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21 - 22 June 2018**



**Edited by
Prof. Vincent Cunnane and Dr Niall Corcoran**

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Giving and Taking Gratifications in a Gamified Social Live Streaming Service

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Abstract: Introduction. The use of game design elements in non-game contexts has already attracted attention from many companies and organizations. This phenomenon called “gamification” is known for increasing one’s engagement, motivation and activity. Even social media platforms have already applied it. One emerging kind of social media that applies gamification elements are social live streaming services (SLSSs). On SLSSs, users are able to broadcast their own program while interacting with spectators via chat messages. This investigation has the SLSS YouNow as a case study. On YouNow, viewers are able to bestow streamers with certain gratifications (e.g. gifts). Are users motivated by the function of receiving and giving gratifications? Are these functions considered as funny, useful, motivating and as a reward? Is there a difference between the action of giving and receiving something? Method. The uses and gratifications theory by Blumler and Katz as well as the approach of differentiation between gratifications sought and gratifications obtained by Palmgreen, Wenner and Rayburn were applied to a model of information behaviour on social live streaming services. Additionally, we made use of the Technology Acceptance Model (TAM) as well as the Information Service Evaluation (ISE) model. Based on the different theoretical backgrounds, an online survey was conducted on umfrageonline.com. It was available in five different languages and had 211 YouNow users as participants. Results. The users of YouNow enjoy the gamified functions of receiving likes, getting fans, and gifts more than giving likes, gifts etc. The most motivating element to continuously apply YouNow is getting fans. Every element is at least considered as neutral but mostly they are highly positive. The game mechanic of capturing moments is the least popular. Discussion. YouNow offers many gamification elements, which are well received by the users. Obviously, users of YouNow are highly motivated and amused by the gamified functions. They rather like to get gratifications for their efforts than to gratify someone else.

Keywords: Gamification, Social Live Streaming Service, Uses and Gratifications, User, YouNow

1. Introduction

Gamification has become a central part of the modern society. The aim of gamification is to achieve the influence and change of users (information) behaviour (Zichermann and Cunningham, 2011). Deterding (2012, p. 14) explains that “gamification’s guiding idea is to use elements of game design in non-game contexts, products, and services to motivate desired behaviors”. It is already used in many mobile applications as well as social media services (Deterding et al., 2011). But what is *gamification*? – *Game* (or gaming), like in “gamification”, has to be differentiated from the idea of *play* (or playing). Games, and gaming in general, make use of challenges, are denoted by exact rules, and are goal-oriented (Salen and Zimmermann, 2004). However, playing is mainly based on the idea of improvisation. Furthermore, gamification is associated with elements that are characteristic to games, and not considered as a full-fledged game. Another potential alternative for the idea of “gamification” would be the term “gameful design” (Deterding et al., 2011).

One to some extend new kind of social media applying game mechanics and dynamics are social live streaming services (SLSSs). Here, users are able to broadcast their own live videos by using the webcam of a computer or the camera of a mobile device (e.g. smartphone or tablet). The audience can interact with the streamer in real-time via chat messages and may react with likes or other rewards, such as gifts. As everything happens in real-time, live-streaming services are synchronous social media, in contrast to asynchronous social media, like Facebook, Instagram, or Twitter. There are some topic-specific live streaming services like Twitch (games) or Picarto (art) and general live streaming services as YouNow, Periscope or Ustream (Scheibe, Fietkiewicz and Stock, 2016). Following Friedländer (2017a) as well as Scheibe, Zimmer and Fietkiewicz (2017) YouNow’s users are highly motivated by the applied gamification elements of the service, therefore it was considered as case study in this investigation.

Scheibe, Fietkiewicz and Stock (2016) have investigated a model which shows the information behaviour from users in a synchronous social network service. We have modified this model for a gamified social live streaming service and added several theoretical aspects (Figure 1).

