

Gamification in an online community : Study of the impacts of gamification on customer engagement in an online community

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Abstract : Despite the increasing use of gamification mechanics to engage customers in firms' activities, the effective impacts of these mechanics remain underexplored. To address this gap, this research examines the effects of widely used gamification mechanics on customer engagement within an online community. Based on a field experiment, this research contributes to present literature by providing understanding regarding the potential effects of gamification on customer engagement, their experience and their intentions to further contribute toward the community. Paradoxically, although communities assume that members collaborate with each other, we show that the introduction of competition through contests may lead to positive impacts on customer engagement toward the community, as far as customers consider they are fairly treated in the gamified process. In that respect, we provide managers with guidelines regarding how to properly implement gamification mechanics in online community settings.

Keywords : Customer engagement, equity, gamification, online community

Résumé : Malgré l'utilisation croissante des mécaniques de gamification pour engagement les consommateurs envers les entreprises, l'efficacité de ces mécaniques demeure peu étudiée. Afin de combler ce manque, cette recherche examine l'effet de mécaniques de gamification largement utilisées par les entreprises sur l'engagement des consommateurs envers une communauté en ligne. Sur base d'une expérimentation sur le terrain, cette étude contribue à la littérature existante en fournissant une meilleure compréhension en ce qui concerne les potentielles effets de la gamification sur l'engagement des consommateurs, leur expérience et leur intention de continuer à contribuer à la communauté. Paradoxalement, bien qu'une communauté implique une collaboration entre ses membres, nous mettons en évidence que l'introduction de mécaniques de compétition à travers des concours peut mener à des effets positifs sur l'engagement envers la communauté si les consommateurs considèrent qu'ils ont été traités de manière équitable au sein du processus gamifié. Dans ce sens, nous suggérons des pistes de réflexions pour permettre aux managers d'implémenter les mécaniques de gamification de manière appropriée au sein des communautés en ligne.

Mots clé : Engagement de consommateurs, équité, gamification, communauté en ligne

Gamification in an online community: The impacts of gamification on customer engagement in an online community

Introduction

The emergence of new technologies which have been developed in parallel with the rise of the Internet, has provided platforms supporting interaction with and among customers, especially through the formation of online communities (Schau, Muniz, and Arnould, 2009. Hollebeek, 2011; Brodie et al., 2013). Indeed, the immense popularity of online communities and social media has revolutionized the way companies and customers interact (Johnson and Lowe 2015; Singh and Sonnenburg 2012; Smith, Fischer, and Yongjian 2012). Members of online community are no longer just participants who simply share information with peers or post comments in threads. They often actively contribute to managerial activities and co-create value with companies (Pongsakornrunsilp and Schroeder, 2011; Healy and McDonagh, 2013). Accordingly online communities facilitate information sharing among customers (Mačiulienė et al., 2016 ; Benoit et al., 2016), support companies innovation process by suggesting creative solution and providing feedback to existing projects (Fuller et al., 2011 ; Divakaran et al., 2017; Garcia Martinez, 2017), generate positive word-of-mouth (Gebauer et al., 2013) and promote the creation of social bonds among customers (Algesheimer et al., 2005).

Although the rise of online platforms and social medias provided powerful means to support interactions, resources exchanges between firms and customers and among customers, these technologies are not sufficient to effectively engage customers, yet considered as a key predictor of successful co-creation experiences (Jaakkola and Alexander 2014; Storbacka et al. 2016). Rooted in Customer Relationship Management (CRM) literature, customer engagement refers to the level and intensity of the connection customers may develop with focal objects, such as brands, communities, activities, platforms or even processes (Brodie et al. 2011). In that respect, customers engaged toward a community tend to live a better experience and reveal higher intention to further contribute to the community they are part of (Kumar et al., 2010; Brodie et al., 2013, Pansari and Kumar, 2017; Leclercq et al., 2017). Generating engagement toward the community is therefore considered as a key challenge for practitioners willing to co-create value with their customers (Brodie et al. 2011; Breidbach et al. 2014; Storbacka et al. 2016). However, while previous research extensively indicates that firms can facilitate customer engagement by providing attractive interactive platforms how these platforms should be designed to create, manage and maintain such engagement is an area consistently declared

within the literature as requiring further investigations (Nambisan and Baron 2007; Breidbach et al. 2013; Ostrom et al. 2015). This important gap is also emphasized by the Marketing Science Institute declaring as one of the top tiers research priorities for the periods 2014-2016 and 2016-2018.

