The effects of gamification on market research engagement and response

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Abstract

“Gamification” comprises a range of techniques to increase participants’ engagement in market research tasks. Although gamification is presumed to improve the volume and quality of responses, only a few studies have empirically tested this assumption. This study uses theories of engagement and makes a contribution by testing several techniques of gamification and investigates their effects on marketing research outcomes. Quantitative online quasi-experimental research was conducted and 670 usable responses received. Respondents were randomly assigned to either an experimental group which completed a survey that included various game mechanics or a control group which filled in a conventional questionnaire.

The results indicate that whilst the use of game mechanics in an online survey helps to increase the volume of data collected and the time respondents spend answering questions, gamification has not contributed to increases in completion rate and had only little positive impact on enjoyment, a negative impact on perceived ease of use, and no influence on perceived control and concentration. Also, gamification led to data distortion. Thus it cannot be concluded that gamification helps to get respondents closer to a state of flow. These findings question whether the recent massive buzz around gamification is justified.
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Introduction
The marketing research industry is increasingly facing a challenge of securing adequacy and quality of response from individuals of interest to the researcher. It is often suggested that the pool of respondents is shrinking because people are under greater time pressure and may find the task of completing a survey boring (GMI (Global Market Insite), 2007; Puleston, 2011a). Thus, Puleston (2011b) believes that survey design should incorporate more techniques based on game-play to keep respondents engaged in the survey process. Using “gamification” in marketing research can help improve respondents’ experience and the volume of data collected by encouraging respondents to write more freely, stimulating their imagination and making them think harder (Sleep & Puleston, 2009). However, very few studies provide empirical evidence for their claims about the link between gamification and improvements in market research outcomes. A positive link between gamification and respondents’ engagement is seen by some as self-evident, but this assumption remains largely untested with the exception of a small number of studies (e.g. Puleston, 2011b; Puleston & Sleep, 2011; Strube & Zdanowicz, 2008). Furthermore, even fewer studies have related their findings to theories of engagement. This study makes a contribution by testing several techniques of gamification and investigating the effects they have on marketing research outcomes.

Gamification
Swan (2012, p.13) defines gamification as “the process of adding game mechanics to processes, programs and platforms that would not traditionally use such concepts”. To Deterding et al. (2011, p.2) gamification is “the use of game elements in non-game contexts”. Edmonds (2011) adds to the basic definition that the use of game mechanics is aimed at encouraging engagement in activities that might otherwise seem uninteresting and monotonous. Gamification can be distinguished from toys, serious games and playful design as it uses only some elements of games (Deterding, et al., 2011). Walther (2003) notes that: “play is an open-ended territory in which make-believe and world-building are crucial factors”, while “games are confined areas that challenge the interpretation and optimizing of rules and tactics”. Thus, gamification refers to gaming (rather than playing) as rules are defined. However, gamification has been seen by some authors as no more than a “buzzword” which has recently become fashionable. Blaney (2011) suggests that the term cannot be taken seriously as it sounds too temporary, arguing that satisfaction and engagement are only derived from game enjoyment, which is not new, neither is the idea of integrating gaming elements to foster engagement leading to desired outcomes (Zuk, 2012).

Engagement
Incentives are of diminishing value as a means of increasing engagement in surveys. Childers and Skinner (1996) have identified a number of factors that may influence respondents’ engagement, for example, personalisation and questionnaire appearance can help improve the image of the survey sponsor and reduce the impersonal effect associated with surveys. Another well-known technique is to include, at the beginning of a questionnaire, an inducement question that aims at arousing respondents’ feelings and thoughts (Geurts, O’Neill, Albaum, & Lawrence, 1988). The key issue in obtaining a favourable response from targeted survey participants is related to understanding their basic motives. Respondents’ motivation may vary in intensity (e.g. how much incentive is sought) and in orientation (e.g. what type of motivation) (Ryan & Deci, 2000). Respondents’ motives may be intrinsic or extrinsic, and self- or other-oriented. Respondents driven by intrinsic motives want to provide an opinion, show curiosity and seek fun: they may consider the research task to be a reward in itself. This type of
participant may like taking part in surveys, as they constitute an opportunity to stop and think about something different from their common routine. Supporting intrinsic motivation is possible by keeping surveys short, using visual questions and focusing on the interest of the targeted audiences (Timpany, 2012). Such improvements in surveys may help increase perceived ease of use, perceived control, enjoyment and other attributes of engagement. On the other hand, respondents driven by extrinsic motives may find the chance of winning prizes very appealing (Veris, 2011). Self-oriented motives refer to satisfying self-interests, while other-oriented motives refer to having a positive impact on the world beyond the self (Yeager, Bundick, & Johnson, 2012).