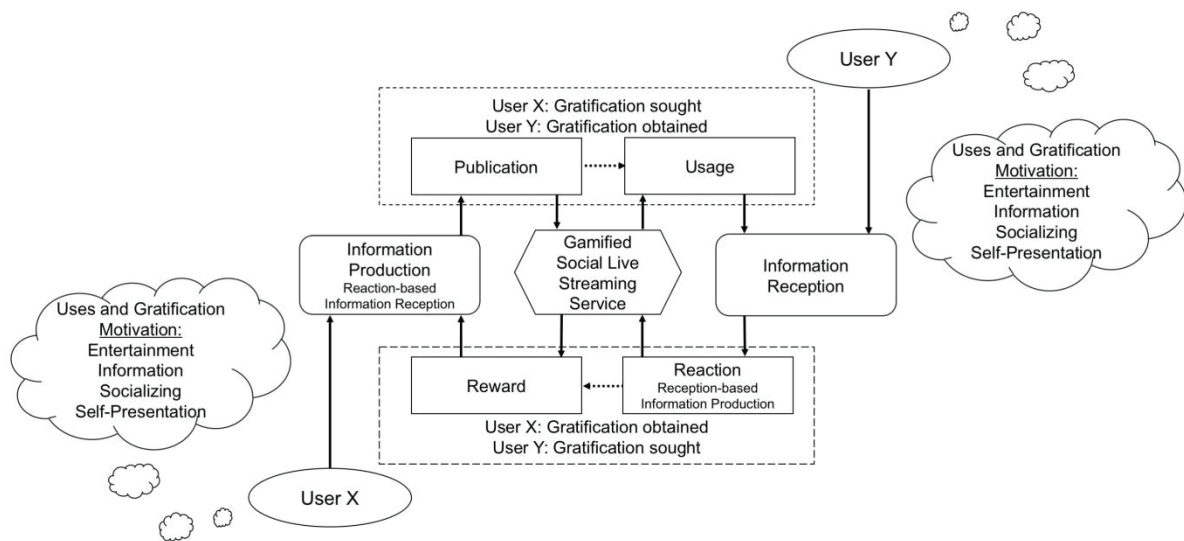


Figure 1: User information behaviour model in a gamified SLSS (Modified from Scheibe, Fietkiewicz and Stock, 2016, p. 9)

Beginning with Lasswell's communication theory (1948, p. 216) and the central question: "Who says what in which channel to whom with what effect?", Lasswell's described process is presented in the modified model. User X ("Who says?") produces a publication (live stream) ("what") in the gamified SLSS ("in which channel"), user Y ("to whom") might use and watch the live stream, receives information and will, perhaps, react to this ("with what effect"). But what makes users continue the usage of such social media services?

Mentioning the uses and gratifications theory by Blumler and Katz (1974), the use of media is guided by need satisfaction and search for gratifications. It is also goal directed (McQuail, Blumler and Brown, 1971) and "shaped by [...] definite expectations" (Katz, Blumler and Gurevitch, 1974, p. 511). There are several motives which lead users to use media. McQuail (1983) summarized at least four central motives for media use, namely entertainment, information, personal identity, and social interaction. Shao (2009) distinguished the different motives by the action of consuming, participating, and producing. Consumers (only reception without reaction) use social media for information and entertainment. The goal of participants (reception with reaction) is information and entertainment, and additional social interaction (socializing). Finally, producers (i.e. streamers in SLSSs) in social networks are generating content additionally for self-expression and self-actualization (or self-presentation). Palmgreen, Wenner, and Rayburn (1980) discussed the aspects of gratification sought and gratification obtained in relation to the uses and gratifications theory – "since a gratification is sought it must necessarily be obtained" (p. 183). Thus, uses and gratifications are related to different information production and reception behaviours.

In Figure 1 user X and user Y are searching for gratifications through entertainment, information, socializing, and self-presentation. Producers are interacting live (in many cases, in front of the camera) with their recipients, streamers are additionally reading the chat messages (consuming) and may respond (participate) immediately. YouNow offers recipients the opportunity to be a guest in a stream, which indicates the same motives for recipients as for producers. In the model, gratifications are sought during publishing as well as during reading comments, respectively watching streams. The streamer (user X) is producing content in a stream and searches for gratifications; gratifications are obtained for user X (consumer or participant) at the point of usage. For user X, the gratifications are obtained at the point where another user reacts to her or his stream. The reaction leads to gratification obtained for user X and to gratifications sought for user Y.

Gamification may have an effect on the user's motivation as well as his or her behaviour. Based on the model shown in Figure 1 the following research questions (RQs) are answered in this investigation:

- RQ1: To what extent are gamification elements on SLSSs considered as funny, useful, motivating and rewarding?
- RQ2: What are the differences between the actions of giving and receiving gratifications?

Figure 2 shows a live streaming session on YouNow. The gamification elements examined in this investigation are marked. On YouNow are even more gamification elements, e.g. coins, badges, and rankings, which are not considered as research objects in this investigation. The live stream is placed in the middle of the website. On the right side a “Top Fans” ranking is displayed, as well as the chat-box where users can write chat messages and bestow the streamer with gifts. A user can also see the amount of coins and bars he or she has collected.

