



Article

Deliberative Quality in Digital Institutional Settings: The Role of Participation Practices and Digital Empowerment

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Abstract

Digital platforms became central to institutional participation during the COVID-19 pandemic, yet little is known about how participants experience digitally mediated decision-making processes and which conditions foster high-quality deliberation. Guided by an ecological perspective from community psychology, this study examined university staff’s experiences with platform-based participation, focusing on the relationship between online participation practices, digital empowerment, and perceived deliberative quality. In November 2021, faculty and technical/administrative staff at an Italian university (N = 673) completed an online questionnaire assessing platform use (Microsoft Teams), participation practices, perceived benefits and limitations of digital platforms, digital empowerment, and deliberative quality (critical awareness and engagement). Exploratory factor analyses supported multidimensional measures of platform perceptions and deliberative quality. Hierarchical regression analyses showed that interaction rules and perceived improvements in participation processes were the strongest predictors of deliberative quality. Platform benefits related to participatory quality were positively associated with both outcomes, while efficiency-related benefits showed a small negative association with critical awareness. Digital empowerment uniquely predicted deliberative engagement above and beyond participation practices. Overall, results suggest that deliberative quality in digital institutional settings depends more on structured interaction and empowerment-supportive conditions than on platform use frequency, with implications for designing sustainable online and hybrid participatory processes.

Keywords: deliberative quality; digital empowerment; online institutional participation; participatory decision-making; university community; digital platforms; COVID-19 pandemic



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1. Introduction

The COVID-19 pandemic represented an unprecedented disruption to social, organizational, and institutional life, profoundly transforming the ways in which participation and decision-making processes were enacted. Among its many consequences, the pandemic accelerated a large-scale shift from face-to-face interaction to digitally mediated forms of work, learning, and governance. In higher education institutions, as in other public organizations, decision-making processes traditionally grounded in in-person meetings—such as collegial bodies, commissions, and working groups—were rapidly transferred to online platforms. These bodies constitute key components of university governance structures,

through which institutional decisions are discussed, negotiated, and legitimized. This forced and prolonged transition created a unique context in which digital participation became not an optional complement but the primary mode through which institutional deliberation and collective decision-making were conducted.

Participatory decision-making processes are a key component of institutional and social sustainability, as they contribute to inclusive governance, long-term engagement, and the legitimacy of collective decisions. From a community psychology perspective, citizen participation is not merely a procedural mechanism for decision-making in community and organizational settings aimed at improving social, economic, and environmental conditions [1]. Rather, participation is understood as a psychosocial process through which individuals may experience agency, influence, competence, a sense of community, and inclusion within collective settings. Participation plays a central role in the development of psychological empowerment, conceptualized as a dynamic process involving perceived control, critical awareness, and participatory behaviors [2–4], and contributes to social well-being [5,6]. Accordingly, the quality of participation cannot be assessed solely in terms of formal outcomes or institutional efficiency; it must also take into account its positive effects on participants, such as engagement, perceived relevance and impact of their contributions, critical reflection, skills development, empowerment, and social well-being. These experiential outcomes are crucial, as they strengthen participants' motivation to engage in participatory processes and remain involved over time [7]. These considerations also resonate with broader theoretical debates within the literature on deliberative democracy. Deliberative democratic theory emphasizes that legitimate collective decisions should emerge from inclusive processes of discussion among those affected. Within this framework, scholars have highlighted both the *epistemic dimension* of deliberation—namely its potential to improve the quality of collective decisions through the exchange of diverse perspectives—and its *participatory dimension*, which stresses the importance of including all participants, providing equal voice, and fostering the development of civic competences. From this perspective, the quality of deliberation cannot be reduced to decision outcomes alone. It also depends on whether participatory processes enhance meaningful involvement, mutual learning, and empowerment. Community psychology perspectives align particularly with this participatory strand of deliberative democracy by emphasizing the experiential and empowerment-related outcomes of participation. From a sustainability perspective, this points to the sustainability of governance processes themselves: decision-making becomes more sustainable when participation is inclusive, meaningful, and able to maintain engagement and legitimacy over time, particularly in complex organizations such as universities. In this sense, institutional sustainability depends not only on “what” decisions are made, but also on “how” they are produced—through participatory processes that can remain robust, legitimate, and adaptable in the long run, including in digital and hybrid settings.

The rapid digitalization of participatory and decision-making processes during the pandemic raises critical questions about whether digitally mediated settings can support high-quality participation experiences comparable to those associated with in-person participation [8]. Existing research on online participation and deliberation has increasingly examined the role of digital platforms in supporting consultation, opinion exchange, and collective decision-making [9–11]. Research on digital deliberation, in particular, examines how information and communication technologies (ICTs) can support reasoned discussions among participants to make informed collective decisions [12]. Recent studies have observed that even in times of crisis, such as the COVID-19 pandemic, deliberation can be resilient by moving onto online platforms [13,14]. While this literature highlights the potential of digital platforms to enhance accessibility, efficiency, and transparency, it has

predominantly focused on structural features of platforms [15], procedural criteria, or objective outcomes of participation. Far less attention has been paid to how participation in digital environments is experienced by participants themselves and to the potential of digital platforms to enhance the quality of participatory and deliberative processes from a psychosocial and empowerment-oriented perspective.

Community psychology's ecological approach offers a useful framework for addressing this gap. From this perspective, participatory processes are embedded within specific settings—physical, social, and organizational environments whose structural characteristics shape opportunities for action, interaction, and meaning-making. Digital platforms can thus be conceptualized as participatory settings whose design features, interaction rules, and facilitation practices may either enable or constrain empowerment, engagement, and deliberative quality. Factors such as the presence of interaction rules, moderation of discussions, and the integration of online and offline participation are therefore likely to play a crucial role in shaping participants' experiences of digital deliberation.

In addition to setting-level characteristics, individual-level factors such as digital empowerment may be central to understanding variations in participation quality. Digital empowerment refers to individuals' perceived competence, autonomy, and confidence in using digital technologies to participate effectively in collective processes [16]. While digital skills and access are often treated as prerequisites for participation, community psychology perspectives emphasize that empowerment is not a static attribute but a relational and developmental process that unfolds through participation itself. Experiences of meaningful participation may reinforce individuals' sense of digital empowerment, creating a reciprocal and potentially self-reinforcing relationship [17,18].

