(Non-)Participation in Deliberation at Work: a Case Study of Online Participative Decision-Making

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Abstract

Social media are implemented by organizations to enhance productivity and knowledge sharing among employees, but they can also be used to support group deliberation in the workplace. This paper presents a case study of an online deliberation initiative involving the discussion of a contentious internal policy within an organization of around 550 knowledge workers. The deliberation process lasted 5 weeks and actively involved 167 employees. Different sources of information (user interaction logs, activity patterns, questionnaire responses) were analysed to investigate the impact of participation, or non-participation, on the level of satisfaction with the deliberation, and on the understanding of the issue discussed. The findings suggest that (i) interest is a driver for participation, but it does not explain active participation, (ii) participation, either active or passive, positively influences the understanding of the issue, (iii) satisfaction with the outcome is not related to participation, but it may support participation in future initiatives.

1. Introduction

Social media and new technology have started to affect organizational processes, enabling a new model for participation and engagement within the workplace (DiMicco et al., 2008; Grasso and Convertino, 2012; Leonardi and Vaast, 2017; Shami et al., 2015). There are several case studies of online deliberation in working environments reported in the literature, largely focused on organizational innovation (Bailey and Horvitz, 2010; Flynn et al., 2003; Muller et al., 2013). Here instead, we present a case study of an online deliberation initiative involving a medium sized organization of around 550 knowledge workers in order to discuss a contentious internal policy. The online deliberation process lasted 5 weeks, during which the employees could actively or passively participate through a web-based platform. Eventually, the solution derived from the online discussion was regarded as satisfactory by a large majority of the employees.

This case study is an example of *employee involvement* (or *employee voice*), which is an umbrella term denoting a wide range of formal and informal practices that actively involve employees in decision-making in their workplaces (Markey and Townsend, 2013). Although the term is very broad, it is relatively well established. The participation of employees in democratic forms of organizational decision-making is positively correlated to an organization's socio-moral climate, which in turn is positively correlated to the organizational commitment of the same employees (Weber et al., 2009). Participation is seen to promote job satisfaction and commitment (Scott-Ladd et al., 2006) while also positively impacting job satisfaction (Xia et al., 2016). Traditionally, participation assumed diverse forms, ranging from simple team briefings, to work councils with full employee representation and codetermination rights (Markey and Townsend, 2013). These forms of participation are often intended to subvert hierarchical organizational processes, which might be efficient for problem-solving but risk inhibiting information flows and alienating employees (Harrison, 2008).

This paper investigates the effects of participation (and a specific type of lack of participation) on an online deliberation process, along with the level of satisfaction with the outcome and increased understanding of the problem after deliberation. Our findings suggest that interest in the topic under discussion influences the decision to participate while participation and a specific type of passive participation (lurking) positively influences the understanding of the issue. However, the degree of satisfaction with the solution seems to be unaffected by participation (i.e., people may approve a solution achieved with an online deliberation tool even if they have not participated in the process).

The paper is organized as follows: the next section presents related works on deliberation, focusing on online deliberation in the workplace. Then, there is a description of the specific issue that motivated the case study deliberation, and how it was organized and run. The deliberation is then assessed, based on an analysis of the system log data, responses to questionnaires, and the content of the online discussion. Finally, the findings are presented, and some observations shared regarding the design of deliberation initiatives within working environment

2. Online deliberation in the workplace

Many studies have investigated attitudes and motivations for technology-mediated deliberation in both large (Halpern and Gibbs, 2013; Klein, 2015; Kriplean et al., 2012) and small-scale settings (Brabham, 2012; Lampe et al., 2010). Most of this research has addressed public Internet communities in which interactions are mainly informal and focused on particular shared interests. Commercial enterprises provide a rather different context for interaction (Muller et al., 2012) characterized by a shared work environment, different styles of discussion, and privacy issues. Various social media have been studied within the enterprise setting, including internal social networks (DiMicco et al., 2008; Guy et al., 2016; Shami et al., 2014), idea management systems (Bailey and Horvitz, 2010; Flynn et al., 2003), social bookmarking applications (Millen et al., 2006), corporate micro-blogs (Zhang et al., 2010), and crowdfunding platforms (Muller et al., 2013). These studies have found that employees join and use corporate social media for a number of reasons: (a) to promote their personal career (Bailey and Horvitz, 2010; DiMicco et al., 2008; Muller et al., 2013), (b) to improve relations with colleagues (Bailey and Horvitz, 2010; DiMicco et al., 2008; Guy et al., 2016; Millen et al., 2006; Muller et al., 2013; Zhang et al., 2010), (c) for the satisfaction of social connectivity at work (DiMicco et al., 2008; Guy et al., 2016), (d) to discover new information and increase their awareness of what is happening within the organization (Guy et al., 2016; Muller et al., 2013; Zhang et al., 2010), or (e) because they feel obliged due to their position in the company (Guy et al., 2016).

A number of texts have proposed psychological and communication theories when discussing the use of social media in corporate environments. These include *Common Identity and Bond* (Prentice et al., 1994), *Uses & Gratification* (Ruggiero, 2000), and *Organization Commitment* (Allen and Meyer, 1990). As suggested by these theories, and other empirical studies (Guy et al., 2016; Lampe et al., 2010), online community participation in organizational settings is mediated by both individual and organizational motivations, which affect employees' perceptions of their current and future engagement with corporate social media. However, there is still a lack of research into which specific psychosocial factors mediate social media consumption, especially considering the involvement of digital media in collaborative processes such as open deliberation.

This work focuses on a very specific social medium, a deliberation tool used in a manner unlike the examples discussed in literature, in a participatory decision making process regarding a contentious issue, rather than the more typical bottom up innovation fostering. The psychosocial factors affecting deliberation are also investigated, and how personal characteristics influence the level of involvement and type of participation in the online community.

- *Factors affecting deliberation*

In a psychosocial perspective, different personal and group factors have been found to underlie open deliberation, potentially affecting individual involvement in participation processes (Mannarini, 2011). Personality traits can influence individual attitude toward deliberation: for example, individuals who are willing to cooperate and tend to be altruistic and generous behave in more conciliatory and trusting ways and are more sensitive to organizational goal concerns (De Dreu et al., 2000), including public debates. By contrast, people who are less interested in effortful cognitive activities (low *need for cognition* (Haugtvedt and Petty, 1992)) or tend to maintain their way of viewing the world (referred to as need for *cognitive closure* (Webster and Kruglanski, 1997)) are more likely to avoid participatory situations that require a prolonged cognitive effort or in which positions might be uncertain, such as a public deliberation process.