Coins are one of the virtual currencies on YouNow; one is able to collect them through several site activities. Users are able to buy (standard) gifts with coins. In contrast, bars (the other currency) have to be bought with real money. With bars users are able to buy premium gifts. In the other tabs on the right side one can see the usernames of the audience and users who are requesting guest sessions with the streamer. Above the livestream one can see the profile picture, badges (if available), the streamer’s nickname as well as the profile information of the broadcaster. In addition, there is the fan and subscribe button. Fanning is like becoming a friend on Facebook or like the following function on Twitter and Instagram. To become a subscriber one has to pay a monthly fee. As a subscriber you have special features like badges and gifts as well as the opportunity of a secret chat with the streamer you subscribe to. Placed under the stream one can see (left to right) the given likes, shares as well as captured moments, the streaming time and the number of users watching. On the left, the “Trending Now” ranking as well as a list with friends that are streaming at the moment are displayed. Furthermore, a ranking with trending tags is listed.

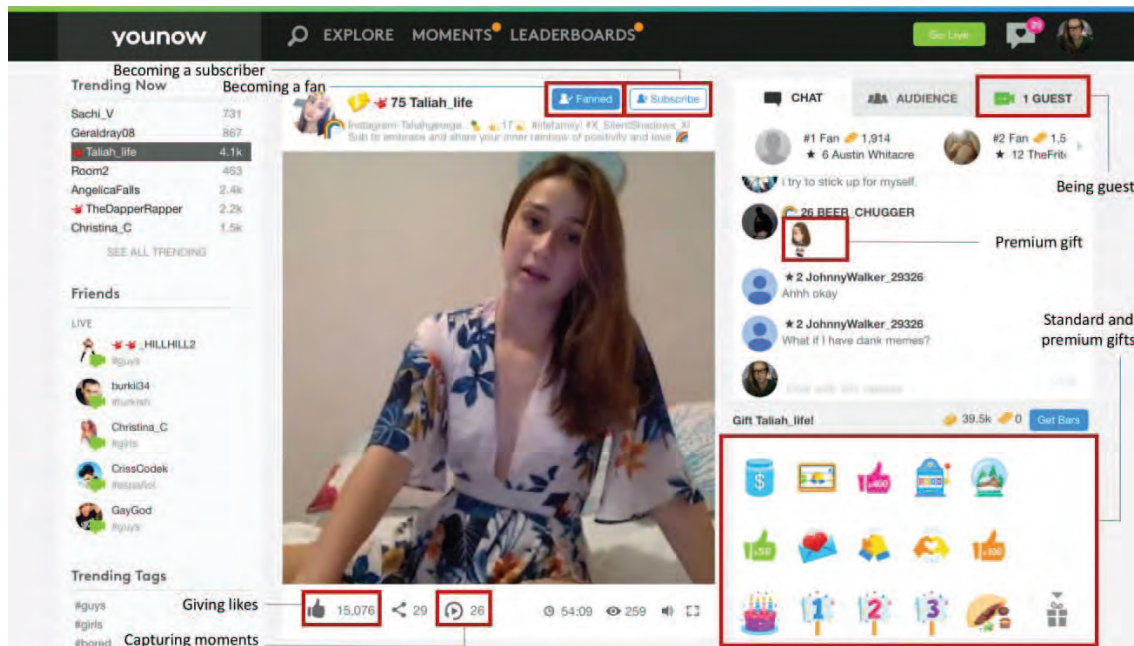


Figure 2: A livestream on YouNow with gamification elements marked

There are already some investigations about the topic-specific live streaming service Twitch (e.g., Kaytoue, 2012; Gros et al., 2017) as well as some about general live streaming services. Among these, we detected two investigations on potential law infringements (Honka et al., 2015; Zimmer, Fietkiewicz and Stock, 2017), one about user-generated content and the streamer’s motives (Friedländer, 2017b), papers about the evaluation of SLSSs having YouNow as a case study (Fietkiewicz and Scheibe, 2017; Friedländer, 2017a), and a paper on information behaviour of users of SLSSs (Scheibe, Fietkiewicz and Stock, 2016). Furthermore, Wilk, Wulffert and Effelsberg (2015, p. 405) investigated how gamification influences the user behaviour of mobile live video broadcasting users. They developed a live streaming mobile application in three different versions: First, the base version, second, a version with levels and a level process overview, and finally, the second version expanded by the opportunity of challenges and the collection of badges. Each version was evaluated by

different users. The users were significantly more motivated by the gamification elements and spent more time with the system when more gamification elements applied.

2. Method

Based on our theoretical frameworks, an online survey was developed and distributed on umfrageonline.com. It was accessible from 30th August 2016 until 13th March 2017. Following the top five browsing locations of YouNow (Alexa, 2016), the survey was available in English, German, Spanish, Arabic, and Turkish. After checking the survey data, the answers from 211 YouNow users were left.

