as one might be more appealing to one person than the other.

The digital platform

The digital platform is a browser-based application designed from scratch to be used on mobile phones. Participants scan the Q.R. code and are presented with a choice between viewing memes or creating their own memes.

When participants choose to create a meme, they are presented with the meme template selection. Templates have been selected to fit the study's needs and the limitations of the platform. The templates were chosen according to a mix of relevance, universality and ease of use in the meme creator. Participants express themselves by choosing a relevant template and adding their own caption. Then, when they decide to upload the meme, it is posted to the online platform where others can view it.

When participants choose to view the memes, they are presented with all the other participants' memes. The participant can engage with the memes by pressing the 'like'-button. The amount of likes indicates what memes are the most popular. By implementing browser-cookie functionality in the platform, participants can like a meme only once.

Design principles of the prototype

A: Ease of use

This platform was designed to be easy and quick to use, lowering the barrier to creating memes as much as possible. Therefore, the platform's functionality is limited to 'creating', 'viewing' and 'liking' memes. When creating

a meme, the participant is presented with a limited number of meme templates (14) that each has its own type of meme format to reduce choice paralysis.

The object-relabelling memes were considered templates because of their inherent clarity. However, for the platform's simplicity, text in the meme creator could only be inserted in fixed positions at the top and bottom of a meme. This ruled out a lot of object-relabelling templates because they require text to sit exactly on top of the objects in the image to make sense. Eventually, the following two types of templates were used: object relabelling templates that coincidentally had objects loosely at the top and bottom of the image (see Figure:

2.1, 2.4, 2.7, 2.9, 2.10, 2.12, 2.13), and reaction memes to a white bar prompt on the top (see Figure: 2.2, 2.3, 2.5, 2.6, 2.8, 2.11, 2.14). Before deploying the prototype, the researchers created and placed several memes with the provided templates to motivate others to participate in meme creation.

B: Universality

The second design principle that was considered for this prototype was universality. This mostly came up in the selection of meme templates. The meaning and dynamics of the memes were a significant component in the choice of templates. The templates had to be understandable at first glance to people who don't usually create memes while at the same time still being decently relevant and

popular to people who are familiar with making memes. This meant using a lot of popular, standard reaction faces as opposed to more intricate memes that reference "internet lore".

Ideally, the templates picked for use on this platform contained both of these possible use interpretations in one. Take, for example, the Squid game face (see Figure: 2.5). For someone without further knowledge, simply a template with a funny face anyone could relate to in several ways. For someone with a more in-depth understanding of the show, this meme references; a specific and topical template to vent frustrations about its underlying themes. This way, the platform could be accessible and fun for both novice and experienced meme makers.