Among the wide range of mechanisms that might be implemented to design engaging platforms, managers and researchers called for the use of gamification (Robson et al. 2014; Harwood and Garry 2015). Gamification, “use of game mechanics in non-game contexts” (Deterding et al., 2011: p. 3), has recently gained attention from practitioners. Through gamification, practitioners tend to apply lessons from the gaming domain to transform customers’ routines into an enjoyable game-like experience which result in strengthening customer engagement (Zichermann and Cunningham 2011; Robson et al. 2014). Gamification found applications in multiple domains, such as e-commerce (Insley and Nunan 2014), healthcare (Drell 2014; Hamari and Koivisto 2015), mobile media (Hofacker et al., 2016) and intra-organizational management (Farzan and Brusilovsky 2011). Despite the large use of gamification and the projections that such mechanics will become an increasingly adopted practice (MarketsAndMarkets, 2016), how to properly implement gamification mechanics to create and maintain customer engagement over time remains unclear (Lucassen and Jansen 2014; Harwood and Garry 2015). Consequently, research on gamification is still missing valid research and best practices to properly develop and manage gamification tools (Werbach and Hunter 2012; Hamari et al. 2014; Lucassen and Jansen 2014). To address these important gaps, this research examines the impact of gamification on customers engagement toward an online community. Specifically, this research seeks to investigate the following questions:

- What are the impacts of gamification on customers’ level of engagement toward an online community?
- How do these impacts vary according to the gamification mechanics used?

Therefore a series of hypotheses were developed and tested through a field experiment on an online community. This study was implemented on So-Girly, an online communities dedicated to women lifestyle. To that end, we tested different forms of contests, widely used in online communities – selection from a jury, election from the community and random draw. We assessed the impacts of these gamification mechanics on customer engagement, their experience and the resulting intention to further contribute to the community. This research contributes to present literature by providing understanding regarding the potential effects of

gamification on customer engagement and their intentions toward the community. Paradoxically, although communities assume that members collaborate with each other, we show that the introduction of competition through contests may lead to positive impacts on customer engagement toward the community, as far as customers consider they are fairly threatened in the gamified process. Accordingly, we provide insight regarding the process by which gamification mechanics operate to stimulate customers to further contribute the community they are part of. Moreover, we emphasize the key role of customers' perceived equity when they take part to such contests. In that respect, we provide managers with guidelines regarding how to properly implement gamification mechanics in online community settings. Accordingly, this research calls community managers to foster customers' perceived equity and therefore to not use community election to determine contest winners.

Theoretical background

Customer engagement

In line with the increasing influence of customers on firms' activities, customer engagement concept has recently received considerable attention from scholars as an imperative strategy for companies (Kumar and Pansari 2016). Customer engagement indicates the relationship a customer may develop toward a focal object (Brodie et al. 2011). This object might be an activity, a community, a brand or even a process. Engaging customers has been emphasized as a promising strategy to foster companies' sales growth and profitability (Bijmolt et al. 2010; Kumar and Pansari 2016). Engaged customers reveal higher brand trust, loyalty, positive emotion and satisfaction (van Doorn et al. 2010; Jaakkola and Alexander 2014). They are more willing to contribute to firms' activities by taking part to new products and services developments processes, generating positive word-of-mouth or helping other customers in products usage (Hoyer et al. 2010; Chandler and Lusch 2014; Haumann et al. 2015). They also tend to initiate long-term relationships and interactions with the object they are engaged to (Kumar et al. 2010).

Recent works were initiated to better define customer engagement and understand its potential links with value co-creation concept. Accordingly, Brodie et al. (2011) define customer engagement as a psychological state that customers may develop in favor of a focal object they are interacting with. It suggests a dynamic and iterative process of interactions that encompass cognitive, emotional and behavioral manifestations (Brodie et al. 2011; Brodie et al. 2013). The dynamic and iterative nature of the process implies that relational concepts such

as commitment, trust, self-brand connection, or loyalty may act as antecedents and consequences of customer engagement (Brodie et al. 2011). The volitional nature of the process enables customers to disengage when they want. However disengagement may be a difficult task for customers demonstrating an higher level of engagement. This difficulty is embodied by the “abscond” trap (Joule and Beauvois 1987).

Recently, Hollebeek et al. (2016) add to this definition that customer engagement includes a motivationally driven investments of resources in favor of a focal object. These authors identify three key processes which may lead to customer engagement: customer integration of operant and operand resources, knowledge sharing and learning. Whereas customer resource integration is essential to the development of customer engagement, customer knowledge sharing and learning are considered as facultative but they are potential drivers of engagement. Combining these processes results in co-creating value (Hollebeek et al. 2016; Storbacka et al. 2016). Value co-creation refers to the increase of customer value through the interactions they initiate with other stakeholders or with an object (Ranjan and Read 2014; Vargo and Lusch 2016). Without customer engagement, no resource integration and sharing are initiated. Consequently, value is not co-created. The concept of value co-creation and engagement are thus strongly interrelated (Brodie et al. 2011). However, whereas value co-creation is difficult to empirically observe and investigate, CE is observable and thus more likely to be designable and manageable (Storbacka et al. 2016).