Despite the growing relevance of digitally mediated participation, empirical research examining the quality of participants' experiences in online deliberative settings remains limited, particularly within institutional contexts. Moreover, few studies have simultaneously considered participation practices, empowerment processes, and perceived deliberative quality from the perspective of those directly involved. Addressing this gap and understanding these dynamics are crucial for the sustainability of institutional governance systems given that digital and hybrid forms of participation are likely to remain a permanent feature of institutional governance beyond emergency contexts like the pandemic.

The present study seeks to address these questions by examining university personnel's experiences of participation in decision-making processes supported by digital platforms during the COVID-19 pandemic. Specifically, the study investigates how online participation practices (e.g., frequency of platform use, integration of online and offline participation, presence of interaction rules and moderation), participants' evaluations of the benefits and limitations of digital platforms, and their digital empowerment are associated with perceived quality of deliberation. By focusing on participants' experiences, this study aims to advance understanding of the psychosocial conditions that enhance the quality of participation in digital institutional settings and to inform the design of participatory processes that foster empowerment, engagement, and meaningful deliberation.

2. Materials and Methods

2.1. Procedure and Sample

The research protocol and study instruments were approved by the Ethics Committee of the University of (Bologna) (Protocol No. 0314861, 25 November 2021), following preliminary approval by the Ethics Committee of the Department of Psychology in October 2021. The study was conducted using an online questionnaire developed in Qualtrics platform and distributed to faculty members and technical/administrative (T/A) staff at the University of (Bologna). The questionnaire was sent to the institutional mailing list

(3.002 academics and 3.008 administrative staff, 6.010 contacts in total), which was obtained in advance from the University's Communications Department. Data collection took place in November 2021, approximately 20 months after the implementation of COVID-19 lockdown measures, at a time when all participants had accumulated substantial experience in using online platforms to support work-related activities. At the time of data collection, institutional safety policies continued to recommend or require the use of online platforms for meetings of formal bodies as well as for many informal interactions.

A total of 826 participants responded to the survey (about 13.7%); for the present study we included only the 673 respondents who fully completed the questionnaire (11.2%). Of these, 38.2% identified as men, 57.9% as women, 0.3% as non-binary, and 3.6% chose not to disclose their gender. Participants' ages ranged from 26 to 69 years ($M = 50.20$, $SD = 9.23$). The majority of participants were born in Italy (96.4%), and 61.4% reported having children. With regard to organizational roles, 290 participants (43.1%) were professors or researchers, while 383 (56.9%) belonged to the technical/administrative staff.

As procedural remedies to address common method bias, we ensured anonymity and confidentiality. Ensuring participant anonymity and confidentiality reduces social desirability bias and encourages honest, less guarded responses. Moreover, we improved item design by avoiding ambiguous items and keeping questions simple.

2.2. Measures

2.2.1. Online Participation Practices Within Institutional Settings

Participation practices were assessed by considering the frequency of use of online platforms (Microsoft Teams) for activities within institutional bodies since the beginning of the COVID-19 pandemic ("Since the beginning of the emergency, how often have you used Microsoft Teams in relation to your activities in university bodies?"). Responses were provided on a 5-point scale ranging from *less than once a month* (1) to *more than once per week* (5).

Integration between online platforms and in-person activities was assessed with one item ("To what extent has the use of digital tools been integrated with in-person activities in university bodies?"), rated on a 5-point Likert scale, from *not at all* (1) to *a lot* (5).

The presence of interaction rules in online activities was assessed using three ad hoc items measuring the extent to which interaction rules had been developed during formal and informal online discussions and activities (e.g., "Have formal/informal interaction rules [e.g., muting microphones, regulated use of cameras, speaking turns] been developed during discussions/group activities conducted via digital platforms?"), as well as the degree of facilitation or moderation of group discussions ("Have the discussions/group activities been facilitated or moderated?"). Responses were provided on a 5-point Likert scale ranging from *not at all* (1) to *a lot* (5).

2.2.2. Improvement of Participation Through Online Platforms

Perceived improvement of participation in institutional bodies due to the use of online platforms was measured using two items. The first item assessed overall satisfaction with platform use ("In general, how satisfied are you with the use of digital platforms in the activities of the institutional bodies you have participated in?"), rated on a 5-point scale, from *not at all* (1) to *a lot* (5). The second item evaluated perceived changes in participation quality ("With the use of digital tools, the activities of the university bodies you have participated in have..."), using the following response alternatives: *worsened a lot* (1), *slightly worsened* (2), *neither worsened nor improved* (3), *slightly improved* (4), *improved a lot* (5).

2.2.3. Development of Digital Skills

Participants were asked to indicate their level of agreement with the statement: “The use of digital platforms (e.g., Teams) has allowed me to develop new skills.” Responses were provided on a 5-point Likert scale, from *completely disagree* (1) to *completely agree* (5).

2.2.4. Perceived Benefits and Limitations of Digital Platforms

Perceived benefits and limitations of digital platforms were assessed using 24 items adapted from Alcaide-Muñoz, Hernández and Caba-Pérez [19]. Participants were asked to evaluate the extent to which, compared to in-person participation, the use of digital platforms allows or limits participation (“In comparison with in-person participation, the use of digital platforms allows. . .”). Items referred to both perceived benefits (e.g., saving time, saving money, improving work quality, enabling more effective participation, supporting decision-making, enabling experimentation with new decision-making processes) and perceived limitations (e.g., dependence on infrastructure quality, insufficient IT skills, technical limitations of platforms, security concerns). Response alternatives ranged from *completely disagree* (1) to *completely agree* (5).

2.2.5. Digital Empowerment and Perceived Ease of Use of Platforms

Digital empowerment was assessed using six items adapted from Pietrantonio and Prati’s [20] Italian validation of Spreitzer’s psychological empowerment scale [21]. This concept, based on community psychology theory, aims to capture participants’ self-perceptions when using digital technologies. Items measured participants’ perceived competence, autonomy, and confidence in using digital platforms (e.g., “I feel confident in my skills to use digital platforms”, “I have autonomy in deciding how to use digital platforms”). Responses were provided on a 5-point Likert scale, from *completely disagree* (1) to *completely agree* (5). A composite digital empowerment score was computed, demonstrating high internal consistency (Cronbach’s $\alpha = 0.90$).