The concept of flow is derived from theories of engagement. It has been argued that engagement is a subset of flow or a kind of flow in a more passive form, and both share attributes (Webster and Ahuja 2004 cited in O’Brien & Toms, 2008). According to Csikszentmihalyi (1990), humans are most happy when they are in a state of flow, a state of complete absorption with the activity at hand. Flow may be described as a state of mind in which individuals feel so engaged in a task that they are in perfect control of their environment; their actions and awareness merge and they have a feeling of optimal experience. Flow experience may occur in several activities such as dancing, reading, or even working (Rettie, 2001). Flow is not experienced uniformly by everyone because of differences in individual characteristics (Veris, 2011).

**Effects on the market research process**
Marketing research companies increasingly rely on new technologies to develop various online survey techniques and gather data quickly at low cost (Roztocki, 2001). Unlike conventional techniques (e.g. face-to-face interviews), online surveys offer advantages such as convenience, interactivity and variety of subjects/questions (Ilieva, Baron, & Healey, 2002). Nevertheless, their efficiency remains questionable: with typically low response rates (Lozar Manfreda, Bosnjak, Berzelak, Haas, & Vehovar, 2008). Moreover, online surveys can suffer because respondents often do not answer all of the questions (especially when the questionnaire is long and complex) because of a lack of overall engagement. Indeed, as Puleston (2011b) argues, it is easy for respondents to give up on an online survey and simply close the Internet window. Stevens (2011) argues that the fundamental advantage of gamification in marketing research relies on its ability to make respondents “provide insights into their subconscious models of their internal world”. Puleston and Sleep (2011) have demonstrated how marketing researchers could reformat questions to improve the quality of data in surveys. For example, they found that applying rules to questions to turn them into games is likely to result in richer data and more focussed respondents. Adding competitive elements, creating a point scoring game or using games as warm-up exercises were also found to have a positive effect on the quality of data collected.

However, it has been argued that gaming elements in a survey may encourage more flippant answers: gamification can foster respondents to tick items without thinking about the underlying issue. Finally, the mindset of respondents often changes when they start to play and they can be encouraged to think differently (Puleston & Sleep, 2011). Games go against the conventional wisdom as they enable researchers to change the mindset of respondents by putting them into the identical mental space as they are when making a particular decision. Thus, an excited respondent may be more likely to say he/she would purchase a product than an angry respondent (Harrison, 2011).

**Hypotheses**
Our first hypotheses seek to understand more about the links between gamification and respondents’ basic behavioural responses.
**H1** An online survey that uses game mechanics generates greater volume of feedback than a corresponding online survey that adopts a conventional approach.

**H2** Using gamification in an online survey leads to an increase in the average time respondents spend completing a questionnaire.

**H3** A gamified online questionnaire results in a higher completion rate than a corresponding conventional online survey.

We then study the link in a marketing research context between gamification and engagement with the following hypothesis:

**H4** An online survey that adopts a gamified approach generates greater respondents’ engagement scores, in terms of: (a) enjoyment, (b) perceived ease of use, (c) perceived control and (d) concentration/focus, than a similar online survey that uses a conventional approach.

Furthermore, very little research has been reported which relates the various attributes of engagement to marketing research outcomes, therefore we test the following hypotheses:

**H5** The more respondents are engaged and achieve a state of flow, based on the following constructs: (a) enjoyment, (b) perceived ease of use, (c) perceived control and (d) concentration/focus, the greater the volume of feedback collected is.

**H6** The more respondents are engaged and achieve a state of flow, based on the following constructs: (a) enjoyment, (b) perceived ease of use, (c) perceived control and (d) concentration/focus, the greater the time spent by respondents completing the questionnaire.

The extent to which the type of data provided by respondents may be influenced by the presence of gamification has not been rigorously investigated and we therefore test the following hypothesis:

**H7** There is a significant difference in variable mean scores between online surveys adopting a conventional approach versus a gamified approach.

The effects of basic motives on the respondents’ experience of the market research experience have not been extensively reported; therefore we test the following hypotheses.

**H8** Higher intrinsic motives lead to greater respondents’ engagement scores, based on the following constructs: (a) enjoyment, (b) perceived ease of use, (c) perceived control and (d) concentration/focus.

**H9** Intrinsic motives for taking part in online surveys have a positive association with survey respondents’ sensitiveness to gamification.