In the digital context, customer engagement offers a fruitful framework to understand how customers and companies interact and exchange resources to co-create value through new technologies (Breidbach et al. 2013; Breidbach et al. 2014). Among the numbered online platforms that may be used to engage customer and co-create value, online communities offer a particularly interesting context as they enable members to share information, learn new skills and co-develop solutions through social interactions with peers (Bullinger et al. 2010; Hollebeek 2011). In the context of online community, Brodie et al. (2013) and Raïs and Gavard Perret (2011) distinguish customer engagement with the community they are interacting with from their engagement with the activity they undertake within community. Customer engagement with the activity refers to their investments of operant and operand resources in the activity. Conversely, customer engagement with the community refers to their investments in social bonds that they develop with other community members. Customer engagement in the community includes multiple acts volitionally undertaken by the customers to positively

influence the community. By being engaged with the community, customer create value for themselves but also for the entire community (Algesheimer et al. 2005).

To engage customers, Ramaswamy and Gouillart (2010) emphasize the key role performed by interactive platforms. They even use the term “engagement platform” to characterize these online interfaces facilitating actors’ interactions and resources exchange. These platforms enable firms to create, maintain and develop their engagement over time (Brodie et al. 2013; Jaakkola and Alexander 2014; Jaakkola et al. 2015). To develop engaging platforms, gamification mechanics have been emphasized by practitioners and researchers as a promising strategy (Werbach and Hunter 2012).

Gamification

The process, commonly referred to as gamification, has been revealed as a highly successful and popular practices for managers (Werbach and Hunter 2012). Gamification found applications in various domains of management, such as e-commerce (Insley and Nunan 2014), innovation (Agogu , Levillain and Hooge 2015; Roth, Schneckenberg and Tsai 2015), services (Hamari 2013; Hamari and Koivisto 2015), healthcare (Drell 2013, 2014), banking (Rodrigues and Oliveira 2016; Rodrigues and Costa 2016a, 2016b) and intra-organizational management (Farzan and Brusilovsky 2011).

Defining gamification implies to consider the designers’ perspective and the customers’ perspective. The designers’ perspective on gamification, mainly summarized by Deterding et al. (2011: p. 5)’s definition, refers to “the introduction of game mechanics and elements (rather than full-fledged games) to design non-game contexts”. According to this widely adopted definition, gamification consists in game-like mechanics, objectives and structures, imposed by designers, to influence customers’ behaviors (Werbach and Hunter 2012; Zichermann and Linder 2013). However, based on recent development of the literature in marketing and services increasingly centered on customers’ experience, gamification is considered as “a process of enhancing a service with affordances for gameful experience to support customers’ overall value creation” (Huotari and Hamari 2012: p. 19). This approach emphasizes the experience that gamification is attempting to provide and notes that a gamification does not always result from concrete elements imposed by managers but rather emerges from customers’ experience (Insley and Nunan 2014). Integrating these two views, the key challenge of gamification resides

in companies' abilities to enhance customers' experience and engagement by providing them with opportunities to develop game-like interactions.

To understand gamification practices, Robson et al. (2015) suggested the Mechanics Dynamics Emotions framework (MDE). In that respect, the mechanics include the goals, rules, setting, types of interactions and the boundaries of the situation imposed by designers (Robson et al. 2015). Dynamics are behaviors and interactions that may emerge from customers' gamified experience (Camerer 2003). They encompass both desired behaviors (e.g., cooperation among customers or better contributions) and unintended behaviors (e.g., cheating) (Elverdam and Aarseth 2007). Finally, the emotional components include the positive and negative affective reactions induced by the game-like settings (Robson et al. 2015). Therefore, the MDE encompasses both designers' and customers' perspectives as it includes the game design imposed by the company's designers and customers' reactions.

Whereas gamification mechanics are imposed by designers, the impacts of these mechanics on customer experience and engagement are difficult to predict. Consequently, the key competitive advantage for designers resides in their capabilities to develop mechanics that generate the intended effects (Robson et al. 2015). However, research on gamification is still missing valid research and best practices to properly develop and manage gamification mechanics (Werbach and Hunter 2012; Hamari et al. 2014; Lucassen and Jansen 2014). Further research is needed to test the impact of gamification mechanics on customer engagement (Harwood and Garry 2015).

Gamification as a customer engagement mechanism

Harwood and Garry (2015) and Robson et al. (2014) have recently provided first qualitative insights regarding the positive impacts of gamification mechanics on customer experience and engagement. In line with these authors, research in educational sciences underline gamification mechanics as a powerful tool to initiate learning and resources integration processes, two processes underlying customer engagement (Landers 2014; Landers and Landers 2014). Indeed, gamification makes the learning experience fun and offers an active role to customers in the resources integration process. The self-directed discoveries resulting from this process persuades customers by giving them a feeling of ownership of the insight they have uncovered (Ferrera, 2013). Accordingly, gamification has been emphasized as an effective ways to communicate contents, facilitate the adoption of particular points of view and shape customers' behaviors to engagement them (Landers and Landers 2014).