In addition, we measured participants’ perceived characteristics of the digital technology, and in particular, perceived ease of use of digital platforms. Based on the literature on technology acceptance, this construct was assessed using three items adapted from Davis [22] and Choi and Song [23] (e.g., “It is easy to learn how to use digital platforms”, “It is easy to find menus and functions”). Responses were provided on a 5-point Likert scale, from *completely disagree* (1) to *completely agree* (5). A composite score was computed, with high internal reliability (Cronbach’s $\alpha = 0.90$).

2.2.6. Quality of Deliberation

Perceived quality of deliberative and decision-making processes was measured using 11 items adapted from Nabatchi [24] and Gastil, Black, and Moscovitz [25], assessing perceptions of democratic discussion within deliberative groups. Participants were asked to indicate their level of agreement with each statement, from *completely disagree* (1) to *completely agree* (5), referring to meetings and activities conducted via digital platforms. Items assessed aspects such as opportunities to express opinions, mutual respect, understanding of others’ contributions, engagement and attention during discussions, exploration of alternative options, creativity in problem-solving, and critical reflection.

The questionnaire was preceded by an information sheet and an informed consent form. Only participants who provided consent were allowed to proceed to the questionnaire.

3. Results

3.1. Online Participation Practices in Institutional Settings

Participants reported a generally high frequency of use of digital platforms for activities within university bodies since the beginning of the COVID-19 pandemic. Approximately two-thirds of respondents ($N = 424$, 64.1%) reported using platforms more than once per week, while 237 participants (35.9%) reported using them once per week or less. Overall, 41.1% of the sample ($N = 259$) reported a high or very high level of integration between digital tools and in-person activities in university bodies. Integration was perceived as moderate or low by 39.0% of participants ($N = 246$), whereas approximately one-fifth of the sample ($N = 125$, 19.8%) reported no integration at all.

Administrative staff reported higher levels of online–offline integration than academic staff (high/very high integration: 48.0% vs. 33.0%; moderate/low integration: 34.5% vs. 44.4%; no integration: 17.5% vs. 22.6%). In addition, perceived integration was higher among younger participants (Pearson's $r = -0.158$, $p < 0.001$).

With regard to digital interaction rules (e.g., muting microphones, regulated use of cameras, turn-taking, and moderation), results indicated a moderate level of rule development in both formal ($M = 3.36$, $SD = 1.02$) and informal ($M = 3.51$, $SD = 0.92$) settings, as well as a moderate level of facilitation or moderation of online activities ($M = 3.31$, $SD = 0.94$). Correlations among the items ranged from $r = 0.35$ to $r = 0.45$ ($p < 0.001$). A composite score for interaction rules was computed ($M = 3.41$, $SD = 0.74$). The reported use of interaction rules and moderation was higher among female ($M = 3.50$) participants than male ($M = 3.29$) ($p < 0.001$) and among administrative staff ($M = 3.51$) than academic staff ($M = 3.28$) ($p < 0.001$).

3.2. Improvement of Participation Through Online Platforms and Development of Digital Skills

Responses to the two items assessing satisfaction with and perceived improvement of participation were strongly correlated (Pearson's $r = 0.66$, $p < 0.001$); therefore, a composite measure of satisfaction with online participation was computed ($M = 3.53$, $SD = 0.83$). Higher levels of satisfaction and perceived improvement were reported by female participants compared to male participants ($M = 3.67$ vs. $M = 3.36$, $p < 0.001$) and by administrative staff compared to academic staff ($M = 3.71$ vs. $M = 3.30$, $p < 0.001$). In addition, perceived improvement in participation decreased with age (Pearson's $r = -0.10$, $p < 0.01$).

With regard to the perceived impact of participation via digital platforms on the development of digital skills, the mean score was 3.69 ($SD = 1.03$), with 67.7% of participants reporting that their skills had improved. Significant differences emerged by gender and professional role, indicating higher perceived skill improvement among female participants compared to male participants ($M = 3.91$ vs. $M = 3.40$, $p < 0.001$) and among administrative staff compared to academic staff ($M = 3.85$ vs. $M = 3.48$, $p < 0.001$).

3.3. Perceived Benefits and Limitations of Digital Platforms

An exploratory factor analysis with Varimax rotation was conducted on the 24 items assessing perceived benefits and limitations of digital platforms. Four factors with eigenvalues greater than 1 were identified.

The first factor accounted for 32.09% of the total variance and comprised 14 items describing improvements in the quality of participation processes (e.g., greater transparency of decision-making processes and enhanced monitoring of decision-making). This factor showed excellent internal consistency (Cronbach's $\alpha = 0.95$).

The second factor explained 13.23% of the variance and included four items capturing efficiency-related benefits of digital platforms, such as time and cost savings and increased flexibility in the time and place of participation (Cronbach's $\alpha = 0.74$).

The third factor accounted for 10.32% of the variance and consisted of four items describing limitations of online participation related to infrastructural constraints and users' digital skills and training (Cronbach's $\alpha = 0.75$).

The fourth factor explained 7.44% of the variance and included two items reflecting limitations associated with privacy and security concerns. The two items were strongly correlated ($r = 0.82, p < 0.001$). For each factor, composite scale scores were computed (see Table 1).

Table 1. Perceived benefits and limitations of digital platforms: Factor Analysis (Varimax rotation) (loadings > 0.40).

Compared with In-Person Participation, the Use of Digital Platforms Allows	F1 Improved Quality	F2 Improved Efficiency	F3 Structural Limitations	F4 Reduced Safety and Privacy
More transparent decision-making processes	0.86			
Better control over the decision-making process	0.85			
Greater participation in decision-making	0.79			
Greater trust in the university institution	0.75			
Simpler decision-making processes	0.74			
Better communication and interaction among colleagues	0.73			
Better effectiveness of activities	0.73			
Better quality of work	0.71			
To pay more attention	0.69			
Greater productivity	0.66			
Experimentation with entirely new decision-making processes	0.66			
They allow me to participate more effectively	0.65			
Greater participation in activities	0.63			
They are useful for me to make decisions	0.60			
To have greater flexibility		0.73		
To save time		0.70		
To save money		0.67		
Digital platforms (e.g., Teams) allow me to participate anytime and anywhere		0.63		
Meets the lack of specific training			0.78	
Is limited by the available infrastructure in the place of use (e.g., network quality, Wi-Fi access, etc.)			0.74	
Is hindered by insufficient computer skills			0.72	
Encounters technical limitations of the platforms used			0.71	
Poses security issues				0.90
Poses privacy issues				0.89
Explained Variance	32.09%	13.23%	10.32%	7.44%
M (SD)	3.09 (0.87)	4.11 (0.75)	3.28 (0.81)	2.85 (1.11)

Female participants, in comparison with males, reported more improvements in the quality of participation processes and in participation efficiency, and more structural limitations of digital platforms. In addition, greater improvements in participation quality were reported by administrative staff than academic staff (Table 2).