**Methodology**

The study used a quasi-experimental research approach in which a control sample was presented with a “traditional” questionnaire while an experimental group was presented with a similar questionnaire which had been manipulated to incorporate features of gamification.

A total of 709 people took part in the research, with 670 questionnaires usable after a manual check process. The population comprised young people aged 18-30 who have been described as “Web2.0 experts” and constantly confronted with digital services (Lusoli & Miltgen, 2009, p.9). Respondents were randomly allocated to a “control” group or an “experimental” group. Chi-square tests and t-tests showed no significant differences between the groups in terms of gender (p=.238>5%), nationality (p=.731>5%) and age (p=.620>5%).

Data were collected using an online survey programme, as conventional approaches would have allowed neither tracking click rates and actual response rates nor testing several techniques of gamification. The order of questions and of attributes appearing in some questions was randomised for each respondent to avoid order effect bias resulting from respondents only reading the first few statements. The experimental treatment comprised manipulation of the following factors: Richness/density of data collected, evaluated by
counting the number of words written for each open-ended question; time spent completing the questionnaire; the number of responses in the questionnaire. This was achieved by adding visuals and more imagery, adding competitive elements, applying restrictive rules and an imagery framework, sending respondents on mini-quests, providing respondents with results of the research, tying the completion activity to a game in the “gamified” questionnaire.

The theme chosen for the experiment was the Olympic Games - a hot topic at the time of the research and conducted in August 2012 while the London Olympics were still proceeding. The questionnaire presented to the experimental group was gamified in two ways. First, the way respondents answered the questions was made more game like; and then, some questions were reframed in order to encourage respondents to “play”. As an example, Question 6 was transformed into a game by being placed in a more imagery personal context. Its basic form “how much do you like the following Olympic sports?” was reframed into “imagine the dream had come true and you had won tickets to watch all the sport disciplines you like at the London Olympics. How likely would you have been to watch each of the following sports?”

To test the research hypotheses, previously developed and validated multi-item measurement scales were refined and adapted to our context. Engagement has been measured by assessing respondents’ enjoyment (using a 4-item scale adapted from Koufaris (2002)), perceived ease of use/usability of the survey (using a 3-item scale adapted from O’Brien and Toms (2010) and Davis (1993)), respondents’ concentration/focus (using 3-item scale adapted from Koufaris (2002)) and perceived control of the situation (using 4-item scale adapted from Koufaris (2002)). A 5-item scale adapted from Brügen et al., (2011) was employed to measure how much respondents are driven by intrinsic motives to complete questionnaires. Perceived sensitiveness to game mechanics was measured using 4 items developed on the basis of exploratory research.

Results
The findings in respect of the hypotheses are summarised in Table 1.

Table 1: Hypotheses testing summary

<table>
<thead>
<tr>
<th>H</th>
<th>Independent variable</th>
<th>Dependent variable</th>
<th>Hypothesis result</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Gamification</td>
<td>Volume of feedback</td>
<td>Supported</td>
</tr>
<tr>
<td>H2</td>
<td>Gamification</td>
<td>Time spent</td>
<td>Supported</td>
</tr>
<tr>
<td>H3</td>
<td>Gamification</td>
<td>Completion rate</td>
<td>Rejected</td>
</tr>
<tr>
<td>H4(a)</td>
<td>Gamification</td>
<td>Enjoyment</td>
<td>Supported</td>
</tr>
<tr>
<td>H4(b)</td>
<td>Gamification</td>
<td>Perceived ease of use</td>
<td>Rejected</td>
</tr>
<tr>
<td>H4(c)</td>
<td>Gamification</td>
<td>Perceived control</td>
<td>Rejected</td>
</tr>
<tr>
<td>H4(d)</td>
<td>Gamification</td>
<td>Concentration focus</td>
<td>Rejected</td>
</tr>
<tr>
<td>H5(a)</td>
<td>Enjoyment</td>
<td>Volume of feedback</td>
<td>Supported</td>
</tr>
<tr>
<td>H5(b)</td>
<td>Perceived ease of use</td>
<td></td>
<td>Supported</td>
</tr>
<tr>
<td>H5(c)</td>
<td>Perceived control</td>
<td></td>
<td>Supported</td>
</tr>
<tr>
<td>H5(d)</td>
<td>Concentration focus</td>
<td></td>
<td>Supported</td>
</tr>
<tr>
<td>H6(a)</td>
<td>Enjoyment</td>
<td>Time spent</td>
<td>Rejected</td>
</tr>
<tr>
<td>H6(b)</td>
<td>Perceived ease of use</td>
<td></td>
<td>Rejected</td>
</tr>
<tr>
<td>H6(c)</td>
<td>Perceived control</td>
<td></td>
<td>Rejected</td>
</tr>
<tr>
<td>H6(d)</td>
<td>Concentration focus</td>
<td></td>
<td>Rejected</td>
</tr>
<tr>
<td>H7</td>
<td>Gamification</td>
<td>Character of the data</td>
<td>Supported</td>
</tr>
<tr>
<td>H8(a)</td>
<td>Intrinsic motives</td>
<td>Enjoyment</td>
<td>Supported</td>
</tr>
<tr>
<td>H8(b)</td>
<td>Intrinsic motives</td>
<td>Perceived ease of use</td>
<td>Supported</td>
</tr>
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<td>H8(c)</td>
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<td>Perceived control</td>
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<td>H8(d)</td>
<td>Intrinsic motives</td>
<td>Concentration focus</td>
<td>Supported</td>
</tr>
<tr>
<td>H9</td>
<td>Intrinsic motives</td>
<td>Sensitiveness to game mechanics</td>
<td>Supported</td>
</tr>
</tbody>
</table>
Conclusions and Discussion