A key factor for online participation is strong personal interest in the topic under discussion, inducing intrinsic individual motivation, which can in turn lead to active participation. Intrinsic motivation is traditionally considered as a more autonomous and self-determined form of motivation compared to external motivation (Levesque, 2011). In technology-mediated learning, especially in online education forums, research has shown that information and experiences perceived as relevant for members of online communities can improve goal achievement and perceived motivation, as well as predicting commitment and effort toward participation in online discussions (Paz Dennen, 2005). Personal interest is also an important driver for individual civil participation and civic engagement, as described in political participation literature (Ekman and Amnå, 2012).

In relation to the work context, studies suggest that motivation to participate in online social communities in the workplace might differ from other contexts. In particular, Ehrlich and colleagues (Ehrlich et al., 2014) observed that members of an enterprise social network limit their participation to communities directly related to their daily work, while online reputation and social benefits are weaker motivators. Similarly, Muller (Muller, 2012) argues against a binary distinction between passive vs. active contributors in corporate social media, suggesting that individual traits, working conditions, and social responsibilities influence the level of participation. The motivations underlying participation in corporate social media may be based on a combination of engagement, personal relevance, and individual attitude or disposition.

This work does not specifically investigate personality or cognitive traits in relation to consumption of social media, instead seeking new insights into the role of interest and personal relevance as drivers of participation in deliberation processes expressed through corporate social media. The research specifically addressed the following question:

*RQ 1: How does personal **interest** in a topic drive participation?* A key aspect of motivation for participation is personal interest in the topic. The question investigates the role of personal interest as an intrinsic motivator for participants in a workplace deliberation initiative.

- *Attitude and Motivation in Non-Participation*

Employee silence is a concept related to employee voice, and it refers to the intentional withholding of ideas, information, and opinions in organizations (Morrison, 2014). Instead of conceptualizing employee silence as the polar opposite of employee voice, some authors have argued that voice and silence can be viewed as separate multidimensional constructs characterized by differences in the motivations of employees to express versus withhold ideas, information, and opinions (Dyne et al., 2003). Considering this theoretical framework, studies on management and organization have characterised employee silence as a disengaged behaviour based on resignation (Harlos and Pinder, 2001; Morrison and Milliken, 2000), a self-protective behaviour based on fear (Harlos and Pinder, 2001; Morrison and Milliken, 2000), or a silence that is proactive and other-oriented based on altruism and cooperation (Dyne et al., 2003). Other works have discussed how employee silence can also be affected by organizational norms such as conflicts of interests between employees and employer (Anderson, 2018), perceived organization support, or employee perceptions of the external prestige of the organization (Mignonac et al., 2018). While previous studies on online deliberation tend to focus mainly on active participants and their reasons for contributing, less attention has been paid to non-participants and their motivation for not being involved.

When considering social media consumption, few studies have investigated why individuals might refrain from entering online debates. Time availability has been reported as a simple yet common reason users do not participate in online campaigns (Amichai-Hamburger et al., 2016). This motive is often expressed when users experience excessive demands on their time and participation is not a priority for them. This scenario might be especially relevant in a work environment when potential users are asked to rearrange their work schedules in order to participate in discussion. However, time availability might also be considered as a "socially acceptable" apology for deeper underlying motivations other than simple lack of time (Stephens et al., 2014). Other reasons for non-participation include participants not being aware of the opportunity to take part, and this might derive from limitations in the communication process. Privacy and security are additional factors that might deter potential users from getting involved in public discussion (Amichai-Hamburger et al., 2016).

Another explanation for non-participation is that users do not feel the need to contribute and just reading and browsing is enough for them to satisfy their needs when using an online tool (Nonnecke et al., 2006). Passive participants of this type are referred to as *lurkers*. People lurk rather than participate in an online community for a variety of reasons: browsing might be enough for many of them (Amichai-Hamburger et al., 2016); they might prefer to first learn more about the topic of conversation or wait for comments to reply to should they decide to participate (Preece et al., 2004); they might feel they do not fit well with the community or lack commitment to it (Preece et al., 2004); or they might prefer to avoid writing redundant posts or contributions (Paz Dennen, 2008).

This work explores the motivations for non-participation in a deliberation initiative in the workplace and investigates whether the level of participation impacts satisfaction with the outcomes of deliberation and/or influences understanding of the issue debated. The following research questions were formulated to these ends:

RQ 2a: *How is **satisfaction** with results related to participation?* We might expect that people who participate in a discussion are also satisfied with the results. However, satisfaction with results is not necessarily related to participation, and people may recognize the benefits of a solution even if they did not directly contribute to achieving it, or even if they did not participate at all. Conversely, people who actively participate might be dissatisfied if their ideas are not implemented. This research question tests whether the deliberation processes produced a collectively accepted solution;

*RQ 2b: Is satisfaction with results a driver for participation in **future** deliberations?* Extending the previous point, this research question investigates whether satisfaction influences the inclination to participate.

- *Impact of online deliberation processes in the workplace*

According to research in social psychology (Morrison, 2014) and management studies (Dundon et al., 2004), groups and organizations perform better (in terms of productivity and working environment) when employees share their ideas and concerns. These studies also suggest that this kind of initiative has an intermediate rather than causal correlation with improved organizational performance. It is difficult to isolate the impact of a single aspect of management practice (e.g. giving employees a voice) from other contextual factors that can influence behaviour at work. It might be expected that this also holds true when deliberation is mediated by online technology.

As regards online participation, it is commonly claimed that social media technologies can help organisations engage with their employees and promote knowledge sharing between groups of employees (Leonardi and Vaast, 2017). This appears to be achieved when the culture and leadership of an organisation embraces open communication and participation (Parry and Solidoro, 2013). Management research and organizational studies have suggested that rising use of social media within a workplace can increase communication profile and social transparency (Leonardi and Vaast, 2017). Social media enable users to perceive the communications and behaviour of co-workers, and so online participation

can positively raise awareness within organizations. However, as Stohl and colleagues defined as the "transparency paradox" (Stohl et al., 2016), increased visibility can instead lead to increased opacity rather than increased transparency, when organizations augment the information supply in order to drown out content they would rather others did not see. Employee voice and open deliberation can also potentially harm organizations. When employee voice is not guided and managed within an organization, employees may direct their voice (including complains or confidential information) into the public domain, damaging the company image and eroding employee commitment (Miles and Mangold, 2014).

Alongside the impact on performance parameters, another main outcome of deliberation processes is to broaden a community's awareness of the topic under discussion. Deliberation processes should not only be seen as an event-focused approach to problem-solving, but also as learning opportunities. Suggestions and contributions from employees can help groups to increase their understanding of issues and better frame a discussion in terms of critical points to be addressed (Morrison, 2014).