Table 2. Differences according to sociodemographic variables (*M* and *SD*).

Variables	Male	Female	Academics	Adm Staff
Digital Interaction Rules	3.29 (0.77)	3.50 (0.72) ***	3.28 (0.70)	3.51 (0.76) ***
Satisfaction for Online Participation	3.36 (0.87)	3.67 (0.75) ***	3.30 (0.87)	3.71 (0.75) ***
Development of Digital Skills	3.40 (1.12)	3.91 (0.88) ***	3.48 (1.05)	3.85 (0.98) ***
Improved Quality (Benefits)	2.92 (0.88)	3.22 (0.82) ***	2.76 (0.88)	3.34 (0.78) ***
Improved Efficiency (Benefits)	3.99 (0.83)	4.20 (0.67) ***	4.05 (0.82)	4.15 (0.69)
Structural Limitations (Benefits)	3.18 (0.85)	3.34 (0.77) *	3.27 (0.77)	3.29 (0.83)
Reduced Safety and Privacy (Benefits)	2.83 (1.16)	2.85 (1.08)	2.88 (1.15)	2.83 (1.09)
Critical Awareness (Quality of deliberation)	4.01 (1.15)	4.23 (1.20) *	3.84 (1.19)	4.37 (1.12) ***
Engagement (Quality of deliberation)	4.61 (0.94)	4.80 (0.84) **	4.52 (0.97)	4.86 (0.80) ***
Digital Empowerment	3.85 (0.79)	3.88 (0.75)	3.87 (0.80)	3.85 (0.75)
Ease of Use of Platforms	3.73 (0.88)	3.87 (0.79) *	3.71 (0.88)	3.88 (0.81) **

Note. Standardized estimates are reported. *** $p < 0.001$. ** $p < 0.01$. * $p < 0.05$.

3.4. Perceived Quality of Deliberation

An exploratory factor analysis with Varimax rotation conducted on the 11 items measuring perceived quality of deliberation yielded three factors with eigenvalues greater than 1.

The first factor accounted for 44.70% of the explained variance and comprised four items reflecting deliberative quality in terms of stimulation of critical awareness (e.g., “The discussions helped me consider other sides of the issues”, “Participants suggested creative alternatives to address the problems”, “The discussions helped me think more critically about the issues”, “Various alternative options were explored before deciding”). This factor showed high internal consistency (Cronbach’s $\alpha = 0.89$).

The second factor explained 16.03% of the variance and included five items capturing deliberative quality in terms of participants’ engagement, motivation and respect (e.g., attention to others’ contributions, alertness and engagement during discussions, comprehension of others’ viewpoints, opportunities to express opinions, and perceived respect from other group members). Internal consistency for this factor was good (Cronbach’s $\alpha = 0.85$).

The third factor accounted for 10.94% of the variance and consisted of two items describing perceptions of disrespect and discourtesy from other group members during deliberation. Such items might reflect participants’ perceptions of disagreements in group deliberation, impacting on deliberation satisfaction. Since this aspect of perceived deliberative quality was captured by the second factor, this factor was not considered further.

Subscale scores were computed for the first two factors, with scores ranging from 1 to 5 (1 = completely disagree, 5 = completely agree). Mean scores were $M = 4.14$ ($SD = 1.18$) for critical awareness and $M = 4.71$ ($SD = 0.89$) for engagement. Internal consistency coefficients were satisfactory (Cronbach’s $\alpha = 0.89$ for critical awareness and $\alpha = 0.85$ for engagement).

Perceived quality of deliberation, both in terms of critical awareness and engagement, was higher among female participants than male participants and among administrative staff compared to academic staff (Table 2).

3.5. Digital Empowerment and Perceived Ease of Use of Platforms

A preliminary exploratory factor analysis conducted on the digital empowerment scale yielded a single-factor solution. A composite digital empowerment score was therefore computed, showing high internal consistency (Cronbach's $\alpha = 0.90$). Digital empowerment scores decreased with age (Pearson's $r = -0.17$, $p < 0.001$; Table 2).

Participants generally reported high perceived ease of use of digital platforms. Specifically, they reported that platforms were easy to learn ($M = 3.97$, $SD = 0.87$), that menus and functions were relatively easy to locate ($M = 3.58$, $SD = 1.01$), and that platforms were easy to use overall ($M = 3.88$, $SD = 0.88$). A composite score for perceived ease of use was computed, showing high internal reliability (Cronbach's $\alpha = 0.90$). Perceived ease of use decreased with age (Pearson's $r = -0.21$, $p < 0.001$; Table 2). In addition, female participants and administrative staff reported higher perceived ease of use compared to male participants and academic staff (Table 2).

3.6. Correlations and Common Method Bias Evaluation

We first examined the associations between online participation practices during the pandemic—specifically, frequency of platform use, degree of integration between online and offline participation, and use of digital interaction rules—and other study variables (Table 3).

Table 3. Correlations.

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Frequency of Use	1											
2. Integration	0.23 ***	1										
3. Digital Interaction Rules	0.09 *	0.14 ***	1									
4. Satisfaction for Online Participation	0.15 ***	0.23 ***	0.42 ***	1								
5. Development of Digital Skills	0.13 ***	0.20 ***	0.35 ***	0.50 ***	1							
6. Improved Quality (Benefits)	0.10 **	0.19 ***	0.40 ***	0.77 ***	0.49 ***	1						
7. Improved Efficiency (Benefits)	0.13 ***	0.15 ***	0.32 ***	0.60 ***	0.42 ***	0.63 ***	1					
8. Structural Limitations (Benefits)	0.01	-0.02	-0.07	-0.18 ***	0.04	-0.20 ***	-0.15 ***	1				
9. Reduced Safety and Privacy (Benefits)	-0.00	-0.04	-0.08 *	-0.26 ***	-0.06	-0.25 ***	-0.25 ***	0.42 ***	1			
10. Critical Awareness (Quality of deliberation)	0.06	0.13 ***	0.35 ***	0.39 ***	0.28 ***	0.45 ***	0.24 **	-0.04	-0.11 **	1		
11. Engagement (Quality of deliberation)	0.11 **	0.09 *	0.42 ***	0.48 ***	0.32 ***	0.51 ***	0.37 ***	-0.14 ***	-0.22 ***	0.54 ***	1	
12. Digital Empowerment	0.18 ***	0.24 ***	0.27 ***	0.39 ***	0.24 ***	0.34 ***	0.37 ***	-0.22 ***	-0.15 ***	0.22 ***	0.32 ***	1
13. Ease of Use of Platforms	0.12 **	0.18 ***	0.25 ***	0.38 ***	0.21 ***	0.37 ***	0.32 ***	-0.31 ***	-0.24 ***	0.23 ***	0.31 ***	0.51 ***

