

# **The dynamics of social capital in a participative procedure: original results from on an on-going evaluation**

## **Abstract**

Literature has investigated the reciprocal impacts between public participation and social capital, but little is known about the dynamics of social capital within a participative process. This work investigates what happens to social capital during a participative procedure, to get new knowledge about the dynamics of social capital. To do so, we designed an on-going monitoring system of social capital and we ran a participative procedure. The proposed on-going monitoring process shows that social capital followed complex and non-linear patterns of evolutions, showing simultaneous processes of creation and destruction between participants. This knowledge may be relevant to predict stakeholders' behaviors which might influence quality of participation. In addition, the repeated monitoring system had also a memory effect which limits short-term bias in individual evaluation of other participants. We concluded discussing the identified drawbacks of the suggested approach, to conclude questioning under which conditions the on-going monitoring process is worth to be implemented.

**Keywords:** social capital, participative process, mixed-method research, learning, University

## 1. Introduction

The concept of social capital has been widely used to explain the different performances of countries (Harriss and Renzio, 1997; Pretty and Ward, 2001; Wallis and Dollery, 2001), firms (Schutjens and Völker, 2010), communities (Valenzuela et al., 2009), and organizations (Paxton, 1999), also in the face of new sustainable challenges such as resilience of communities (Adger, 2003; Menzel et al., 2013).

At its roots, social capital links to social interaction (Menzel et al., 2013). While literature about the overall effects of public participation on social capital exists, there are no studies – to our knowledge - which track the on-going evolution of social capital *within* participative processes. Only one study (Menzel et al., 2013) compared ex-ante and ex-post levels of social capital during a participative process, while a second one (Wagner and Fernandez-Gimenez, 2009) only mimicked the ex-ante level of social capital. However, both studies did not describe the on-going evolution of social capital.

What happens to social capital within a participative process is still a *black-box* that may provide relevant information, because dynamics of social capital may not follow linear patterns of evolution when stakeholders have repeated interactions over time – as typically happens during a participative process that is, at its core, a process of social interaction. In addition, repeated measurements over time may improve reliability of evaluations about social capital, because literature has warned that ex-post measurement can be influenced by *interested-oriented* dynamics, in which the degree of satisfaction expressed by stakeholders about dynamics of social capital might be biased by the achievement of own interests and goals (Beierle, 1999).

1 However, measuring the on-going evolution of social capital has two relevant drawbacks which  
2 need to be considered. First, it is a resource-consuming process. Second, it requires an ex-ante  
3 design of the procedure, so it is not possible to apply such methodologies to past cases, as most of  
4 current studies on social capital does (Leach et al., 2002; Menzel et al., 2013; Wagner and  
5 Fernandez-Gimenez, 2008).

6 Therefore, it is essential to understand whether it is worth to implement an on-going monitoring  
7 measure for social capital dynamics. Consequently, the following research question guided this  
8 research: “*Does the on-going monitoring of social capital during a participative procedure*  
9 *produce new knowledge about the dynamics of social capital?*”. This paper addresses the research  
10 question through the illustration of a participative procedure, called UnissOlbia2020, about the  
11 development of a University branch, which implemented a *pre-ongoing-post* measurement of  
12 social capital.

13 Our paper provides new knowledge in the current debate about how public participation affects  
14 social, because our overall findings is that dynamics of social capital generated *simultaneously* both  
15 positive and negative variations, generating a *redistributive* effect (Paxton, 1999) among  
16 participants. Consequently, we concluded that literature about the relationship between  
17 participation and social capital should focus not on “*whether social capital is formed or destroyed*  
18 *through participatory planning*” (Menzel et al., 2013, p. 351), but on how social capital evolves,  
19 both in terms of level and dispersion, through participatory planning (Paxton, 1999; Putnam et al.,  
20 2004, p. 155).

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1 Section two presents a brief literature review about the concept of social capital and its relationships  
2 with public participation. Section three describes the methodology and contextualizes the case  
3 study. Section four presents the main results and section five discusses them. Section six concludes  
4 and acknowledges the most relevant limitations occurred during the case.

5

## 2. Literature review

Bordieu (1986) and Coleman (1988) introduced the concept of social capital that was popularized by the work of Putnam (1993), about how the performance of different regional governments in Italy depended on the quality and intensity of local relationships in civil society. The idea that the social capital dimension is linked to socio-economic performances of different countries and organizations (Grootaert, 1998; Harriss and Renzio, 1997) has attracted a growing interest about the question of the constructability of social capital, as a way to pursue development.