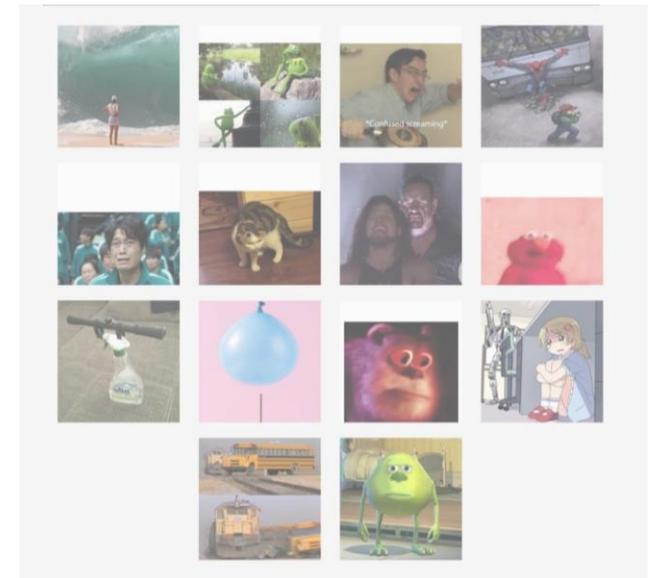
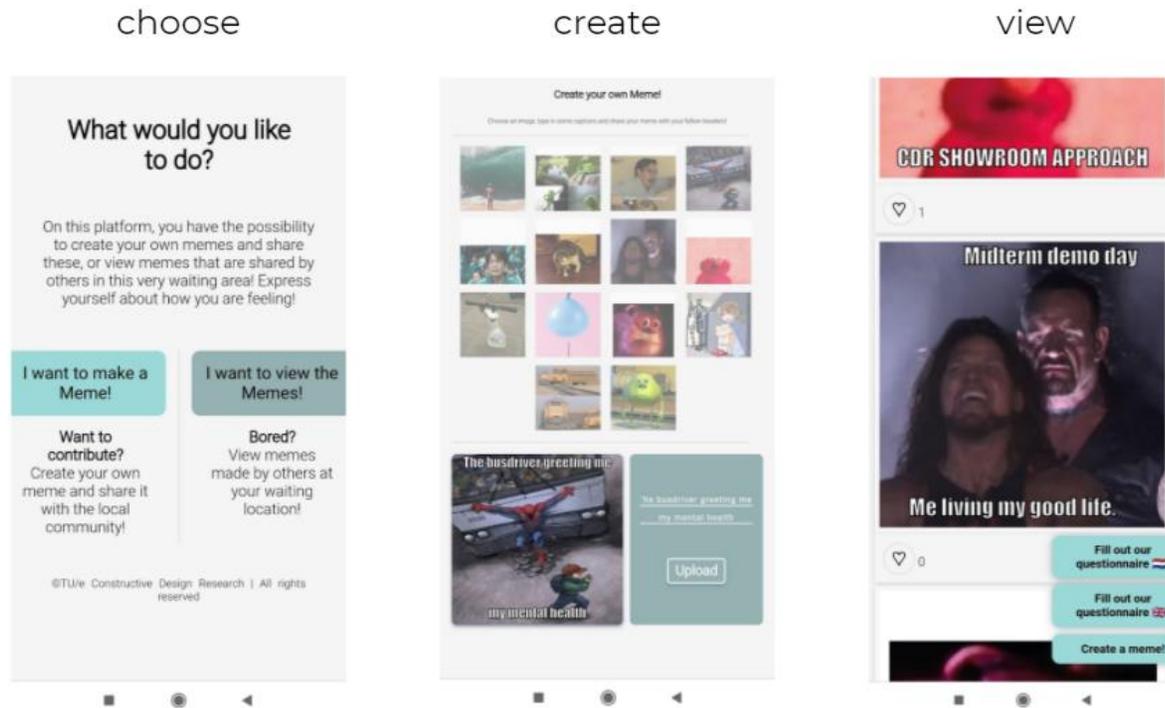


Figure 2. Template selection

Figure 1. The different views of the website

C: Relevance

Relevance to the context of the waiting environments was also a design principle that was important to adhere to. However, the templates themselves are not all relevant to the context of waiting because that activity itself does not require much description. For example, one template intentionally invokes the idea of waiting, e.g. the Kermit meme (see Figure: 2.2). Still, since memes allow people to express their boredom in other creative ways than the standard, the other memes were left as ambiguous reaction images.

Expectations

The expectations for the possible memes people would create with this prototype was quite broad. The idea was that people would most likely create slightly negative reaction memes referring to the surrounding environment and the service. It was also expected that people would make some mistakes in their memes and publish them too early or not fit the text inside the box.

METHOD

As mentioned in the previous section, a platform was built, serving as a research tool. The study took place in context to explore how people can evaluate their current experiences on our platform. The goal was to know how people would respond rather than how they thought they would react when it was there.

As explained in the previous section, stickers with Q.R. codes were used to attract participants to the platform. All stickers have different Q.R. codes to gather when and how many times each sticker has been scanned. When scanning a sticker, the participant is notified that they are participating in a study when entering and interacting with the platform. Only when consent is given the participant will proceed to the platform. Whilst the stickers are placed in the field, the researchers kept an eye out digitally, monitoring the number of scans, the content of the memes and the likes. In this way, the researchers could see if the platform was used actively, and inappropriate memes could be deleted if needed. Next to that, a researcher would stop by at the location every hour

to make sure the stickers were still there and did not cause any harm.

The study's target audience are people who have the urge to express their feelings and/or frustration and are in a state of boredom created through the environment they have to wait in. The study has been conducted in three different environments.

There are three ways in which data is collected throughout the study. First of all, the platform stores how many people access the platform, what QR-code they scanned and at what time, giving insights about what location and type of sticker is most effective. Second, the online platform stores the memes created on the platform, which can be thematically analysed to gain insight into the participants' experience. Also, the number of likes given to each meme is stored; this generates data on how popular each meme is among the other participants. Lastly, a link to a questionnaire was presented on the website's homepage. The participants were asked about their experience with the platform and comparing it to existing user satisfaction tools. This contained questions related to what, where and how long they are waiting, their satisfaction with the platform, whether it helped them express themselves and what they think of it in comparison to other methods of satisfaction evaluation.