Among the gamification mechanics, the various types of challenges have highly attracted scholars and practitioners' interests (Harwood and Garry 2015). A challenge is described as an initiative requiring from participants to achieve a task by overcoming specific obstacles. However, the difficulty levels make the challenge completion and the reception of the related rewards uncertain. Malone (1981) emphasized that this level of uncertainty makes the challenges intrinsically motivating. As a consequence, by taking up challenges, participants learn progressively how to master the tasks and overcome the obstacles (Landers 2014; Hanus 2015). This sense of accomplishment and mastering generates fun experience (Koster 2013). Competition mechanics is a promising form of challenges as it introduces challenges within social contexts (Malone 1981). Indeed, prior studies on gamification underline that competition mechanics challenge customers and foster their engagement (Harwood and Garry 2015, Hammedi, Leclercq and van Riel 2017). Accordingly, competition mechanics foster the sense of uncertainty as the achievement of the challenge also depends on other participants' performances (Malone and Lepper 1987). In online community, this social aspect is intensified because of the strong relationships linking the members (Algesheimer, 2005). Consequently, by demonstrating high level of uncertainty, competition mechanics makes the interactions gameful and thus foster the engagement of customers, especially toward the community.

H1. Gamification mechanics (competition mechanics) have a positive impact on customers' level of engagement toward the community.

Multiple forms of contests may be implemented in an online community. Indeed, the best submission may be selected by an external impartial jury, elected by the community or even been randomly drawn. These multiple forms of contests reveal multiple levels of perceived equity regarding how the submissions are treated within the selection process. Whereas the randomly draw and jury selection suggest that every submission has a priori the same likelihood to win, the election by the community infers that some participants may be privileged according to their position within the community. To distinguish the potential benefits of these various gamification mechanics, the equity theory provides valuable insight as it conceptualizes how individuals perceive the balance between their investments and rewards comparing their situations with others within social exchanges relationships (Adams 1963; Ahrens, Coyles, Strahilevitz 2013). This sense of equity is especially critical in the context of online community where customers continually evaluate what they receive according to their contributions in the community (Algesheimer et al., 2005).

Equity theory and gamification

Rooted in social comparison literature, equity theory postulates that people embedded in social exchange relationships compare the ratio of their inputs into the exchange to their outcomes from the exchanges with each other (Adams 1963; Adams and Freedman 1976). Inequity occurs when the perceived inputs and/or outcomes in an exchange relationship are perceived as inconsistent with inputs and/or outcomes of a group considered as referent (Adams 1965). In the context of online community, the social exchanges are intensified as the relationships among members are strong and the interactions are steady (Brown et al., 2007). The referent group, in this case, refers to the community members.

Perceived equity positively affects the relationship among actors exchanging resources as it increases people trust and loyalty (Bolino and Turnley 2008; Tseng and Kuo 2014). By contrast, when people notice that others were getting more benefits for similar contributions, they may feel dissatisfied (Ajzen et al. 2000). Dissatisfaction may lead customers to revise their relationship with the actors they are exchanging with and thus induce disengagement (Pansari and Kumar, 2017)..

Accordingly, customers taking part to a contest where winners are supposed to be elected by the other members of the community may perceived inequity as they are potentially treated differently according to their popularity within the community. This perceived inequity may lead participants to revise their investments in their relationship with community. As these motivationally driven investments characterize customer engagement (Hollebeek et al. 2016), taking part to contests where winners are elected by the community should infer a weaker impact on customers' level of engagement. By contrast, participating to a contest where the winners are randomly drawn or selected by an external jury implies that all submissions are treated similarly. The perceived equity is thus ensured. In these cases, gamification should have a positive impact on customer engagement. Therefore, we hypothesize that taking part to a contest where winners are selected by a jury or randomly drawn have a stronger impact on customers' level of engagement toward the community than the election by peers.

H2. Participating to a contest where winners are selected by a jury or randomly drawn has a stronger impact on customer engagement toward the community than a contest where the winners is elected by the community.

Accordingly, Pansari and Kumar (2017) underline that behaviors characterizing customer engagement toward a community such as providing feedback, referring and influencing other members enhance customers' experience which leads to higher willingness to act in favor of the focal object, the community. Therefore, we hypothesize that higher level of customer engagement toward a community fosters customers' experience within the community and results in higher intention to further contribute to the community:

H3a. The level of customer engagement toward a community has a positive impact on customers' experience within the community.

H3b. The level of customers' experience within the community has a positive impact on customers' intentions to further contribute to the community.