*** $p < 0.001$. ** $p < 0.01$. * $p < 0.05$.

Higher frequency of platform use and greater integration of online tools with in-person participation were associated with higher satisfaction with online participation and greater perceived development of digital skills. Notably, the presence of digital interaction rules showed the strongest associations with satisfaction with online participation. These practices were also associated with higher perceived quality and efficiency of participation processes.

In addition, the adoption of digital interaction rules, including the moderation of discussions, was associated with higher perceived quality of deliberation, both in terms of critical

awareness and participant engagement. Greater integration of online tools and structured interaction practices were also associated with higher levels of digital empowerment.

Participants' digital empowerment was positively associated with favorable outcomes of platform-based participation experienced during the pandemic. Specifically, higher levels of digital empowerment were associated with greater satisfaction with online participation and greater perceived development of digital skills. Digitally empowered participants also attributed higher value to the benefits of digital platforms in terms of enhancing both the quality and efficiency of participatory processes, while expressing lower concern regarding structural limitations and privacy or security issues related to platform use.

Furthermore, higher levels of digital empowerment were associated with stronger perceptions of improved deliberative quality, particularly with respect to the capacity of digital platforms to engage participants in decision-making and deliberative activities.

A positive experience of participation on digital platforms during the pandemic was associated with more favorable evaluations of the benefits of digital platforms in improving both the quality and efficiency of deliberative processes, as well as with lower perceptions of structural limitations and privacy or security concerns. Overall, participants who reported more positive experiences of online participation during the pandemic and who valued digital platforms for their contribution to process quality and efficiency were more likely to perceive that the use of digital platforms significantly enhanced the quality of deliberation in university bodies, both in terms of stimulating critical reflection and engaging and motivating participants.

We used the Unmeasured Latent Method Construct approach to test common method bias. A model that includes all the latent constructs considered in this study was compared with another model that adds a latent variable representing the method factor and on which all items of the latent variables were loaded. To compare the fit of the models, we used the following cutoffs: a change of ≤ 0.005 in CFI, supplemented by a change of ≥ 0.010 in RMSEA. The results reveal that there was no significant difference in the model fit between the two models, $\Delta\text{CFI} = -0.002$, $\Delta\text{RMSEA} = 0.000$. Therefore, there was no serious common method bias in our study.

3.7. Predictors of Quality of Deliberation

To identify predictors of perceived quality of deliberation on digital platforms, hierarchical regression analyses were conducted separately for the two dimensions of deliberative quality: critical awareness and engagement. Predictors were entered sequentially as follows: online participation practices at Step 1; digital empowerment and perceived ease of use at Step 2; satisfaction with online participation and development of digital skills at Step 3; and perceived benefits of digital platforms at Step 4.

Results indicated that perceived quality of deliberation in terms of critical awareness was significantly predicted by the development of digital interaction rules and the presence of moderation or facilitation processes. In addition, the perception that digital platforms improve the quality of participatory processes was significantly associated with higher levels of critical awareness during deliberation. The perception of platforms' efficiency in saving time and money seems to be associated with a reduction of in-depth deliberation (Table 4).

Table 4. Regression Analysis on Critical Awareness (Quality of deliberation).

	Step 1	Step 2	Step 3	Step 4	VIF
Frequency of Use	0.00	0.01	0.02	−0.01	1.10
Integration	0.07 *	0.04	0.02	0.01	1.15
Digital Interaction Rules	0.35 ***	0.31 ***	0.22 ***	0.20 ***	1.30
Digital Empowerment		0.07	0.03	0.05	1.51
Ease of Use of Platforms		0.10 *	0.05	0.03	1.53
Satisfaction for Online Participation			0.23 ***	0.03	2.42
Development of Digital Skills			0.06	0.02	1.53
Improved Quality (Benefits)				0.40 ***	2.42
Improved Efficiency (Benefits)				−0.13 *	1.84
Structural Limitations (Benefits)				0.06	1.35
Reduced Safety and Privacy (Benefits)				−0.02	1.32
<i>R</i>	0.37	0.40	0.46	0.52	
<i>R</i> ²	0.14	0.16	0.21	0.27	

Note. Standardized estimates are reported. *** $p < 0.001$. * $p < 0.05$; VIF = Variance Inflation Factor.

A similar pattern of predictors emerged for perceived quality of deliberation in terms of engagement. Specifically, engagement was significantly predicted by the development of digital interaction rules and by the perception that digital platforms enhance the quality of participatory processes. Moreover, digital empowerment emerged as a significant predictor of deliberative quality in terms of engagement (Table 5). Multicollinearity was assessed using variance inflation factor (VIF). VIF values ranged from 1.10 to 2.42, indicating that multicollinearity was not a concern.

Table 5. Regression Analysis on Engagement (Quality of deliberation).

	Step 1	Step 2	Step 3	Step 4	VIF
Frequency of Use	0.06	0.04	0.03	0.03	1.09
Integration	0.01	−0.03	−0.07	−0.07	1.15
Digital Interaction Rules	0.40 ***	0.34 ***	0.23 ***	0.22 ***	1.29
Digital Empowerment		0.15 ***	0.09 *	0.09 *	1.51
Ease of Use of Platforms		0.14 ***	0.08 *	0.03	1.53
Satisfaction for Online Participation			0.29 ***	0.07	2.42
Development of Digital Skills			0.07	0.03	1.53
Improved Quality (Benefits)				0.30 ***	2.41
Improved Efficiency (Benefits)				−0.00	1.83
Structural Limitations (Benefits)				0.02	1.35
Reduced Safety and Privacy (Benefits)				−0.10 **	1.32
<i>R</i>	0.42	0.48	0.55	0.59	
<i>R</i> ²	0.17	0.23	0.30	0.34	

Note. Standardized estimates are reported. *** $p < 0.001$. ** $p < 0.01$. * $p < 0.05$; VIF = Variance Inflation Factor.