At its essence, social capital includes three dimensions (Adger, 2003; Harriss and Renzio, 1997; Putnam et al., 2004): social trust, norms of reciprocity, and networks structures. Such dimensions link social capital to different forms of individual or social interactions which make social capital a specific type of capital that *increases with use* (Wagner and Fernandez-Gimenez, 2008). Consequently, several scholars have found interesting to link literature about social capital to the one about public participation, because both refer to social interaction at their core. Unsurprisingly, literature indicates that the two dimensions are intertwined, because social capital is both considered an *input* and an *output* of public participation. As *input*, because social capital influences the likelihood of public engagement that affects the effectiveness of participatory processes (Jones et al., 2012; Wagner and Fernandez-Gimenez, 2009). As *output*, because public participation affects social trust, norms of reciprocity, and networks structures of agents involved in a participative process.

While the existence of such relationship is widely accepted, some differences arise in respect to direction of this influence. Most of the studies identifies a positive reinforcing direction between the two dimensions, because: i) social capital - as input - improves the likelihood of engagement

1 and, in turn, the quality of public participation (Pretty and Ward, 2001), and; ii) public participation  
2 builds social capital - as output - because it betters the dimensions of social capital among agents  
3 (Krzywoszynska et al., 2016; Leach et al., 2002; Wagner and Fernandez-Gimenez, 2009). This  
4 approach led to the suggestion – about the constructability of social capital - that public  
5 participation might be deliberately used to improve social capital of local communities (Grootaert,  
6 1998). However, few studies report negative relationships between the two dimensions (Cameron  
7 et al., 2015; Van Oorschot et al., 2006; Wagner and Fernandez-Gimenez, 2008). The negative effect  
8 can take place in two different ways. First, public participation might fuel conflicts between  
9 participants (Bullock and Hanna, 2007). Second, high level of social capital can reduce the quality  
10 of public participation, because of lobbying effects around specific objectives and/or exclusion of  
11 other stakeholders (Adger, 2003; Wagner and Fernandez-Gimenez, 2008).

12 Noteworthy, literature provides some insights about the conditions under which positive or  
13 negative dynamics occur. Putnam (1993) suggested that civic engagement arises from weak  
14 horizontal ties, because it allows networking between different social groups, so participatory  
15 processes which aim at building social capital may take to account the typology of ties between  
16 participants. Sabatier (2005) found that the fairness and the perceived importance of having an  
17 agreement have a positive impact on new social capital, while the success of the procedure does  
18 not. Bullock and Hanna (2007) identified three causes (communication, personal dynamics, and  
19 process issues) that may generate conflicts in participatory processes. Such conflicts may generate  
20 only within participative processes, because participation may create the conditions of interaction  
21 and interdependency between potential conflicting participants. Gimenez (2008) found that  
22 changes in the level of social capital depends on the perceived success of the procedure and on the  
23 initial level of social capital. Wagner and Fernandez-Gimenez (2008), in line with Putnam (1993),

1 suggested that bonding relationships within participative processes may led to lobby against or to  
2 exclude non-aligned stakeholders, reducing overall social capital. Menzel et al. (2013) concluded  
3 that stakeholders' influence might have a negative impact on trust, while fairness, appreciation of  
4 other participants, positive organizational aspects, and expected outcomes might have a positive  
5 one. Cameron et al. (2015) suggested that the effect of public participation on social capital depends  
6 on the initial level of the latter: if initial capital is low, public participation is more likely to have a  
7 negative effect on it.

8 Literature has also recognized the importance of further research, which paved the way to this  
9 work. Beierle (1999) suggested to move away from *process-* or *interested-*oriented evaluative  
10 frameworks about participation, where *process-oriented* ones focus on specific characteristics of  
11 the process, and *interested-oriented* ones focus on the degree of satisfaction of stakeholders,  
12 usually depending on their capability to achieve their own goals. Beierle pointed out that both the  
13 approaches do not track the social outcomes of the participative process which link to specific  
14 social goals. Therefore, he called for specific evaluative frameworks which focus on social capital  
15 *per se*. Leach and Sabatier (2005, p. 255) called for studies which perform repeated measurements  
16 of trust and social capital. Wagner and Gimenez (2008, p. 643) pointed out the need to better  
17 understanding relationship between collaboration and social capital. Menzel et al. (2013) called for  
18 a mixed-method approach because the complexity of the social capital dynamics requires strong  
19 qualitative analyses to complement quantitative ones. Our work follows these research suggestions,  
20 providing an in-depth understanding of social capital changes through a mixed-method research  
21 approach.