At first, the attendees had to answer if they are a user of YouNow and what they use YouNow for. The options to answer were “Only streaming”, “Only watching streams”, “Both: streaming and watching streams”, or “I do not use YouNow”. Either the attendee was only acting as a recipient (only watching streams), only as a producer (only streaming), or as both, recipient as well as producer. If the attendee chose “I do not use YouNow”, the survey was finished. The following questions were filtered depending on the status of the participant. Most survey items consisted of pre-formulated statements about each gamification element and a depiction of this element. For the statements, a 7-Point Likert Scale (Likert, 1932) from (1) “totally disagree” to (7) “totally agree” was prepared, which allows choosing a neutral (4) option. The 7-point scale was chosen in order to achieve a finer granularity of results than, e.g., a 5-point scale. Each game mechanic was evaluated concerning four aspects:

- Fun (theoretical justification: Information Service Evaluation model – Schumann and Stock, 2014; Deterding et al., 2011),
- Usefulness (Technology Acceptance Model – Davis, 1989),
- Motivation (Zichermann and Cunningham, 2011; Deterding et al, 2011),
- Reward (Zichermann and Cunningham, 2011; Blumler and Katz, 1974).

All other questions could be answered by “Yes”, “No”, or “Prefer not to say”. At the end the survey attendees were asked about demographics (age, gender, and country). To make a comparison of the results we could only use the data all attendees had answered (Both: producer and recipient) for this research. Therefore, the N of the data is lower than 211 and varies, but after all a trend can be seen in the answers.

Since the data is ordinal scaled (and, additionally, do not form a normal distribution), we decided to work with the median and the interquartile range (IQR). In order to statistically analyse the differences between giving and receiving something we applied the Wilcoxon test. We used the usual three thresholds, namely one star (*) for 95%, two stars (**) for 99%, and three stars (***) for 99.9% probability as well as “ns” for “not significant”. All calculations were performed by the help of SPSS.

3. Results

Our results show the differences between the actions of receiving something and giving something as well as the differences between the aspects of fun, usefulness, motivation and reward.

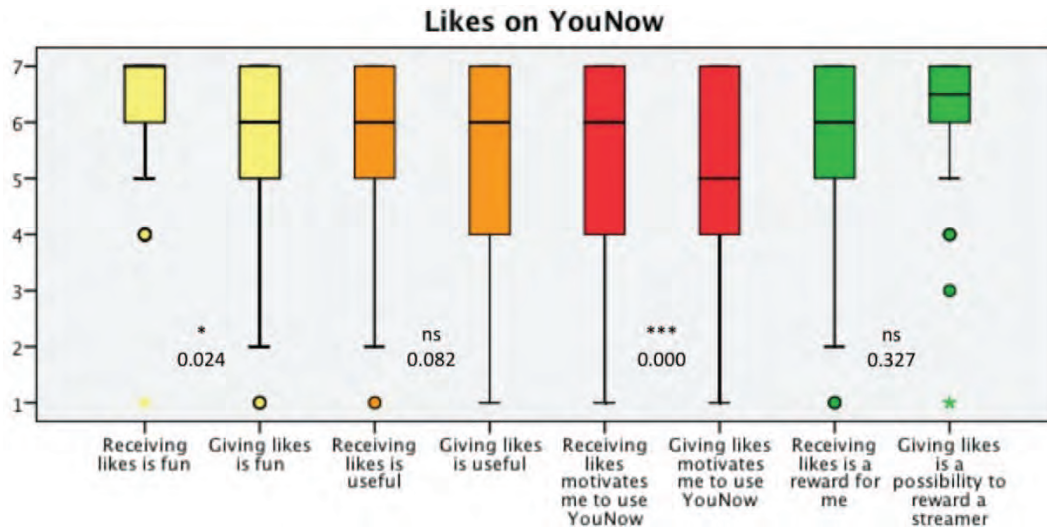


Figure 3: Difference between receiving likes and giving likes (N=62)

3.1.1 Gamification element: Likes

Figure 3 shows the different user estimations regarding the likes. It strikes that the action of receiving likes is always slightly better than giving likes. For the aspects of fun (*) and motivation (***) the differences are even statistically significant, both in favour of receiving.

Receiving likes is fun, has its maximum as well as its median at 7 and an IQR of 1, from 6 to 7. Giving likes has the median at 6, what displays that only 50% rated it as very funny to give likes and the IQR equals 2 (yellow boxplots). Whether receiving likes as well as giving likes are useful, is rated with a median of 6 each (orange boxplots). But looking at the IQR, it stretches from 5 to 7 for receiving likes and from 4 to 7 for giving likes.