Methodology

To test the above-mentioned hypotheses, a field experiment was carried out. Through this experiment, we manipulated the different forms of gamification mechanics – selection from an external jury, election from the community and random draw. This field study was conducted thank to a collaboration with an online community, So Girly. Launched in 2009, this community gathers today more than six thousands members who share their opinion and talk about lifetime-related topics. This community is exclusively dedicated to young women, between twenty and thirty five years old and managed by community members. Topics emerging from this community are varied. Community members are able to provide psychological supports to other, advice peers on products usage, take part to contests, give their opinions on lifestyle topics or even jointly develop community-based projects.

Study design and procedures

One week before Valentines' Day, we launched on SoGirly a contest consisting in publishing a picture representing « Love ». Each member who accepted to take part to the challenge was randomly assigned to one of the four conditions. Whereas a first condition suggested that the potential winners of the contest would be selected by an external jury panel, another condition indicates that they would be randomly drawn. The third condition proposed that the winners would be elected by the other members of the community through a voting system. In these three conditions, after participants had uploaded their pictures, they were invited to fulfill a questionnaire. The last condition consisted in a control group where

participants were asked to complete a questionnaire before being informed of the instructions.

Measures

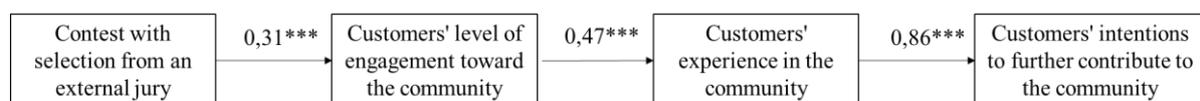
Through a questionnaire, we operationalized the key study constructs, customers' experience, customer engagement toward the community and customers' intention to further contribute to the community using multi-item measurement scales. The used scales achieve a Cronbach's alpha value greater than 0,7.

To measure customer co-creation experience, we used the nineteen-items scale developed by Verleye (2015). This measure captures the four dimensions characterizing customer experience namely the social (5 items; $\alpha=0,821$; Jöreskog's $\rho=0,874$), pragmatic (6 items; $\alpha=0,885$; Jöreskog's $\rho=0,913$), cognitive (5 items; $\alpha=0,847$; Jöreskog's $\rho=0,892$) and hedonic dimensions (3 items; $\alpha=0,958$; Jöreskog's $\rho=0,972$),. All the items used a five-point likert scale (1= "strongly disagree", and 5="strongly agree"). Customer engagement toward the community was measured through the four-items likert scale ($\alpha=0,745$; Jöreskog's $\rho=0,835$) developed by Algesheimer et al. (2005). We also assessed customers' intention to further contribute the community through an ad-hoc, three-items scales ($\alpha=0,723$; Jöreskog's $\rho=0,849$): "*I will continue to contribute to the community in the future*", "*I will talk about the community to my friends and related*", "*I will continue to be a member of the community*". The questionnaire closed with a manipulation check. This manipulation was assessed by means of an item through which respondents were asked to rate the extent to which they felt like taking part to a contest ("*I took part to a contest*"). Finally, respondents were debriefed on the objective of the experiment and thanked for their participation.

Results

Based on this field experiment, 237 complete questionnaires were collected ($N_{\text{Randomly_draw}}=58$; $N_{\text{External_jury}}=57$; $N_{\text{Community_election}}=51$; $N_{\text{Control}}=71$). Participants mean age is 23 years and all were female. No significant difference was demonstrated among the four conditions in terms of seniority in the community. In terms of manipulation checks, respondents assigned to one of the three types of contests reported a significant greater feeling to take part to a contest than the control group ($p < 0,05$). Data analyses were conducted through a three-steps procedure thank to Preacher and Hayes (2008)'s macro process. Appendices 1,2 and 3 detail these results.

First, a comparison between the group taking part to a contest where the winners are selected by an external jury and the control group was carried out. Therefore, a two-mediation model (Model 6; bootstrapped samples= 5000) was tested to assess the impact of a contest with an external jury on customers engagement and resulting experience and intention to further contribute to the community. In a regression considering customer engagement toward a community as the dependent variable, we report a significant positive impact induced by a contest design with an external jury ($\beta=0,31$; $t=2,30$; $p<.001$). This result confirms H1. Then, we find a significant positive relationship between customer engagement toward the community and resulting experience ($\beta=0,47$; $t=8,64$; $p<.001$). Finally, in a regression considering customer intention to further contribute to the community as dependent variable, we report a significant positive impact of customers' experience ($\beta=0,86$; $t=5,98$; $p<.001$). These results confirm H3a and H3b. No significant direct impact of the contest on customers' experience and resulting intentions was reported. These results indicate that taking part to a contest where the winners is selected by an external jury positively impacts customers' level of engagement toward the community. Such engagement results in a better experience and higher intention toward the community (effect=0,12; LLCI=0,03; ULCI=0,25). Figure 1 illustrates the tested relationships.