The last research question of the present study was formulated to investigate how participatory deliberation might help extend and improve understanding of the issue at hand, reaching employees that participate more or less actively in the discussion. This is summarized in the question:

RQ 3: *Does participation increase **understanding** of the issue addressed in the deliberation?* This question investigates whether the deliberation results in increased self-reported perception of understanding the issue. The authors expected that people who joined the deliberation platform would end up with an improved understanding of the issue even if they did not actively participate (lurkers).

3. The case study

The case study involved a medium-sized organization (561 workers including permanent and non-permanent employees and other professional roles, like contractors and interns) based in [omitted for review]. In late spring 2016, the organization was facing the problem of excessive accumulation of unused holiday leave by a relatively large number of employees. This problem is widespread and well known (see for example (Silverman, 2016)). It has potential negative effects on the well-being of employees and also raises financial issues and management problems. In an effort to reduce the amount of unused leave time, the organization's management decided to close the offices for two weeks during the coming holiday season, requiring all staff to take holiday leave during the closure. Many employees were unsatisfied with this decision, and numerous contractors and interns would also be negatively affected by the closure even though they were not directly involved in the issue of unused holiday leave. The decision aroused a wave of dissent and heated discussions occurred around the offices. The management decided to suspend their decision and implement an online deliberation process. This participatory approach aimed to achieve an effective, viable, and more widely accepted solution. A team including the authors was appointed for the task.

The deliberation initiative was launched on 20 May 2016 with an e-mail drop from the head of the HR Department, setting out the terms of the initiative and its duration. The invitation to participate was extended (via e-mail and wall-posters) to everyone working in the organization, regardless of whether their contract allowed for holiday leave, on the grounds that their work activities would also be affected by the outcome.

The Loomio commercial platform was selected for the online discussion and deliberation, on the basis of its ease of use and affordability. Loomio (https://www.loomio.org/) is a time-centric deliberation system (following a taxonomy proposed by Klein (2015)) offering the basic mechanisms of a web forum with some additional features designed to support group decision-making. It allows users to initiate discussion threads, post and reply to comments, and make proposals (Figure 1). Proposals are short descriptions of possible solutions, and they can be voted by other participants by either agreeing, abstaining, disagreeing, or blocking (which is intended as a strong form of disagreement).

Figure 1. A screenshot of the Loomio dashboard, showing a thread and, on the right, the result of a previous proposal (poll)

The deliberation process was organized into two phases. The initial *ideation phase* had the aim of collecting possible alternative solutions and comments. This phase was originally planned to last for two weeks but it was extended to three because after two weeks the discussions were still very lively, and it was difficult to identify viable proposals. The ideas that emerged in the first phase were then selected and refined in the second phase (*refinement phase*). The start of the second phase was marked with an e-mail from the team encouraging participants to focus on directing discussion towards definition of practical solutions. The team also summarized the ideas that had emerged up to that point and each idea was re-posted on the online platform as a separate thread in order to continue discussion in a more structured manner (participants could still propose additional ideas as new threads). Polls were used again in this second phase. Finally, after another two weeks (June 24) the discussion was terminated because the HR department needed to reach a decision on the issue. It is worth noting that participants joined the platform using their corporate e-mail addresses and posts were not anonymous.

The main alternative solution that emerged from the deliberation process consisted in the definition of annual individual targets for employees with large amounts of unused holiday leave. These targets would consume all the residual holiday leave, letting employees choose their holiday periods as long as their targets were met. Some other interesting but less effective ideas also emerged (including the possibility of donating holiday leave to co-workers with family problems, or the possibility of introducing a half-day holiday leave option).

After the initiative was officially closed, a survey was launched by the HR department to assess the acceptance of the proposed alternative solution. The survey was restricted to the 404 employees whose contracts included paid holiday benefits (thus excluding contractors, interns, and others). Of the 214 employees who participated in the survey (53% of the total), the vast majority (81%) preferred the new solution to the original one (closure of the offices over Christmas).

The next sections present data regarding the online discussion and the results of the post-hoc assessment conducted by the research team after notification of the alternative solution. The actual consumption of holiday leave was also analysed one year after the deliberation.

- *The online discussion and deliberation process*

In the days following the launch of the initiative, 167 workers joined the online platform (29.8% of those who were invited to participate). Six (6) users left before the official closure (four after three days, one after five days, and one after eleven days from the launch, none of them contributed to the discussion with posts or votes). The participants constituted a fairly representative sample of all the workers across gender, age, and job position (percentages are similar across categories as shown in

Table 1). A lower proportion of contractors joined the platform compared to employees (chi-squared $\chi^2=166.05$, df=1, p<01): this might be explained by the fact that contract workers are not directly involved in the issue of holiday leave (although they might be affected by the solutions proposed).

Table 1. Demographics of platform users and questionnaire respondents.
Percentages are calculated from the total number of workers (N=561).

Overall, participants contributed with 450 posts and 148 likes on 21 discussion threads. Of these threads, 3 were "service" threads (containing 48 posts) meant to host discussions about how to use the online platform and the nature of the issue (legal requirements, requests for data about the situation, and so on), while the others were discussions of alternative ideas (with 421 posts). A total of 120 comments were posted on discussion threads during the first phase ("ideation") and 301 during the second phase ("refinement"). Five (5) polls were opened and 99 votes were cast (M=19.4, SD=7.5 with a maximum of 24 and a minimum of 14 votes). The pattern of participation was incremental with a few periods in which participation was lower, specifically at weekends (

Figure 2). Notably, there was a marked imbalance between the number of post authors and the total number of participants: 13 people posted 80% of the comments, and of these 5 posted over 50% (Figure 3).

Figure 2. Distribution of posts over days (days off are shown in bold). The dotted line represents the cumulative sum.

Figure 3. Pattern of participation.

- *Content analysis*

In addition to the statistical analysis of the questionnaire items reported in the following sections, the content of each of the 450 posts was analysed by adopting a technique inspired by Grounded Theory (GT). In line with GT, open, axial and selective coding were used to identify responses that were similar in meaning. Recurring concepts and higher-level categories characterizing the participant contributions were then extracted. The coding tasks were performed by two authors iteratively, until a sufficient inter-rater agreement was achieved, and no new code or theme could be generated from the available data.
Table 2 shows the results of the coding, with axial and open codes, and observed occurrences. Some posts were coded and classified into more than one category, for example when the same post contained a new proposal and a request of information.

Table 2. Coding of the deliberation content.