3.8. Robustness Analysis

As a robustness check, we conducted a structural equation modeling analysis using Mplus v8.11. The model specification is presented in Figure 1, and the corresponding results are reported in Table 6. The findings are consistent with those obtained from the regression analyses.

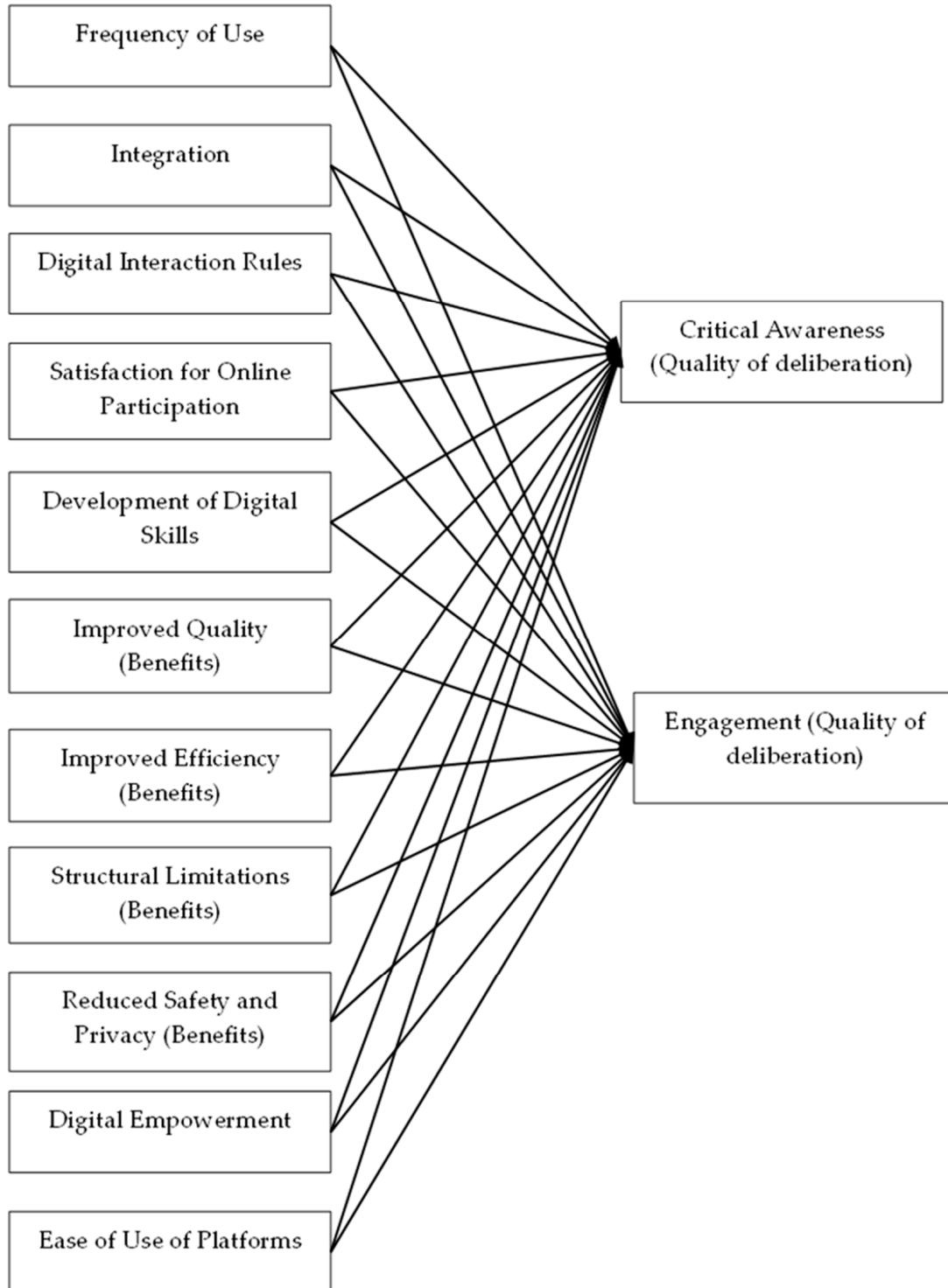


Figure 1. Structural Equation Model Specification.

Table 6. The Results of the Structural Equation Modeling Predicting Critical Awareness (Quality of deliberation) and Engagement (Quality of deliberation).

Independent Variables/Dependent Variables	Critical Awareness	Engagement
Digital Interaction Rules	0.20 ***	0.22 ***
Satisfaction for Online Participation	0.03	0.07
Development of Digital Skills	0.02	0.04
Improved Quality (Benefits)	0.41 ***	0.31 ***
Improved Efficiency (Benefits)	−0.13 **	−0.01
Structural Limitations (Benefits)	0.06	0.03
Reduced Safety and Privacy (Benefits)	−0.03	−0.10 *
Digital Empowerment	0.05	0.09 *
Ease of Use of Platforms	0.03	0.04
Frequency of Use	−0.02	0.04
Integration	0.01	−0.07
R^2	0.27	0.35

Note. Standardized estimates are reported. *** $p < 0.001$. ** $p < 0.01$. * $p < 0.05$; VIF = Variance Inflation Factor.

4. Discussion

The aim of the present study was to investigate university personnel's experiences of participation in decision-making processes supported by digital platforms during the COVID-19 pandemic. This unprecedented context accelerated a large-scale shift from face-to-face interaction to technology-mediated interaction within higher education institutions [26,27]. Almost two-thirds of participants reported using digital platforms several times per week for activities related to university bodies, with the frequency of use being relatively uniform across professional roles and sociodemographic groups.

Despite this widespread use, most participants reported that digital platforms were not fully integrated with in-person activities. A substantial, though still a minority, proportion of participants (41.1%) reported high levels of integration between online and offline participation. On average, participants also reported moderate use of interaction rules (e.g., regulated speaking turns, muting microphones, structured use of cameras). Notably, administrative staff reported higher levels of online–offline integration and greater use of interaction rules compared to academic staff. These findings suggest that administrative staff may have developed greater mastery and routinization in the use of digital platforms for participatory and deliberative purposes.