Environment A - Bus station

The first environment in which the study has been conducted is at the bus station at Eindhoven Central Station. This location has been chosen as it is often a busy location in which a large group of people has to wait at the same time. This waiting experience is often rated as unpleasant and frustrating [15].

Multiple stickers have been placed on the pillars at the bus stop at 8:00 AM. The stickers are as big as an A4 paper to make sure they are clearly visible. After a few hours, there still was not that much activity on the platform. Therefore, it had been decided to hand out flyers to people at the bus station. These flyers were precisely the same as the stickers. The researcher

explained a bit of the study to the participants and asked them to scan the Q.R. code and take a look. At around 4:00 PM, all stickers were removed from the station.

HOW WAS YOUR TRAIN RIDE?



TELL US ABOUT IT:



Figure 3. G.R. code used in environment A



Figure 4. Stickers in environment A



Figure 5. Sticker in environment B, inside an elevator



Figure 6. Sticker in environment B, outside elevator

Now it's your turn!
Evaluate our presentation with a meme!



Figure 8. Q.R. code in environment C



Figure 7. Slide used to present the prototype

Environment B - Elevator

As the activity on the platform was not as high as expected, it had been decided to do a second round at a different location and with different stickers. This time the elevator in a building at the university had been selected as a waiting environment. The stickers were placed on three different floors and inside three different elevators around 3:00 PM and were removed around 10:00 AM the next day. However, some of the stickers had already been removed by cleaners or security before the end of the study.

Environment C - Presentation

This research is part of a course at the Technical University of Eindhoven. The Q.R. code was shown during the final presentation of the study in a lecture room

with fellow students, where they were asked to review the experience of our presentation on our platform.

RESULTS

In total, there are 17 memes made. In total, 39 likes were given, which is more than two times the amount of posted memes (see Figure 11). Graph 10 shows how many were made in which environment. It must be taken into account that one meme was placed twice in environment B, and one meme was labelled inappropriate. Therefore only 15 memes remain. Most memes are made in environment C and the least amount in environment A.

The number of times the Q.R. code was scanned is a little higher - a Q.R. code scan was only registered after the person also accepted the terms of the study. Different QR



Figure 9. Memes created in each environment

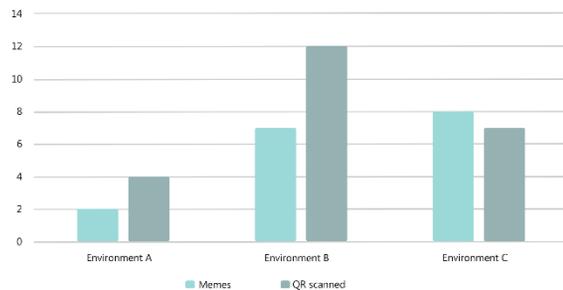


Figure 10. Amount of memes created and Q.R. code scans in each environment

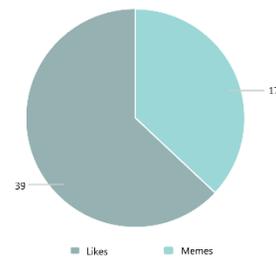


Figure 11. Amount of likes against the amount of created memes

codes were used and placed in various spots in the environments. However, no pattern could be found when analysing this data. The total amount of scans is 23 times. Thus, making the complete response rate, 15 made memes out of 23 scans, a percentage of 65. Graph 9 shows the response rate per environment. The highest amount of scans was in environment B. However, the highest number of memes made was in environment C.

The questionnaire had two responses of which twice the Dutch questionnaire. Making that a response rate of 8,7 percent out of the total page visitors. The participants who filled in the survey were divided about using memes as an expression method to give back feedback. One thought it was easier and the other found a 1 to 5 scale easier. There was also a division about how making a meme helped with expressing the travelling experience. One person thought it didn't help giving it a 1 point and the other persons gave it 4 points indicating that it did help to express their travelling experience. Yet they both found the use of memes a pleasant way to express complaints - giving it a "personal twist" as one participant described.