In summary, the deliberation was generally constructive, with many inputs and constructive critiques of the proposals discussed on the platform. The discussion was mainly focused on the deliberation topic with only a few posts going off-topic (only 23 posts). The language was polite and arguments were mostly evidence based (personal experience, external

sources, quotes from other posts). The posts were generally long: on average each post contains 729.47 characters (SD=725.31) – considerably higher than message lengths observed in deliberation discussions in other social media channels such as YouTube and Facebook, where the average number of characters is reported to be less than 300 (Halpern and Gibbs, 2013).

The majority of the comments (357 out of 450 posts, 79.3%) fall into the *Contributions* and *Questions* categories. The *Contribution* category includes all the posts that presented new proposals, added new information to the discussion, answered questions or clarified points. Some posts were created to summarize previous comments, or to add information to initial ideas. Only few posts were made to make a completely new proposal, but many comments were created to elaborate previous ideas. The *Questions* category comprises requests for information (e.g. statistics on the number of holiday periods broken down by years) or questions directed to specific members (e.g. the author of a previous post, or HR staff members). Usually this questions were made to support or challenge proposals.

Posts expressing support and *agreement* were more frequent than comments expressing *disagreement* or challenging proposals (80 vs. 40 posts). The comments were generally supported by logical arguments, mainly constructive, and expressed in polite terms (possibly because the posts were not anonymous). Post expressing disagreement were generally made to criticize "one size fits all" solutions, or to challenge ideas that were considered too complex, bureaucratic or directive.

About 52 posts (11.1% of the total) regarded the *deliberation process itself*: 34 comments discussed the deliberation process, praising or criticizing the approach. The supportive comments praised the opportunities provided by the deliberation tool, which included reaching a wider audience, supporting the collaborative process, and improving awareness of the issue. Negative comments included criticism of the potential inefficiency of the process, noting the quality and quantity of some posts in contrast with the lack of information in others, and the repetitive nature of some discussions. The remaining posts (18) in this category were requests for support in using the tool, suggestions on how to improve the platform, and observations on its limitations (e.g. the large number of e-mail notifications).

Finally, the small set of *off-topic posts* (23) mainly included greetings or personal remarks exchanged between individual users.

- *Intervention assessment*

After the alternative solution survey results were announced, an assessment of the deliberation was conducted. Three versions of a questionnaire were designed and distributed via e-mail to all employees (on all types of contracts, both including and not including paid holiday benefits). One version of the questionnaire was targeted on employees who joined the platform, one on those who did not join, and one on those who abandoned the platform before the end of the initiative.

The common part of the three questionnaires included the following items (scored on a 5-point scale): *relevance of the topic*; *satisfaction* with the alternative solution; perception of increased open *understanding* of the issue. Two more items were included (scored on a 5-point scale) investigating: perception of *usefulness* of open deliberation; and *willingness to participate* in the future.

Participants were also asked to assess the deliberation process in terms of five attributes (transparent, shared, collaborative, accessible, and effective) on a scale from 1 "not at all" to 5 "extremely".

There were two forms of non-participation: never joining the platform, or joining it but not following the discussions (even passively). The Loomio platform logs did not help distinguish between who had read the posts and who had not, and so this aspect was investigated with two appraisals (on a 5-point rating scale from 1 "never" to 5 "regularly"): frequency and type of involvement in the process (reading comments, casting votes, posting, and dialogue with colleagues); and involvement during the two phases (ideation phase in the first two weeks and refinement phase in the last two weeks).

The questionnaire for people who did not join the platform and those who left before the end of the process offered a list of possible motivations (e.g., lack of time, privacy issues; see Figure 5 for the full list).

4. Results

The questionnaire was completed by 92 people who joined the platform (55% of the platform users), 73 people who did not join it (12% of those who were invited to the platform but did not join), and 4 (67%) of the people who joined but abandoned it before the end of the initiative. Table 1 shows the respondents' demographic details.

- *Descriptive statistics*

Figure 4 plots the distribution of the responses to each question while descriptive statistics are reported in Table 3. Since all distributions are not normally distributed (Shapiro Wilk tests with p<0.01), nonparametric statistics were used.

Figure 4. On the left, distribution of the responses to the rating scales for *interest on topic*, *satisfaction with alternative solution*, *increased understanding*, *usefulness of open deliberation* and *willingness of participating in future initiatives*. On the right, distribution of the responses to the rating scales for the *involvement* in the two phases.

Table 3. Descriptive statistics for questionnaire items.
(Rating scales range from negative 1 to positive 5)

Table 3 summarizes the main statistics, showing that scores are generally positive concerning the interest in the discussion topic, satisfaction with the solution, perceived understanding of the issue, usefulness of open deliberation and willingness to participate in future initiatives. As for the involvement in the two phases (only for those who joined the platform), score distributions for the two phases are different and the ideation phase was generally scored higher that the refinement phase (Wilcoxon Signed Rank test Z=-2.96, p<0.01; see Figure 4 – right panel).

Comparing the two phases, the total number of authors is similar (31 and 35 authors for phase 1 and 2 respectively; with 22 authors participating in both phases) but the number of comments posted on the second phase is significantly higher (Wilcoxon Signed Rank test Z=-3.23, p<0.01). The average number of comments per author was lower in the ideation phase (M=3.87 posts per author) compared to the refinement (M=12.02), suggesting that fewer authors account for higher posting activity in the second phase. Comparing satisfaction for the two phases, higher satisfaction scores are reported for the first phase (Friedman test: x^2=9, df=1, p<0.01).

Regarding type of involvement, participants mostly followed the discussion reading the posts (either in the e-mail notifications sent from the online platform or directly on the online platform, see Table 4). Talking with colleagues about the topic was quite frequent, while voting and posting content were less common.

Table 4. Type of involvement in the discussion ordered by frequency.
(Scale from 1 "never" to 5 "regularly")

The descriptive statistics regarding the participants' assessment of the deliberation process are presented in Table 5 and show overall high scores (items were rated significantly higher than the middle value of the scale (value =3), one sample t test, all p <.01).

Table 5. Distribution of participants' responses
to the process evaluation

Regarding the reasons for not participating (see Figure 5). "Lack of time" was the most frequently reported reason (49% of respondents, n= 38), followed by the preference for other channels for discussing the topic (13%), low interest in the topic (12%), and reluctance to learn how to use the online tool (9%); selection of more than one option was possible Additional reasons suggested in the 'others' field included different reasons such as being on vacation or on leave when the discussion was launched (not having time to participate), holding a contract that does not provide paid vacation leave (not feeling involved with the issue).

Figure 5. Reasons for not participating.

- *Classification of participation behaviour*

In order to investigate the motivations to participate, respondents were grouped based on their level of participation on the platform. The logs from the Loomio platform track posting, liking and voting behaviours, but not the actual reading content. We therefore used the questionnaire item about involvement in the two phases to estimate lack of participation for people who joined the platform.