Overall, participants reported a slight perceived improvement in their participation following the introduction of online platforms and a moderate level of satisfaction with their use. Nevertheless, approximately two-thirds of participants perceived an improvement in their skills as a result of participating through digital platforms. Once again, administrative staff reported higher levels of satisfaction, greater perceived improvement in participation, and greater skill development compared to academic staff, indicating potential differences in organizational roles, expectations, and daily exposure to digital tools.

Much of the literature on online deliberation has been based on experiments or public participation cases. By examining a university's internal governance, we show how these dynamics play out within organizations. We demonstrate that factors contributing to the quality of digital deliberation and hybrid participation processes are highly relevant to institutional decision-making beyond the civic sphere. Universities can be seen as micro-polities, and our findings suggest that the same factors that foster good public deliberation—transparency, structured open dialogue, empowered participants—also apply internally. At the same time, this study contributes to community psychology by extending the study of empowering community settings to the digital participation and deliberation arena. By treating a digital decision-making forum as a community context that can be more or less

empowering, we provide a fresh perspective: deliberation is not only a democratic process but also a psychosocial process that fosters individual growth and agency.

Digital empowerment emerged as a key construct in explaining participants' experiences. It was strongly associated with perceived ease of use of digital platforms, suggesting that usability may facilitate the development of digital skills. While digital skills and knowledge can be considered prerequisites for digital empowerment, the relationship between skills and empowerment appears to be reciprocal and dynamic, unfolding as a reinforcing spiral over time [28].

Consistent with the model proposed by Sharma, Kar, and Gupta [16], our findings support the view that digital empowerment is an important predictor of the quality of participation. At the same time, the results of the present study suggest that this relationship may be bidirectional: experiencing high-quality participatory and deliberative processes may, in turn, contribute to strengthening individuals' sense of digital empowerment. Further research with longitudinal or experimental designs could further clarify the possible causal directions.

The study offers important insights into the processes and ecological conditions that shape the quality of participation in digital settings [11]. Importantly, these findings speak to the sustainability of institutional governance systems in a context where digital and hybrid participation are likely to remain permanent features beyond emergency conditions. The results indicate that participation quality is not primarily determined by the frequency of platform use, but rather by how participation is structured and experienced. In particular, the presence of interaction rules and moderation emerged as the most consistent predictors of positive participation outcomes, including satisfaction with participation, perceived skill development, and perceived quality of deliberation. From a sustainability perspective, this suggests that digital platforms contribute to sustainable institutional participation only when embedded in empowerment-supportive and well-structured deliberative ecosystems, rather than being evaluated mainly through efficiency or intensity of use.

From an ecological perspective, digital platforms can be conceptualized as participatory settings whose structural and relational characteristics shape opportunities for engagement, influence, and meaning-making. Clear interaction rules and facilitation practices appear to foster conditions conducive to both critical reflection and engagement during decision-making discussions. The strong associations observed between interaction rules and both dimensions of deliberative quality—critical awareness and engagement—highlight the central role of process design in enabling meaningful deliberation in digital environments. Moreover, it is important to consider how the process design of deliberative experiences is influenced by the structural characteristics of platform architectures and the functionalities they provide, which shape and constrain participatory affordances available to participants [15]. From a governance perspective, this underscores that institutions must carefully choose and manage their digital tools for participation, considering their communicative and decision-making quality. Features such as real-time display of contributions, clear indications of how decisions will incorporate input, and moderator presence to address questions could increase participants' confidence in the process.

Although the strength of the association was modest, our findings also suggest that participants who focus on the efficiency of digital tools (in terms of convenience, time-saving, and reduced costs) report lower levels of in-depth discussions that stimulate critical reflection. While digital platforms can, in theory, enhance the effectiveness and accessibility of participatory processes (e.g., by facilitating participation regardless of geographic or temporal constraints), these affordances do not automatically translate into deeper deliberative reasoning, as evidenced by deliberative democratic theorists. Instead, efficiency-oriented interactions may emphasize speed and completion over engaged reflection, potentially

reducing opportunities for participants to exchange nuanced perspectives and challenge assumptions [29]. This intriguing result, which suggests a possible structural contradiction between efficiency-driven digital governance and deliberative depth, raises questions about how the structural affordances embedded in online platform architectures [15] may interact with participants' characteristics (e.g., empowerment, agency) and participatory behaviors during online deliberation, thereby generating a participatory setting that differs from in-person contexts and challenges established assumptions about the epistemic quality of institutional deliberative processes. Further research is needed to address the interconnections between the structural characteristics of platforms, the affordances they offer to users, and participants' behaviors during deliberative experiences supported by online platforms, as well as the impact of such experiences on deliberative quality.

The findings related to the perceived quality of deliberation resonate with empirical evidence on the developmental quality of participation experiences, defined in terms of action and reflection [6]. Moreover, they further challenge assumptions that online settings are inherently less conducive to high-quality deliberative processes. When adequately structured and facilitated, digital participatory settings can support deliberation that participants perceive as inclusive, engaging, and cognitively stimulating. Overall, our results affirm that who the participants are and how the process is structured digitally both influence outcomes: the strongest deliberative quality arose when empowered, experienced individuals engaged on a well-regarded platform.

Differences observed across professional roles underscore the importance of considering organizational status and role-related activities in understanding digital participation experiences. Administrative staff consistently reported higher levels of integration, greater use of interaction rules, and more positive participation-related outcomes than academic staff, suggesting that everyday work practices and exposure to structured digital routines may facilitate empowerment and participation quality. The findings are consistent with broader evidence indicating substantial differences between employee categories, which often operate within distinct organizational processes and cultures, and these can shape the experiences of digital innovation. Academic and administrative employees occupy distinct positions within university governance structures, with variations in perceived influence over organizational processes (e.g., academic middle managers and educational administrators reporting higher decision-influence than academic and professional staff) [30]. These organizational distinctions can reflect broader role identity differences documented in higher education research, where academic staff and administrators operate within distinct cultural logics—academics with normative autonomy and disciplinary commitments, and administrators with operational governance responsibilities—which shape how each group engages with institutional change and digital participation [31]. Moreover, as our results highlight, digital adaptation and empowerment are influenced not only by individual skills but by organizational culture and support structures, which differ across academic and administrative roles, potentially contributing to observed differences in digital deliberative engagement [32]. Even acknowledging the importance of status differences, an additional explanation for the lower satisfaction reported by academics compared to administrative staff may relate to other activities in which academics are involved, in particular, teaching. During the abrupt and forced transition from in-person to online teaching, many academics were caught unprepared to adjust to the new requirements of lectures and exams conducted online, which also required them to modify the way they interacted with students. Even though they received some training on online teaching, it took several months before university policies allowed a return to in-person teaching, which is the preferred form. Such experiences may well have affected academics' perceived empowerment and overall satisfaction with digital platforms at the time the study was

conducted. Further research in the current post-pandemic period would be important to assess whether such differences are still present.