DISCUSSION

Activity on digital platform

The results indicate a correlation between the number of QR-codes and created memes. The data suggests that the number of created memes is always higher than 50% of its corresponding scans. However, this does not mean the number of created memes is always lower than the number of Q.R. scans, as seen in environment C (see figure 10). The lack of scans can be explained by the fact people went directly to the platform instead of scanning the Q.R. code first. For example, people had their laptops out in environment C and could have gone to the website without scanning the Q.R. code. There is also the possibility that one person made multiple memes. Due to a platform's design flaw and ethical privacy reasons, there is no way to trace how many memes one person made. This may explain the response rate of 114 per cent of environment C. However, the overall results show that most people like to use the platform without making a

meme themselves, also known as a passive user, which can be seen on many social media platforms [14]. Unfortunately, due to a design flaw in the platform, only the dates of the last given like is visible. Therefore, it is not traceable when every like is given.

Context and participation

The difference between the environments shows a big difference in the users' interest in the platform. The bus station was the least popular. A plausible reason for this might be that people are still on the move at the station, which is different from the elevator. Thereby, scanning a random QR-code is something that requires a certain amount of action and decision-making. For this reason, another argument could be that the number of people in the user's surroundings could influence the comfort of the user and the decision to scan or not. Another factor could be the kind of people you are surrounded with; people in an elevator are more likely to know each other or belong to the same 'kind' of people, like students that belong to the same education or coworkers for the same company. A bus station is, in general, more crowded than an elevator. It can also be assumed that someone uses an elevator several times a day; people were exposed more often to the Q.R. code compared to the bus station. Therefore, there are many reasons why the Q.R. code wasn't scanned.

User evaluation tool

The study demonstrates that memes can indeed be used as a visual evaluation tool to express thoughts and opinions that can be used to evaluate quality evaluation. Most of the created memes were within the expectations that were previously mentioned in the description of the prototype, venting frustration about the surrounding environment and services. Some noticeable mistakes were also made, for example; one meme was published twice in exactly the same format and one meme had no top or bottom text. However, the majority of memes were made in the intended way.

The meme data shows a wide range of expressions. This goes from actual annoyances like; "People talking in the

train, me that wants to rest." to more humorous text as; me pretending to be inspired from these presentations". For that matter, the study demonstrates that memes do help with expression. Based on the exciting memes on the internet, it was expected that the platform could attract users to use swear words, to be offensive or targeted on a personal level. Surprisingly neither of those things happened.

Platform experience

The link to the questionnaire was used only twice. Reasons for this might be that the user was overwhelmed by the number of steps to fill in the questionnaire, the questionnaire was not clear enough, or the way to get to the questionnaire was not appealing enough. The opinion on the use of memes as a review method was divided, with one person preferring a 1 to 5 Likert scale. However, they both agreed that memes were a pleasant way to express complaints.

Future studies

It is worth mentioning the data that is obtained during the study is very minimal. The testing phase was relatively short and consisted of 2 days, so it better be seen as a pilot study. However, due to the lack of data, it is highly recommended to do a follow-up study because the memes created by participants do contain rich evaluation data. The study in this paper elaborates more on the environment and not so much on the interface or interaction of the platform. A suggestion is to use calmer waiting environments, where people have more time to find and use the platform. At the same time, it is suggested to test for a longer period of time.

The developed platform is a good base for future studies; however, it has some flaws. First, the users have the option to open the platform via different ways. This has resulted in a reliability flaw during the presentation environment. Therefore it is recommended to limit the way to get to the platform to scanning only. A second imperfection is the lack of information considering "tracing back data", the current application does not show the amount of memes one person has made. Due to

the very low response rate of the stickers it is advised to do further research on "luring forms" and to make the actual scanning part more attractive and notable. A future study that could be taken into account is the potential method to use this platform to evaluate design elements instead of the user experience. A final proposal that could add more value to the overall purpose of choosing this experience evaluation over others, is to compare this method to exciting user evaluation methods. For example, in terms of complexity and nuance.

CONCLUSION

In this study we researched the question: How could a meme platform be used as an evaluation tool? This research shows that memes have a great potential to be used as an expression tool for giving feedback. The results contribute to a clearer understanding of the potential of memes as an effective evaluation tool. This pilot study of only two days had a response rate of 65 percent, which is even higher than the response rate of face-to-face surveys who generally have the highest response rate. The platform has been tested in three different environments: the bus station, elevators and during a presentation. The study demonstrates a relationship between the environment, user experience and expression. However, one clear reason for this can not yet be given due to the questionnaire's lack of participation and response. The platform that was developed during this study has, despite some design flaws, great potential to be used as a base for future research with the same topic and can be used in calmer waiting areas.

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