We defined 4 classes of behaviour: (i) *active contributors* for people who posted twice or more often; (ii) *silent contributors* for people who did not post but provided likes to others' posts or voted proposals; (iii) *lurkers* for people who did not post, liked, or voted, but reported an involvement greater than 3 (the middle value, "*moderately*") in either the first of the second phase; and (iv) *non-participants* for those who did not meet the requirements for being *lurkers or* did not join the platform or quit using it.

Eventually, the distribution of the classes of the respondents was: 22 *active contributors* (13% of the respondents), 19 *silent contributors* (11%), 37 *lurkers* (22%) and 91 *non-participants* (54%, 73 did not join, 4 quit and 14 reported a low involvement in both phases).

- *Questionnaire results*

Since none of the distributions of the rating scales were normal (normality distribution was assessed using one-sample Kolmogorov-Smirnov test) and the sample size was relatively small, non-parametric Kruskal-Wallis tests and Dunn tests for multiple post-hoc comparisons were performed to assess and compare differences between user categories.

Figure 6. Distribution of scores on interest on the topic, satisfaction, understanding and future participation scales for the 4 classes

Regarding the role of interest in participation (Research question 1), there is a difference for **interest** in the topic with respect to participation (x^2=27.96, df=3, p<0.01). The Dunn's test reports significant differences between the *non-participants* category and the other three (*active contributors* vs. *non-participants* with p<0.01, *silent contributors* vs. *non-participants* with p<0.05 and *lurkers* vs. *non-participants* with p<0.05) but not among *active, silent contributors* and *lurkers*. Figure 6 shows score distribution for the different groups. As explained above, the *non-participants* class includes those who did not join the platform, and those who quit the group or reported a low involvement in both weeks. If we test the difference between the two subgroups, the Kruskal Wallis test fails to show any difference (x^2=0.33, df=1, p>0.05). The result suggests that, although non-participants declared lower interest in the topic, there was no statistical evidence that those who participated the most (*active* and *silent contributors* with respect to *lurkers*) were significantly more interested in the topic.

Regarding the impact of the satisfaction (RQ 2a), no differences were found in the score distributions for **satisfaction** among the four groups (x^2=1.53, df=3, p>0.05). Figure 6 shows score distribution for the groups. The analysis did not find a relation between satisfaction and the level of participation. Notably, satisfaction with the final result was generally high (median: 4, Table 3), regardless of the participation category. Analysing the perception of the usefulness of open deliberation at work, no difference in score distributions across the four groups were observed (x^2=4.99, df=3, p>0.05). The median is quite high: 4 out of 5 for the entire distribution and for each group but the score mean variation is higher for *non-participant*s (SD=0.95) than for the other classes (respectively SD=0.75, 0.82, 0.88 for *active contributors*, *silent contributors* and *lurker*s respectively).

Regarding the intention to participate in future initiatives (RQ 2b), respondents most satisfied with the solution (*satisfaction with the alternative solution* greater or equal to 4) showed a greater propensity to participate in **future deliberations** with respect to those that are less satisfied (*satisfaction with the alternative solution* lesser or equal to 3 or prefer not to answer). The difference is significant (Kruskal Wallis x^2=10.71, df=1, p<0.01). Similarly, if we consider the difference between those who declare that open deliberations are useful (*usefulness* greater or equal to 4) with respect to those who declare that open deliberations are not that useful (*usefulness* less than or equal to 3), the groups show a difference in the willingness to participate in future deliberations: participants who consider the deliberation as useful are more inclined to participate again in the future (median 4 and 3 respectively, Kruskal Wallis test x^2=40369, df=1, p<0.01). However, a positive correlation between satisfaction and usefulness scores is observed (Spearman rho=0.29, p<0.01). It is also worth keeping in mind that the perceived usefulness was measured after the deliberation had ended and the outcome announced. Finally, as for the willingness to participate in future deliberations with respect to the behaviour of participants (Figure 6), the Kruskal Wallis test shows a difference (x^2=8.67, df=3, p<0.05), but the Dunn's test reports only *active contributors* vs. *non-participants* as significant (p<0.05).

Finally, regarding the effect of the initial in terms of **understanding** the problem at-hand (RQ3), there is a difference in the increment of understanding with respect to the behaviour or participation (x^2=19.27, df=3, p<0.01). The Dunn's test reports significant differences between the non-participant category and the other three (active contributors vs. non-participants with p<0.01, silent contributors vs. non-participants with p<0.01 and lurkers vs. non-participants with p<0.05) but not among active contributors, silent contributors and lurkers categories (Figure 6).

- *Campaign outcome*

A follow-up analysis of the deliberation outcome was performed by observing the number of days of paid holiday leave taken by the employees before and after the campaign took place. The days of holiday leave in the three quarters following the deliberation (Figure 7) rose by 10%, 19.6%, and 19.1% respectively, compared to the same quarters the previous year (the general positive trend could be explained as the result of a number of other HR initiatives during recent years).

Figure 7. Total number of days of paid holiday taken by employees per quarter, before and after the deliberation campaign. Percentages are versus the same quarter of the previous year.

5.   Discussion

This section highlights the main implications and insights from the case study, drawing on the forum activity analysis results, the questionnaire results, and the open-ended question replies (35 comments collected). Four main themes are considered, beginning with the aspect of user participation.

User participation. In terms of participation, our case study reflects a pattern often reported in literature of a very small group of very active participants with a much larger group of less active participants and lurkers (Lampe et al., 2010; Muller et al., 2013; Nielsen, 2006; van Mierlo, 2014; Zhang et al., 2010). Many participants followed the discussion mainly through reading and talking with their colleagues. In this study, there was a further group of people who chose not to get involved in the discussion at all, even if they would be affected by the outcome of the deliberation (several of them did participate in the final survey issued by the management in order to choose between the original solution, mandatory holiday closure, and the one that emerged from the deliberation process based on individual plans). It is interesting to note that the group of most active participants was no larger than a typical committee that the organization might have appointed to investigate the problem and suggest a solution. In fact, the alternative solution achieved through open deliberation was not new to the management, and a similar solution had been proposed several years earlier but did not make it through the hierarchical decision making process and was eventually abandoned.

As might be expected, the most under-represented category of participants was the contracts and interns (around 6% participated in the online discussion). This might depend on the particular organizational context in which the deliberation took place: as a knowledge enterprise, many employees (especially contractors and junior positions) have flexible work hours, options to telework or work from home, and their contracts are usually short-term. For these reasons, they might have been less inclined to get involved in active discussion on the topic.