Similarly, the decrease in perceived digital empowerment and ease of use with age highlights the need for supportive practices that address differential access to participatory resources and competencies. This echoes the broader concern of the digital divide in participation and the risk that those who are less tech-savvy or lack access to a stable internet could be left behind. Addressing digital divides is not only a matter of usability; it is a sustainability requirement for participatory governance, because persistent inequalities in access and confidence undermine inclusiveness and the long-term legitimacy of institutional decisions. Institutions must actively work to reduce such divides—for instance, through digital skills workshops, offering alternative modes of contribution for those who prefer analog and in-person input, and investing in user-centered design for any participation platform.

Taken together, these findings indicate that digital platforms are not neutral tools but socially and organizationally embedded environments that can either support or constrain meaningful participation, with important implications for the sustainability of institutional participatory governance. Enhancing the quality of participation in digital institutional contexts, therefore, requires attention not only to technological infrastructures but also to empowerment processes, interaction structures, and the integration of online and offline modes of participation.

Finally, although the current study focused on participation mediated by digital platforms, it is important to acknowledge the continued relevance of traditional, face-to-face modes of participation. While digital platforms offer important opportunities for participation and empowerment, the results suggest that hybrid participation models that integrate digital and in-person formats may represent the most effective strategy for fostering inclusive, high-quality participation in institutional settings [33], while also supporting empowerment and sustained engagement over time, beyond short-term adaptation to emergency situations. Since digital empowerment and practices matter, providing multiple avenues lets individuals choose the mode they are most comfortable with, thereby broadening participation. Moreover, hybrid approaches can mitigate some weaknesses of purely online or purely offline methods. In-person deliberation often suffers from limited accessibility (only those present can influence the outcome), whereas online deliberation might miss the richness of human connection within discussions. Hybrid designs, however, require strong coordination—for instance, summarizing online inputs for an in-person committee, or vice versa. University institutions should develop protocols to embed digital inputs into formal decision processes and promoting long-term transformation.

Several limitations of the present study should be acknowledged. First, the cross-sectional design limits causal interpretations of the relationships observed among participation practices, empowerment, and deliberative quality. Longitudinal research is needed to examine how empowerment and participation experiences co-evolve over time and to test the bidirectional processes suggested by the findings. A further limitation of the present study concerns self-selection bias in the sampling process. Participation in the survey was voluntary, and it is therefore possible that the respondents represent a subgroup of university personnel who were already more interested in institutional participation, more engaged with digital platforms, or more motivated to express their views regarding the use of online tools in decision-making processes. Such possible bias may be at least partly mitigated by considering the particular period in which the data were collected (November 2021). Starting in March 2020, all activities within the University had shifted online, and both academics and administrative staff had been required to engage with digital platforms for at least part of their daily activities (e.g., work meetings and teach-

ing). Thus, all university personnel had been involved, to some extent, in online activities and in the use of digital platforms. While the relatively large and heterogeneous sample provides some reassurance regarding the robustness of the results, caution is warranted in generalizing the findings to all university personnel, particularly those who are less digitally engaged or less involved in institutional governance processes. Moreover, the study focused on a single institutional setting within the context of higher education in a specific cultural context (Italy) and on the use of a specific—though widely adopted—platform (Microsoft Teams), which may limit the generalizability of the findings. Research on online participation in other educational settings and public administrations (e.g., municipalities, local administrations) and on the use of other types of platforms would be important to test the impact of different organizational contexts on participation processes and clarify the contextual conditions under which digital participation supports empowerment and high-quality deliberation.

Future research should also explore how digital participatory settings affect groups that are traditionally less involved in institutional decision-making. Such research should examine whether digital platforms can reduce or reproduce existing power inequalities.

The findings of the present study have several practical implications for the design and management of participatory processes. Our conclusions offer guidance for universities and other institutions in the post-COVID era. The pandemic has been a disruption but also an opportunity: it forced institutions to innovate in governance and to realize the potential of digital engagement. As we move forward, the question is how to embed these innovations into hybrid models that are sustainable and equitable, contributing to sustainable participatory governance processes. Our findings suggest that institutions should invest in capacity-building—ensuring their members are digitally empowered—and in decision-making management—ensuring that digital spaces for decision-making are trusted.

The strong association between the quality of deliberation and the presence of interaction rules and moderation highlights the importance of training in the organizational and psychosocial processes involved in the management of groups to enhance skills for guiding online discussions effectively. These elements appear to be crucial for ensuring high-quality deliberation and meaningful engagement in digital settings.

Second, the central role of digital empowerment suggests that training initiatives should focus not only on technical skills but also on enhancing participants' sense of control and self-efficacy in digital environments. This may be particularly relevant for groups that reported lower levels of digital empowerment, such as older participants and academic staff.

Third, the finding that administrative staff reported higher integration of online and offline participation and greater mastery of interaction rules points to the relevance of organizational roles and daily work practices in shaping digital participation experiences. The results support the adoption of hybrid participation models that integrate digital and face-to-face modes. Rather than replacing in-person participation, digital platforms can complement traditional formats by increasing flexibility, efficiency, and inclusiveness, while preserving the relational and deliberative qualities of face-to-face interaction. In practical terms, our findings suggest the following design principles for sustainable online/hybrid governance: (i) adopt clear interaction rules and facilitation to support respectful, reasoned exchange; (ii) invest in digital empowerment and capacity-building to reduce participation inequalities; and (iii) integrate online and offline channels with transparent procedures that ensure that contributions are visible and meaningfully incorporated into decisions.

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