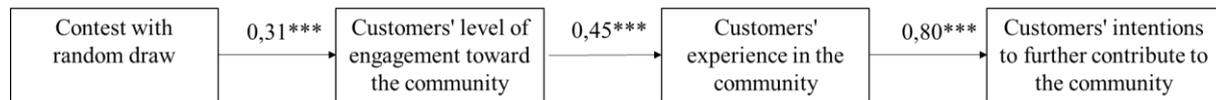


* $p<0,05$; ** $p< 0,01$; *** $p< 0,001$

Figure 1: Step 1 resulting model

Second, a comparison between the group taking part to a contest where the winners are randomly drawn and the control group was carried out. Similarly to the first step, a two-mediation model (Model 6; bootstrapped samples= 5000) was tested to assess the impact of a contest with a random draw on customer engagement and resulting experience and intention to further contribute to the community. In a regression considering customer engagement toward a community as the dependent variable, we report a significant positive impact induced by a contest design with a random draw ($\beta=0,31$; $t=2,30$; $p<.05$). This result confirms H1. Then, we find a significant positive relationship between customer engagement toward the community and resulting experience ($\beta=0,45$; $t=8,24$; $p<.001$). Finally, in a regression considering customer intention to further contribute to the community as dependent variable, we report a significant positive impact of customers' experience ($\beta=0,80$; $t=5,92$; $p<.001$). These results confirm H3a and H3b. No significant direct impacts of the contest was reported regarding customers'

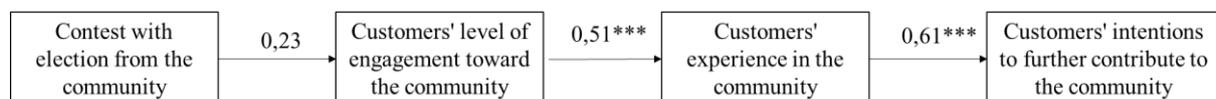
experience and resulting intentions. These results indicate that taking part to a contest where the winners is randomly drawn positively impact customers' level of engagement toward the community which leads to a better experience and higher intention toward the community (effect=0,11; LLCI=0,02; ULCI=0,21). Figure 2 illustrates the tested relationships.



* $p < 0,05$; ** $p < 0,01$; *** $p < 0,001$

Figure 2: Step 2 resulting model

Third, a comparison between the group taking part to a contest where the winners are elected by the community and the control group was carried out. Similarly to the previous two steps, a two-mediation model (Model 6; bootstrapped samples= 5000) was tested to assess the impact of a contest with election of the winners from the community on customer engagement, resulting experience and intention to further contribute to the community. In a regression considering customer engagement toward a community as the dependent variable, we do not report any significant impact ($\beta=0,23$; $t=1,66$; n.s.). These results confirm H2. However, consistently with the previous findings, we still find a significant positive relationship between customer engagement toward the community and resulting experience ($\beta=0,51$; $t=8,70$; $p < .001$). Finally, in a regression considering customer intention to further contribute to the community as dependent variable, we also report a significant positive impact of customers' experience ($\beta=0,61$; $t=4,34$; $p < .001$). These results confirm H3a and H3b. Figure 3 illustrates the tested relationships.



* $p < 0,05$; ** $p < 0,01$; *** $p < 0,001$

Figure 3: Step 3 resulting model

Discussion

This research investigates the opportunity to use gamification as a means of creating, boosting and maintaining customer engagement toward an online community. Through a field experiment conducted on So Girly community, we tested the effects of three gamification

mechanics widely used within communities - random draw, contest with jury selection and contest with an election from peers.

Our findings provide strong empirical evidences demonstrating that gamification mechanics, may positively impact customer engagement toward the community. This is in line with prior studies on gamification in healthcare, learning, technological and online contexts which emphasize the benefits of implementing competition mechanics to challenge customers and foster their engagement (Landers 2014, Harwood and Garry 2015, Hammedi et al. 2017). Supported by Malone (1981), the uncertainty characterizing a game-like experience leads customers to increase their engagement toward the community they are part of.

However, this study contributes to present literature by highlighting that the effectiveness of gamification in engaging customers may vary depending on the mechanics used. Accordingly, we introduce customers' perceived equity as a key aspect of gamified contexts (Adams 1963, 1965; Adams and Freedman 1976). We emphasize customers' perceived inequity regarding the treatment of their submissions to the contest may inhibit the benefits of gamification. Although a contest design including a selection from a jury or a random draw implies that each submission is similarly treated and each participant has the same likelihood to win the contest, a contest including the election of the winner by peers implies that some members may be privileged according to their popularity within the community. The determinant aspect of equity in customer engagement also transcends the definition of value co-creation and the distinction with value co-destruction. In that sense, value co-creation refers to the reciprocal creation of value for all engaged actors (Aarikka-Stenroos and Jaakkola 2012). Conversely, value co-destruction refers to practices that lead to the decline of value for at least one actor (Plé and Cáceres 2010). In that respect, contests including the election of the winners from the community indicate a value co-destruction process as perceived equity is not established. To reduce this perceived inequity, these participants may revise their relationship to the related community.