Result of the deliberation. Satisfaction with the alternative solution (although not original) was very high, as demonstrated by the results of the questionnaires and survey. An interesting aspect is that satisfaction with the final outcome appears not to be related to the level of participation (including workers that chose not to get involved at all). However, participation in discussion did positively increase understanding of the issues, regardless of the level of participation.

Employee voice and silence. Even if the final solution was discussed and defined by a restricted group of individuals, a much larger group appears to have benefitted from following the discussion in terms of increased understanding of the contentious issue discussed, even without active participation. These results suggest that lurking behaviour can also be fruitful and positive for employees and the organization. In contrast, those who avoided all involvement did not share any increased understanding (although some of them did appear to appreciate the alternative solution). Lurking behaviour might therefore be considered as a way of ameliorating organizational silence. Lurking is known to be a learning strategy, in particular in the presence of knowledge sharing barriers (Neelen and Fetter, 2010) and many of the motivations of lurkers can be compared to those of silence (Sun et al., 2014).

Usefulness. Regarding the participants' perception of the usefulness of open deliberation, the overall score was quite high, with wider variation among the less active participants and non-participants, even though without statistical relevance. While the willingness to participate is significantly higher among the most active participants compared to those who did not participate, there is not much difference compared to the other group. Both these measurements seem to be affected by the level of satisfaction with the solution: it was observed that those who were more satisfied with the alternative solution tend to consider this approach more useful and are more willing to participate in the future. This may suggest that successful experiences of open deliberation in an organization might encourage participation and improve the company climate. Similarly, the assessment of the process was positive overall in terms of perception of transparency, sharing, collaboration, and accessibility. The only somewhat lower measurement was effectiveness, but some of the users who scored this item lower also reported in the comment box that they had difficulty using the tool, suggesting that this item might have been misinterpreted by a number of participants.

Issues preventing participation. There is clear evidence that lack of interest played a crucial role at least in the choice of whether or not to get involved. However, lack of time available for active participation, even to simply read the posts, was cited as the main reason for non-participation. Participating in the deliberation did effectively require some effort because the discussion was very intense, focused on a very contentious issue, and limited to a relatively short period of time. The drop-off in participation during the second phase may be evidence for this and suggest that this level of effort cannot be sustained beyond a certain time. Part of the problem could be that the tool used does not offer specific functions to help collaboratively develop a solution. Furthermore, the questionnaire revealed that some respondents who refrained from participation reported that they preferred other means of deliberation (10 responded to the non-participant questionnaire), or thought that it was not up to them to decide this issue (6 participants). This aspect may have something to do with the sense of belonging to the organization (Allen and Meyer, 1990) and deserves further investigation. Concerns of privacy and public exposure apparently were not a major barrier to participation. This aspect again deserves further investigation, since the questionnaire was not anonymous and might not have been the right instrument for investigating this aspect.

- *Limitations*

The study suffered from some inherent limitations. It was a single case study and most of the findings are based on data obtained from a non-anonymous questionnaire that could be prone to influences of social desirability, which might be particularly marked in a work context (Donaldson and Grant-Vallone, 2002). Only a subset of potential antecedent factors driving (non-) participation were considered. Given the sensitivity of the topic under discussion and the organizational climate around this open deliberation, it was decided not to investigate social dynamics such as conflict or framing (Cramton, 2001; da Cunha and Orlikowski, 2008), nor to measure sensitive constructs such as organization commitment (Ruck et al., 2017) and formality (Brooks, 2017). The technological aspects of the platform were not fully addressed since the focus was mainly on understanding individual motivations for (non-) participation. While these are extensively discussed in the literature (Grasso and Convertino, 2012; Klein, 2015), there remains plenty of scope for future research into how the design of online platforms might be improved in order to extend participation.

6. Conclusions and implications for practice and research

The study presented in this paper provided new insight into participation in technology-mediated decision-making processes at work, highlighting the role of personal interest in the decision to participate and the effect that participation (or lack of) has on the satisfaction with outcomes and the understanding of the issue at hand.

Three main implications for the design of open deliberation initiatives in workplace settings emerge from the results of the present case study.

The value is in the process, not (only) in the outcome. Although the alternative solution was eventually deemed better and more acceptable than the original decision, it is clear that the value of the initiative did not lie in the creativity of defining a radically new solution. The authors sustain that the real value was that the open discussion improved understanding of the diverse facets of the issue. Not only did participants report a higher level of understanding compared to non-participants, but there was also greater involvement of participants in the *ideation* phase (when the issue was discussed, not without contention) than in the *refinement* phase. Following Fishbein and Ajzen's Theory of Reasoned Action (Fishbein and Ajzen, 1977), it can be argued that a better understanding of an issue will promote a more positive attitude and eventually a stronger resolve to solve the issue (the importance of employees' positive attitudes to organizational changes, among other things, is well established in literature (Avey et al., 2008)). The authors also sustain that lurking behaviour can be encouraged as a way to ameliorate employee silence in an organization.

The tool is important but efficiency is not the whole story. Although the usability of Loomio was not directly assessed, there is some evidence that this tool might not be the best choice for highly contentious discussions in which an agreement needs to be reached in a short time. This is not an original observation as such: time-centric deliberation systems that include e-mail, blogs, and web forums, have been observed to suffer from shortcomings that can undermine participation (Klein, 2015). However, the authors believe that the unplanned "inefficiency" of the first phase might have been partially beneficial to the process. Initially two separate phases were not planned and participants were invited to use the threads to propose and efficiently negotiate solutions. However, the energetic elaboration of the features of the issue and the strong desire to express different points of view was deemed important both for practical reasons (the legal and financial intricacies of the problem were not fully understood by the majority of workers) and for establishing the trust that the management was willing to abide by the process. Therefore, in this case, a degree of inefficiency (in terms of free discussion with frequent flames and other more moderate confrontations) seemed to have had a significant positive impact, and it is reasonable to believe that the increased level of understanding and perceived transparency of the process might derive from the discussions of the first phase, rather than the more efficient proposal management of the second phase. The beneficial role of disagreements in deliberations is quite well understood (Price et al., 2002). A qualitative indicator of the importance of this discussion is the fact that the HR department expressed interest in implementing some of the proposals that emerged during the discussion, even if these did not comprise part of the ultimate solution as presented.

***Repetita juvant* (repetition is useful).** The present discussion included a single case study and so it provides no direct evidence that frequent use of this participatory approach for decision-making might be beneficial for organizations. This experience does suggest that willingness to participate in future initiatives does not depend so much on current participation but rather on satisfaction with the outcome. Similarly, those who consider open deliberation more useful are in turn more willing to participate again in the future. Satisfaction and usefulness clearly correlate and the two aspects might be influenced by the same dynamic. The results thus appear to suggest that adopting a participatory approach to tackle important issues might establish a positive feedback loop, which in turn might increase participation (and satisfaction) over time. This can be explored in future studies, designed to investigate how active participation in subsequent decision-making can be affected by online initiatives and the experience of the participants.