Considering the boxplots associated with motivation (red), the IQR of both boxplots, receiving as well as giving, are the same. But taking a look at the median, it is 6 for receiving likes and only at 5 for giving likes. Here, the result is clear: Receiving likes is (statistically very significant) more motivating the giving likes. Coming to the green boxplots, if receiving likes is a reward for one, or giving likes is a possibility to reward another streamer. The median of the boxplot, showing the case of receiving likes, is at 6, while the one of giving likes has its median at 6.5. Also the IQR is different. The receiving side has the IQR from 5 to 7 and the giving side from 6 to 7. Therefore, the users think that giving likes is more a reward for a streamer than for themselves.

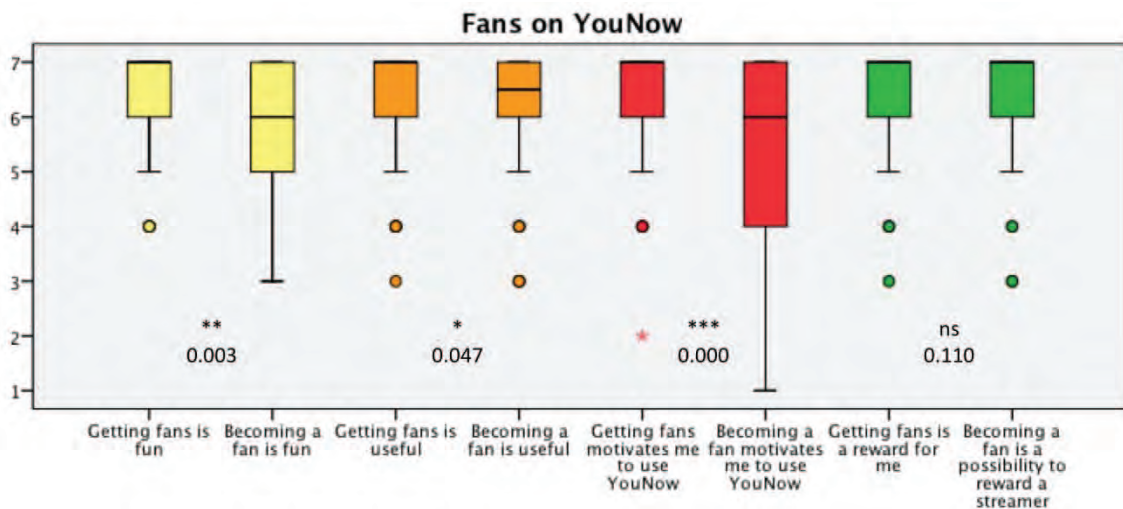


Figure 4: Difference between getting fans and becoming a fan (N=62)

3.1.2 Gamification element: Fans

The aspect of getting fans and becoming a fan (Figure 4) exhibits three (out of four) statistically significant differences – again, all in favour of getting something. It is funnier to get a fan than to become a fan (**), it is more motivating to get fans than to become a fan (***); and, finally, it is considered as more useful to get fans than to become a fan (*).

Considering the fun of actions of getting fans and becoming a fan, getting fans has its IQR from 6 to 7 and the median at 7. Becoming a fan's IQR goes from 5 to 7 and its median is at 6. Therefore, getting fans is more fun for the users of YouNow (**). Coming to the usefulness of fans and fanning, both graphs have its minimum at 5 as well as its IQR from 6 to 7. However, the median is on the left side at 7 (getting fans) and on the right side (becoming a fan) at 6.5 (*).

When it comes to motivation, getting fans has a median of 7; the IQR ranges from 6 to 7. Becoming a fan has its IQR runs between 4 and 7; the median is at 6. Getting fans is perceived as more motivating than becoming a fan (***). Both, "getting fans is a reward for me", and "becoming a fan is a possibility to reward a streamer" show the same (very positive) results (median: 7; IQR: 1).