Furthermore, we highlight the dynamics and iterative process underlying customer engagement toward the community. Therefore, we assessed the impact of level of customer engagement on their experience and their intention to further contribute to the community. As supported by prior literature, we find that customer experience with the community is determinant to explain their intentions to further interact on the platform and consequently to increase their engagement (Fuller et al., 2011, Gebauer et al., 2013, Brodie et al., 2013;

Nambisan and Baron, 2013; Kumar and Pansari, 2017). Moreover, we show that customer experience is driven by customer level of engagement toward the community. In that respect, we emphasize customer engagement toward the community as a key competitive for companies willing to maintain their interaction with customers over time. Therefore, as depicted in Figure 4, gamification may be a fruitful means to initiate this dynamic and iterative process (Lucassen and Janssen, 2012).

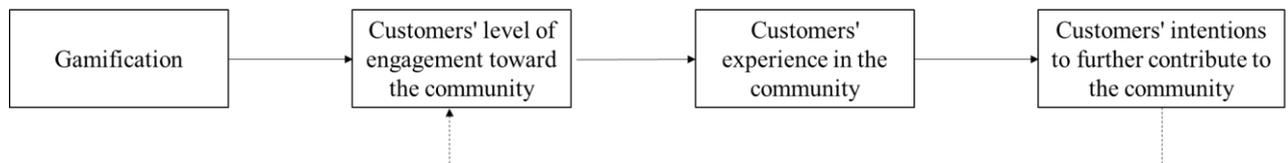


Figure 4: Conceptual model

Conclusion

In increasingly competitive environments, the opportunity to engage customers is a highly challenging task for companies, especially in the online context. Based on a field experiment within an online community, this research offers a better understanding of how gamification mechanics might be used to create, boost and maintain customer engagement, a widely targeted variable for marketing managers (call from Breidbach et al. (2013); Ostrom et al. (2015)). Responding to the recent calls by Harwood and Garry (2015) and Lucassen and Janssen (2012), this research questions the effectiveness of gamification, identifies its limits and provides guidelines regarding how to properly implement gamification. Therefore, the impacts of three forms of gamification mechanics widely used to manage online communities – contests with a selection from an external jury, with a random draw and with an election from the community - on customer engagement toward the community and resulting experience and intention to further contribute were modeled and empirically tested.

Supported by the equity theory (Adams 1963, 1965; Adams and Freedman 1976), this research contributes to current discussion on gamification, especially in the context of online communities. Whereas these communities assume collaboration among these members, we show that the implementation of competition mechanics such as contest may positively impact customer engagement toward the community. However, we also show that the benefits of gamification in terms of engagement is withdrawn when participants perceive inequity regarding their likelihood to win the contest in comparison to the other participants, which is the case in competition-by-elections mechanics. Our findings provide a better understanding of

the potential negative impacts induced by the election of winners from peers. Because of the increasingly important social aspects of new technologies and customers' desire for more empowerment, such gamification mechanics inviting customers to be judges and participants is widely used by practitioners to design their multiple interactive platforms (e.g. online social networks, communities, innovation contests). Accordingly, our results challenge managerial practices and call practitioners to rather implement contest with a selection from an external jury or even a random draw when they want to gamify their community to engage members. Accordingly, we demonstrate that contests with an election of the winners by the community, a widely used practices by community managers, do not positively impact the level of customer engagement as it does not ensure the equity among participants.

However, despite our experimental approach, some limitations persist. Because this study is one of the first empirical investigations of gamification mechanics, further research should provide generalizability to our findings and analyze other gamification practices, such as badge systems, 3D environments or playful design, and other contexts, such as healthcare, retail or services. This research also dedicates important attention to gamification mechanics used but various personal and cultural characteristics may influence our findings (e.g. familiarity to games, previous experiences within the platform). These personal characteristics require further investigations. Next, we intentionally implement our study in a community not owned by a brand. Further research should dedicate attention to assess the extent to which brand engagement may affect our results.