7. Note

Loomio (https://www.loomio.org/) was used in the study aa platform for online group discussions and decision-making. The authors do not have any relationship with the company other than having subscribed to their standard plan for the duration of the study.

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List of Tables

		Workers population	Platform participants		Questionnaire respondents	
			Freq.	%	Freq.	%
Total number		**561**	**167**	*29.8*	**169**	*30.1*
Gender	Female	183	54	29.5	72	39.3
	Male	378	113	*30.5*	97	*26.1*

Age	20-30	83	10	*12.0*	7	*8.4*
	30-40	188	54	*28.7*	65	*34.6*
	40-50	143	53	*38.5*	57	*39.9*
	50+	147	48	*32.7*	40	*27.2*
Job position	1 (highest)	27	13	*35.1*	11	*29.7*
	2	60	20	*33.3*	18	*30.0*
	3	133	68	*49.6*	62	*45.3*
	4	75	33	*34.7*	34	*35.8*
	5 (lowest)	126	33	*14.2*	44	*19.0*
Category	Employee	421	158	37.5	152	36.1
	Contractors	140	9	*6.4*	17	*12.1*

Table 1. Demographics of platform users and questionnaire respondents.
Percentages are calculated from the total number of workers (N=561).

Axial coding	Open coding	Number of occurrences
Contributions	Report information, Give clarifications, Reply to questions, Make a proposal, Integrate new information	337
Questions	Ask for information, Ask for clarifications	103
Agreement	Support a previous post, Support a proposal	80
Disagreement	Disagree with a previous post, Disagree with a proposal, Report criticalities in a proposal	40
On the process	Posts regarding the deliberation process, Comments on the Loomio platform	52
Off-topics	Off-topics (e.g. greetings, personal remarks)	23

Table 2. Coding of the deliberation content.

Item	Responses			N	Median	Mean	St. Dev.
	1 or 2	**3**	**4 or 5**				
Interest on topic	31 (18%)	58 (34%)	81 (48%)	170	3	3.44	1.04
Satisfaction with solution	34 (20%)	68 (40%)	107 (63%)	170	4	3.02	1.66
Increased understanding	48 (28%)	39 (23%)	83 (49%)	170	3	3.19	1.19
Usefulness of open deliberation	10 (6%)	33 (19%)	127 (75%)	170	4	4.04	0.9
Willingness to participate in the future	16 (10%)	55 (32%)	99 (58%)	170	4	3.65	0.96
Involvement Phase 1 (Ideation)	23 (25%)	25 (27%)	44 (48%)	92	3	3.35	1.04
Involvement Phase 2 (Refinement)	23 (35%)	28 (30%)	32 (35%)	83	3	3.07	1.08

Table 3. Descriptive statistics for questionnaire items.
(Rating scales range from negative 1 to positive 5)

Type of involvement	Median	Mean	St. Dev.
Reading posts from e-mails	4	3.42	1.37
Talking with other colleagues	3	2.98	1.19
Reading posts on the website	3	2.53	1.17
Voting on polls	2	2.04	1.18
Posting comments	1	1.64	1.03

Table 4. Type of involvement in the discussion ordered by frequency. (Scale from 1 "never" to 5 "regularly")

How would you rate the process?	Median	Mean	St. Dev.
Transparent	4	3.78	1.04
Shared	4	3.58	0.99
Collaborative	4	3.65	1.04
Accessible	4	3.89	1.04
Effective	3	3.29	1.03

Table 5. Distribution of participants' responses to the process evaluation

List of Figures

Figure 1. A screenshot of the Loomio dashboard, showing a thread and, on the right, the result of a previous proposal (poll)
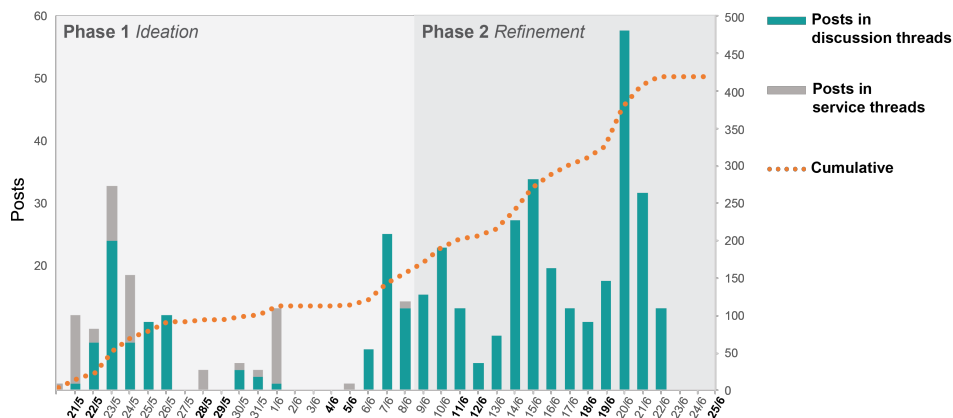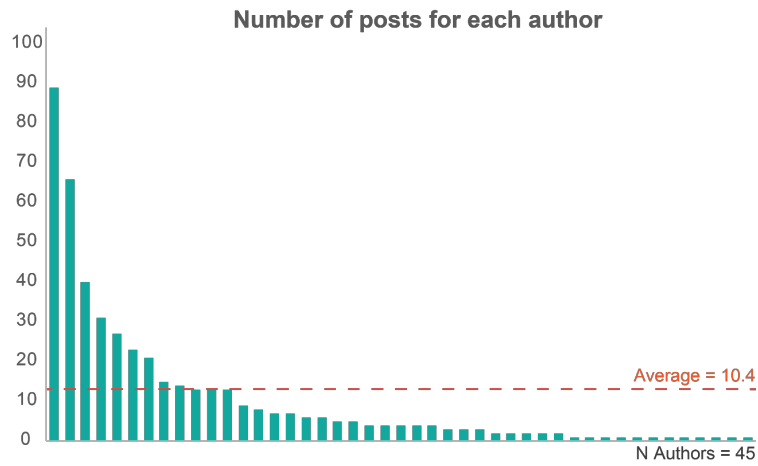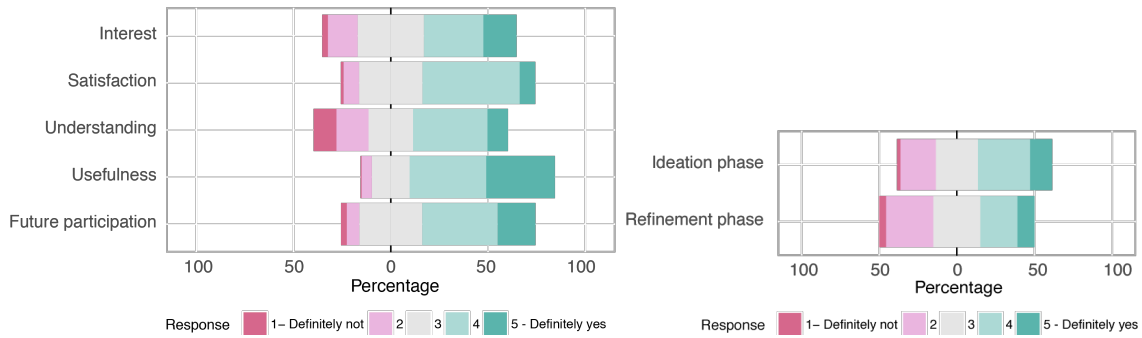