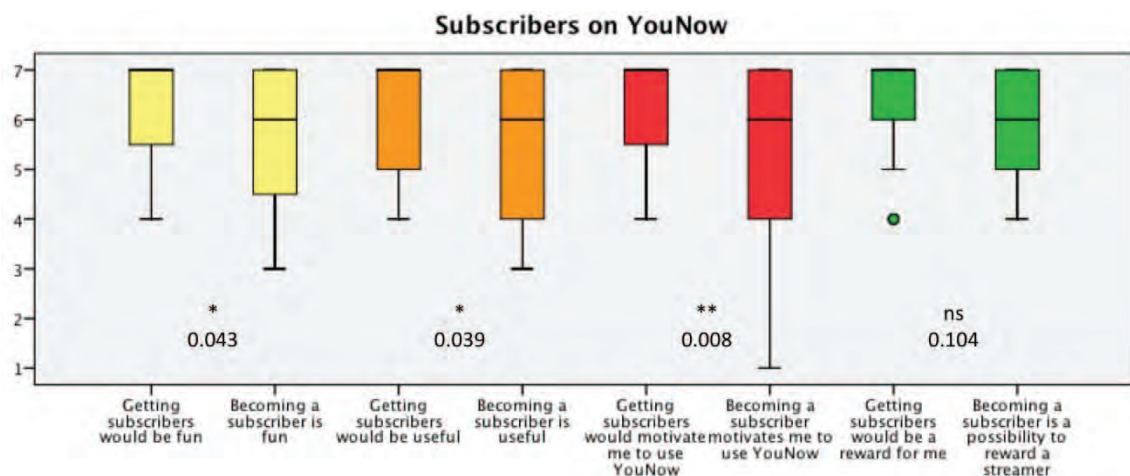


Figure 5: Difference between getting subscribers and becoming a subscriber (N=36)

3.1.3 Gamification element: Subscribers

It seems to be always the same story. If it comes to statistically significant differences between (passively) getting something and (actively) giving or becoming something, the getting aspect shows the higher values. Concerning subscribers (Figure 5), it is funnier to get subscribers than to become a subscriber (*), it is more useful (*) and it is more motivating getting subscribers than becoming a subscriber (**).

Concerning the fun of getting subscribers and becoming a subscriber, the median is 7 for getting, and only 6 for becoming (*). Also the IQRs differ from 5.5 to 7 (getting) in contrast to from 4.5 to 7 (becoming). The usefulness of getting subscribers and becoming a subscriber differs in the median (7 and 6) and in the IQR (5 to 7 versus 4 to 7), leading again to a significant difference (*).

The motivating aspect of getting subscribers has its median at 7, the one for becoming a subscriber has its median at 6 (**). The IQR from getting subscribers runs from 5.5 to 7; the IQR for becoming a subscriber has its IQR from 4 to 7. Getting subscribers is motivating the users more than becoming a subscriber. Getting a subscriber is indeed a reward for the user (median: 7), and becoming a subscriber is a possibility to reward a streamer has a median of 6.

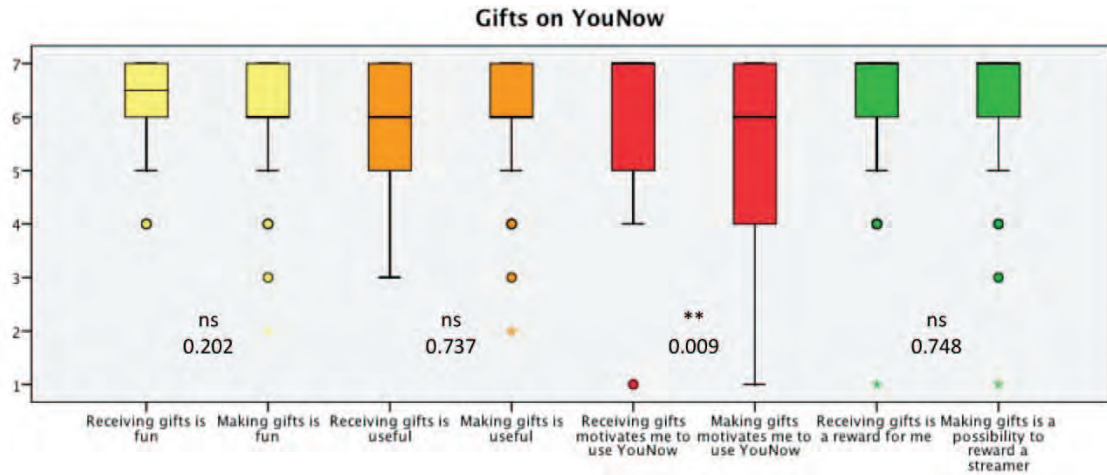


Figure 6: Difference between receiving gifts and making gifts (N=50)

3.1.4 Gamification element: Gifts

Analysing gifts (Figure 6), the only statistically significant difference is the motivational aspect. Receiving gifts is considered as more motivating than making gifts (**).

Receiving gifts is slightly funnier (median 6.5) than making gifts (median: 6). There are no statistically visible differences between the usefulness of receiving and making gifts as both actions have their median at 6.