Furthermore, the contributions of this research highlight three tracks that deserve further investigations. First, this research investigates the potential impacts of gamification on customer engagement toward the community, the resulting experience and behavioral intentions. However, as the customer engagement implies to engage participants on a long-term perspective, further research should assess the potential impact of gamification beyond the contest-period. Therefore, the development of longitudinal design would be a promising strategy to analyze how the impacts of gamification persist over time. Second, through our study, we highlighted that customers' perceived equity regarding their likelihood to win the contest is determinant for the effectiveness of gamification. Further academic efforts should be dedicated to deepen our understanding of the elements influencing the perceived equity in gamified contexts. Besides, further research should be conducted to identify strategies that may be used by managers to foster the equity feeling and thus fully benefit from the competitive advantage

of gamification. Therefore, game theory might provide rich of insight to further explore how customers estimate their likelihood to win and their risk aversion (Morton, 1987). Finally, we show that customer engagement toward the community is determinant to maintain customer interaction over time. Further investigation should be carried out to understand such type of engagement. Therefore, Social Network Analysis would provide promising insight regarding customers' engagement toward the community according to their position within a network. Additional investigations of the suggested topics are strongly recommended to gain a better understanding of the emergent concept of gamification; these continued insights will have applications in multiple management contexts, for both academic and managerial purposes.

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Appendices

Appendix 1 : Step 1 results

A. Indirect effects of contest with selection from an external jury (vs. control group)						
	Dependent variables					
	Customers' level of engagement toward the community		Customers' experience		Customers' intention to further contribute	
	Beta	SE	beta	SE	beta	SE
Model 1						
Constant	2,81***	0,09				
Contest with selection from an external jury	0,31*	0,11				
Model 2						
Constant			1,73***	0,16		
Contest with selection from an external jury			0,04	0,08		
Customer engagement toward the community			0,47***	0,05		
Model 3						
Constant					1,15***	0,36
Contest with selection from an external jury					-0,21	0,13
Customer engagement toward the community					0,01	0,11
Customers' experience					0,86***	0,14

* p<0,05 ; ** p< 0,01 ; *** p< 0,001

B. Path of the effects of contest with selection from an external jury on the level of CE, the experience and the intention toward the community

	Effect	LLCI	ULCI
Total	0,16	-0,02	0,33
Contest with selection from an external jury → Customer engagement toward the community → Customers' intention to further contribute	0,00	-0,07	0,08
Contest with selection from an external jury → Customer engagement toward the community → Customers' experience → Customers' intention to further contribute	0,12	0,03	0,25
Contest with selection from an external jury → Customers' experience → Customers' intention to further contribute	0,03	-0,11	0,16

Appendix 2: Step 2 results

A. Indirect effects of contest with random draw (vs. control group)						
	Dependent variables					
	Customers' level of engagement toward the community		Customers' experience		Customers' intention to further contribute	
	beta	SE	beta	SE	beta	SE
Model 1						
Constant	2,81***	0,09				
Contest with random draw	0,31*	0,13				
Model 2						
Constant			1,78***	0,16		
Contest with random draw			0,05	0,08		
Customer engagement toward the community			0,45***	0,05		
Model 3						
Constant					0,88*	0,34
Contest with random draw					-0,18	0,13
Customer engagement toward the community					0,18	0,10
Customers' experience					0,79***	0,13

* p<0,05 ; ** p< 0,01 ; *** p< 0,001

B. Path of the effects of contest with random draw on the level of CE, the experience and the intention toward the community

	Effect	LLCI	ULCI
Total	0,21	0,02	0,38
Contest with random draw → Customer engagement toward the community → Customers' intention to further contribute	0,06	0,00	0,15
Contest with random draw → Customer engagement toward the community → Customers' experience → Customers' intention to further contribute	0,11	0,02	0,21
Contest with random draw → Customers' experience → Customers' intention to further contribute	0,04	-0,08	0,17

Appendix 3: Step 3 results

A. Indirect effects of contest with election from the community (vs. control group)						
	Dependent variables					
	Customers' level of engagement toward the community		Customers' experience		Customers' intention to further contribute	
	beta	SE	beta	SE	beta	SE
Model 1						
Constant	2,81***	0,09				
Contest with election from the community	0,23*	0,14				
Model 2						
Constant			1,62***	0,17		
Contest with election from the community			-0,16	0,09		
Customer engagement toward the community			0,51***	0,06		
Model 3						
Constant					1,44***	0,35
Contest with election from the community					0,02	0,87
Customer engagement toward the community					0,18	0,11
Customers' experience					0,02***	0,14

* p<0,05 ; ** p< 0,01 ; *** p< 0,001

B. Path of the effects of contest with election from the community on the level of CE, the experience and the intention toward the community

	Effect	LLCI	ULCI
Total	0,02	-0,18	0,18
Contest with election from the community → Customer engagement toward the community → Customers' intention to further contribute	0,04	-0,01	0,14
Contest with election from the community → Customer engagement toward the community → Customers' experience → Customers' intention to further contribute	0,07	-0,01	0,18
Contest with election from the community → Customers' experience → Customers' intention to further contribute	-0,10	-0,24	0,01