Figure 2. Distribution of posts over days (days off are shown in bold). The dotted line represents the cumulative sum.
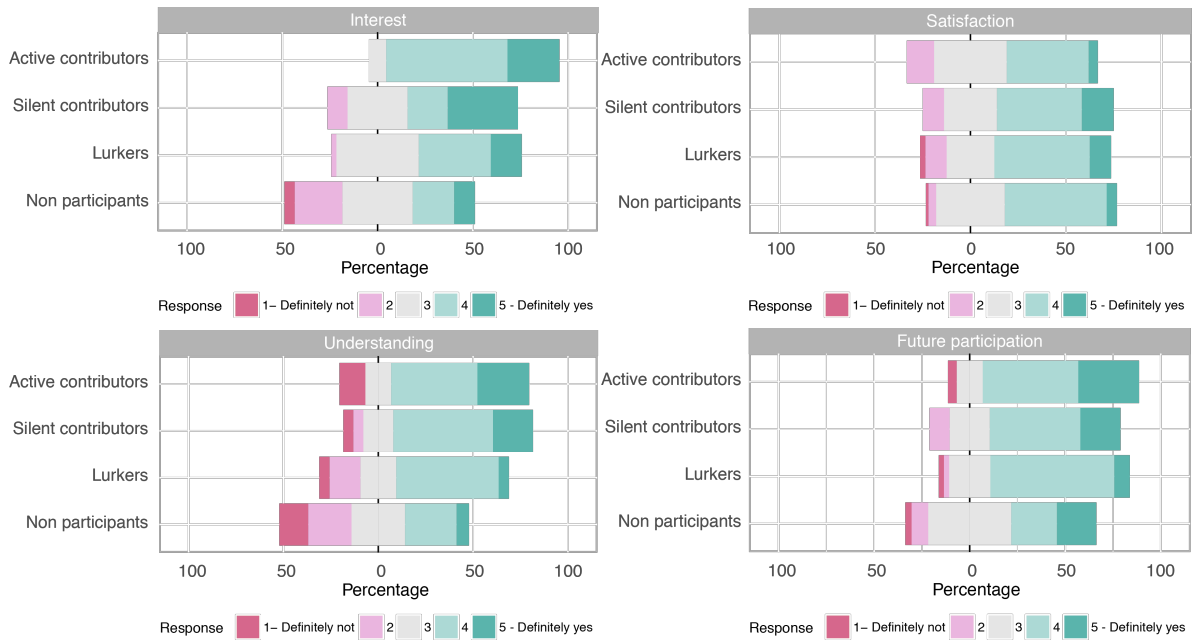
Number of posts for each author

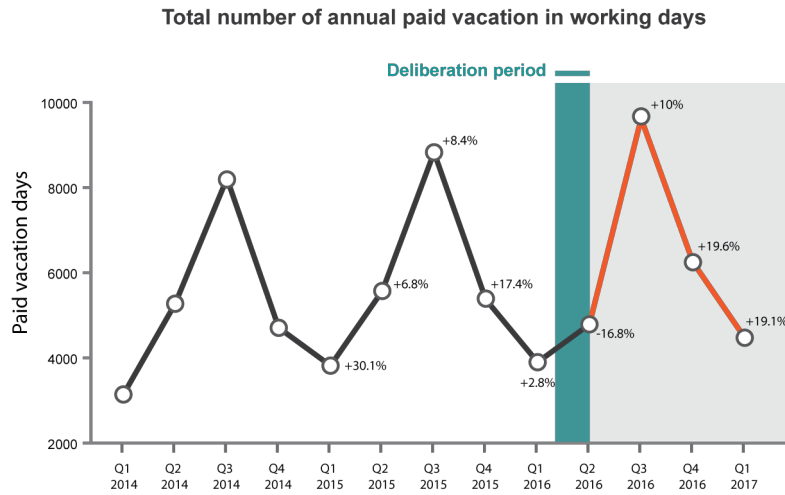**Figure 3. Pattern of participation.**

Figure 4. On the left, distribution of the responses to the rating scales for *interest on topic*, *satisfaction with alternative solution*, *increased understanding*, *usefulness of open deliberation* and *willingness of participating in future initiatives*. On the right, distribution of the responses to the rating scales for the involvement in the two phases.

Why did you not join the platform?
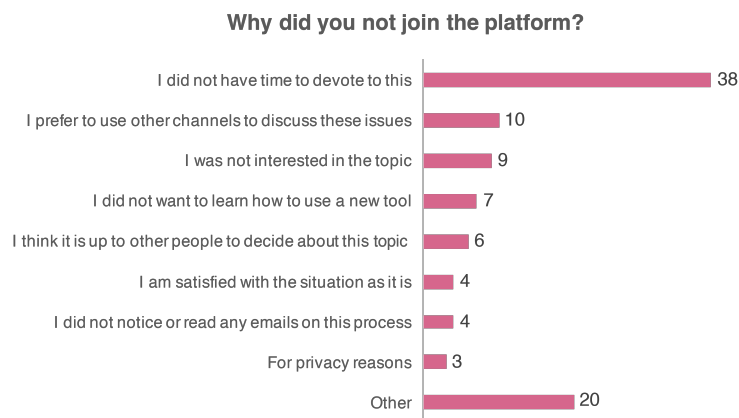
Figure 5. Reasons for not participating.

Figure 6. **Distribution of scores on *interest on the topic, satisfaction, understanding* and *future participation* scales for the 4 classes**

Figure 7. **Total number of days of paid holiday taken by employees per quarter, before and after the deliberation campaign. Percentages are versus the same quarter of the previous year.**