The motivational effect of receiving gifts (median: 7; IQR: 2) is more distinctive than the effect of making gifts (median: 6, IQR: 3). The last two boxplots show the results of the statements for the rewarding factor. These ones are nearly the same; both have its median at 7 with an IQR 1 as well as its minimum at 5.

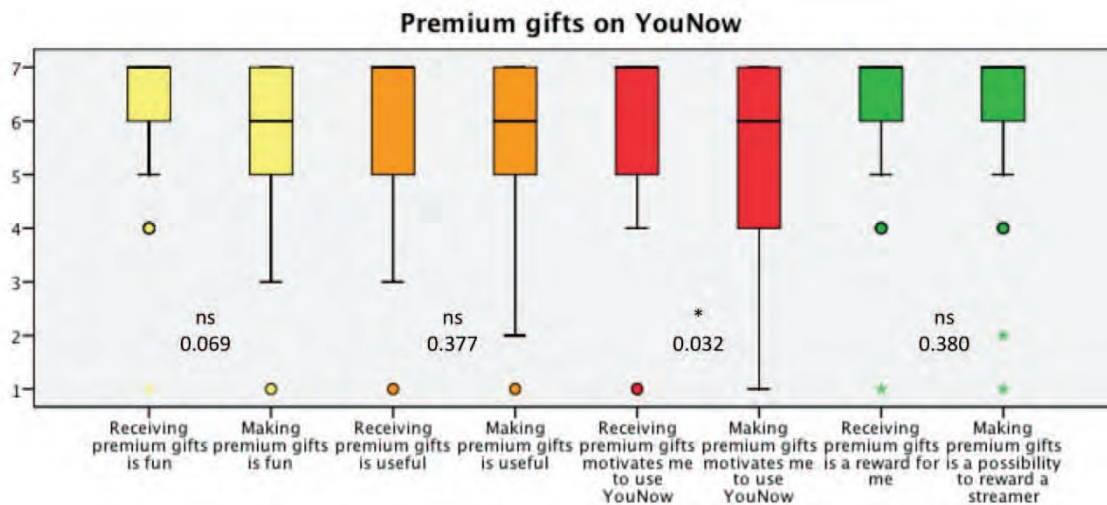


Figure 7: Difference between receiving premium gifts and making premium gifts (N=42)

3.1.5 Gamification element: Premium gifts

Similar to “normal” gifts, receiving premium gifts is more motivating to continuously use YouNow than making those gifts (*) (Figure 7). All in all, the results for premium gifts correspond to the results of the other gifts (Figure 6). All median values (for both kinds of gifts) equal 6 or even 7.

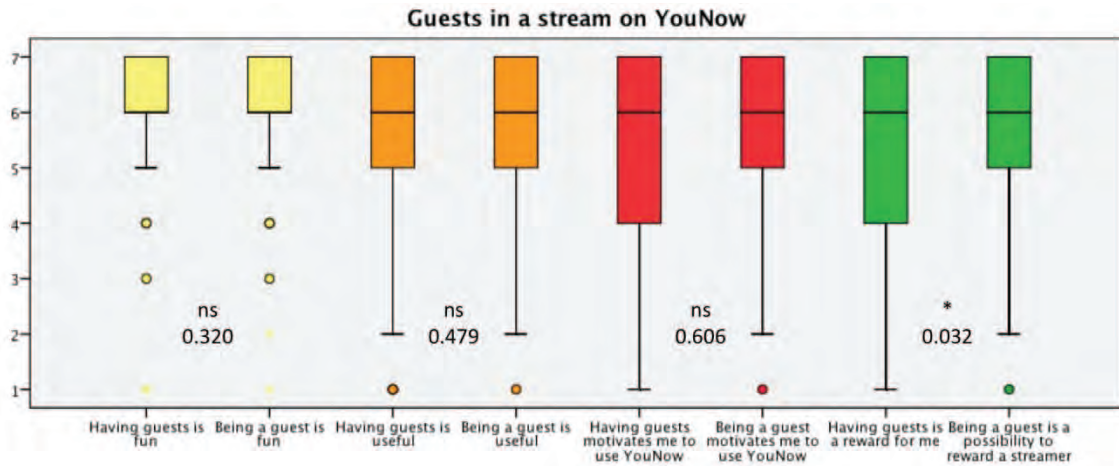


Figure 8: Difference between having guests in a stream and being guest in a stream (N=45)

3.1.6 Gamification element: Guest in a stream

Concerning the gamification element of being guest in a stream there is a statistically significant difference in the aspect of rewarding. Being guest in a stream is slightly more rewarding than having guest in the own stream (*). Both median values are 6; however, the IQR for being a guest is 2 and for having a guest is 3. Again, all median values are (with 6 or 7) optimal.