Many authors (e.g., Puleston & Sleep, 2011; Stevens, 2011; Strube & Zdanowicz, 2008) have suggested that gamification helps increase the volume of data collected in online surveys and the time respondents spend answering questions. In this study, H1 and H2 are both supported as there was a significant difference in volume of feedback \( (p \leq 0.016) \) and time spent on completion activity \( (p \leq 0.000) \) between the conventional questionnaire and the gamified questionnaire. Scores of both variables were higher in the gamified survey (16% increase in word count and 30% increase in time spent).

It has been argued that the use of gamification in research helps increase completion rate and respondents’ engagement (e.g., Leedy & Ruyle, 2011; Puleston, 2011b). However, in this study, H3 is rejected and H4 is only partly confirmed, casting doubt on the validity of previous research. Gamification has not contributed to increases in completion rate \( (p \leq 0.950) \); both questionnaires had similar completion rates. Gamification’s effects on engagement are unclear. Gamification had little impact on enjoyment \( (p \leq 0.026; 6\% \text{ increase in enjoyment scores}) \), a slight negative impact on perceived ease of use \( (p \leq 0.025; 4\% \text{ decrease in perceived ease of use scores}) \) and no influence on perceived control \( (p \leq 0.185) \) and concentration/focus \( (p \leq 0.101) \). The gamified questionnaire was even perceived as being significantly too long (single item of perceived control) compared to the conventional survey \( (p \leq 0.001; \text{mean difference}=0.47) \). It cannot be concluded that gamification helps to get respondents closer to a state of flow. Puleston and Sleep (2011) claim that gamification helps increase respondents’ engagement, based on the fact that volume of feedback is higher when game mechanics are added to online surveys. However, elements such as volume of feedback and time spent completing surveys are only correlates of engagement: they are not components of engagement. More research is needed about how components should be articulated to define intensity of flow.

Respondents’ engagement needs to receive more attention because the concept may really matter to marketing researchers. Indeed, in this research, all attributes of engagement have been found to be positively correlated with total volume of feedback collected \( (.1 < r < .2 \text{ for all, indicating small correlations}) \) and analyses have indicated that the enjoyment is positively correlated with time spent on the completion activity \( (r=.183 \text{ indicating a small correlation}) \). H5 is confirmed and H6 is partly confirmed; these results are consistent with the literature (Puleston, 2011b; Puleston & Sleep, 2011; Stevens, 2011). Besides it has been claimed (e.g., Henning, 2011; Puleston & Sleep, 2011; Stanley, 2012) that the main limitation of gamifying marketing research is linked to the influence game mechanics have on the character of the data. H7 is confirmed because several close-ended questions did get different results in both questionnaires, supporting the idea that gamification may bias the data.

Analysis shows that the higher intrinsic motives for taking part in surveys, the more respondents are engaged and close to a state of flow (measured by the four attributes of engagement that have been used in this research) \( (p \leq 0.05, \text{confirming hypothesis H8}) \). Hypothesis H9 that intrinsic motives are correlated with respondents’ sensitiveness to gamification is also confirmed \( (r=.351; p \leq 0.000) \).

Regarding the little impact gamification had on respondents’ engagement in this study, the fact that it did not have any significant effect on completion rate and that it also changed the character of some of the data may cast doubt on the relevance of the buzz currently surrounding the concept of gamification. As Adamou (2012) claims, plenty of practitioners from marketing research firms are very enthusiastic about gamification; however, this research suggests caution in its application.
References