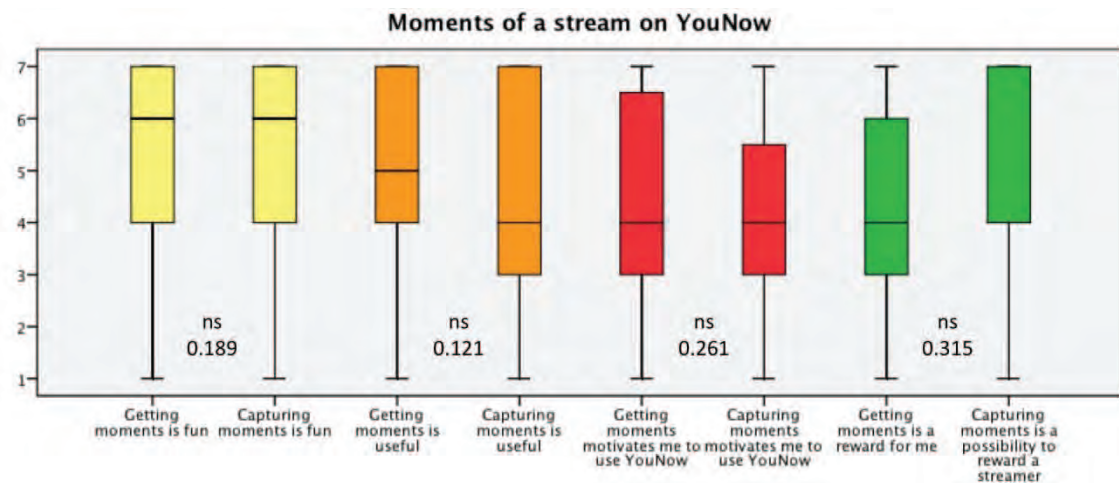


Figure 9: Difference between getting moments for a stream and capturing moments of a stream (N=44)

3.1.7 Gamification element: Moments of a stream

With regards to “moments” (which are short sequences of the entire video), there is no statistically significant difference between getting moments and capturing moments (Figure 9). However, “moments” are by no means as fascinating as all other analysed gamification elements. Moments (getting as well as capturing) are funny (median: 6); moments nevertheless lack popularity concerning usefulness (median getting moments: 5; median capturing moments: 4), motivation (median: 4) and reward (median: 4).

4. Discussion

4.1 RQ1. To what extent are gamification elements on SLSSs considered as funny, useful, motivating and rewarding?

The SLSS YouNow offers its users many gamification elements. All game mechanics (except “moments”) are perceived as funny, useful, motivating and rewarding by our participants. Most median value of the users’ estimations for likes, fans, subscribers, gifts, premium gifts and guests in a stream are (on a 7-point scale) 6 or 7. Here is a clear result: those gamification elements are seen only very positive by the participants. Considering “moments”, most median values equal 4, what means that the participants vote for “neutral”. Moments do not really bother the users, but most users do not need this functionality.

4.2 RQ2. What are the differences between the actions of giving and receiving gratifications?

Indeed, there is in many cases a statistically significant difference of giving something and receiving something in favour of receiving. Receiving likes, getting fans and getting subscribers is – statistically significant – *funnier* than giving likes, becoming a fan and becoming a subscriber. Getting fans and getting subscribers is considered more *useful* than becoming a fan or a subscriber. Receiving likes, getting fans, getting subscribers, receiving “normal” gifts and receiving premium gifts is more *motivating* than giving likes, becoming a fan, becoming a subscriber, making “normal” gifts and making premium gifts. Being a guest in a stream is more rewarding than having a guest in one’s own stream.

4.3 Limitations and outlook

This investigation has some limitations. First, the survey had only a small number of participants (N = 211); also the amount of survey questions was relatively high, consequently not every participant has completed the survey and we could only use a small number of results due to the fact that only the answers from users who are both, recipients as well as producers, were applicable for this investigation. Second, 50% of the survey participants are 23 years old and older. The data will be more accurate if more users from generation Z (Fietkiewicz et al., 2016) had participated, as mainly teenagers are the common users of YouNow.

Furthermore, qualitative interviews with broadcasters as well as viewers will be more accurate than pure quantitative data. The interviews could be directly performed live on YouNow. For future research a comparison of other SLSSs’ gamification elements would be helpful to have data on further live streaming services (as, e.g., Periscope is used mainly by generation Y and Ustream is used by generation X and older people). Furthermore, the extent of gamification elements a service applies should be investigated and compared. Also, a differentiation of users by gender, culture and age will be an interesting research topic.

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