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### 3. Methodology

#### 3.1 Case study setting

Since its opening in 2001, the seat in Olbia of the Department in Management (DiSEA) of Sassari University (for brevity Olbia University) followed the touristic vocation of the territory in its scientific and educative offer. Today, Olbia University offers a Bachelor degree in Management – with a strong focus on Tourism – and a Master degree in Tourism Management.

Olbia University experienced a growing number of students in the recent years, Today, more than 500 students are enrolled. The growing popularity is quickly saturating the available spaces limiting the capacity to further develop the educational and scientific activities. Olbia University is situated in the local airport, but the Municipality expressed the willingness to move it to the city center, to vitalize the inner part of the city. Consequently, a public debate existed about the location of Olbia University.

DiSEA acknowledged that such issues need to be addressed in defining the future of Olbia University. Meanwhile, the so-called *third-mission* (Secundo et al., 2017) - the idea that University shall better engage with society and industry, besides the traditional educational and research activities – is recognized as part of the evaluation of the performance of any University in Italy.

The combination of these elements led DiSEA to launch “UnissOlbia2020”, a project to identify visions and activities of Olbia University in the next years. UnissOlbia2020– built upon a participatory approach – was expected to : i) acquire new ideas and actions about the most relevant educational and scientific activities to be developed in the coming years; ii) strengthen DiSEA *third-mission*, structuring relationships with local stakeholders; iii) influence the public debate with the aim of increasing the attention towards the role of the University in the local community; iv)



strengthen the scientific knowledge of its research center about the relationship between public participation and dynamics of social capital, as a way to leverage future research activities.

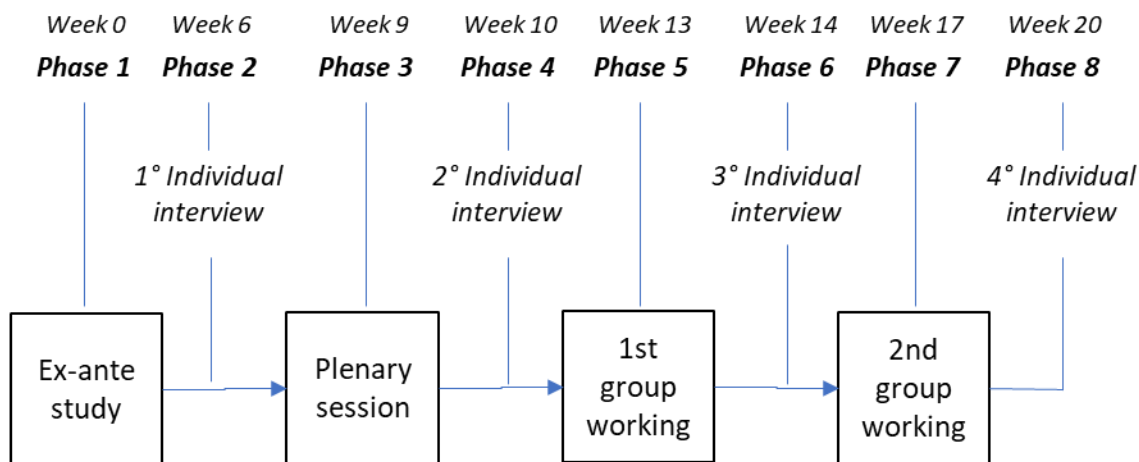
The ex-ante monitoring of the public debate identified a lack of discussion about Olbia University.

This information led us to design a procedure which took in account that the topic was novel for the local stakeholders, which might have to build their own opinions. Consequently, we decided:

i) to design a procedure which accommodates also a debate about general visions, considering the risk that participants might have not been able to identify specific actions since the beginning; ii) to exclude Olbia University from the list of participants, because many stakeholders might have just followed the leading role of the University, recognized because of its greater knowledge about the topic; iii) to not provide ex-ante information about University of Olbia to be able to take a snapshot of stakeholders' initial positions during the first phases; iv) to fuel the initial discussion of the stakeholders' dialogue phases with some hints, and ideas giving the risk that participants would have not been able to start a conversation; v) to allow several weeks between the different phases of stakeholders' dialogue in order to give time to participants to reflect inside their own organizations.

UnissOlbia2020 included eight phases and three tools (individual interview, plenary session, group working) as showed in Figure 1. Individual interviews, designed to gather information about the dynamics of social capital, are presented in section 3.2.

1 *Figure 1 Phases and timing of UnissOlbia2020. Week 0 indicates the beginning of the procedure*



2  
3 **Plenary session** (Phase 3). The plenary, which included all participants guided by two facilitators,  
4 had three main objectives: i) to briefly allow participants to share views and thoughts; ii) to finalize  
5 the themes and the topics to be discussed during UnissOlbia2020; iii) to define the final  
6 composition of groups which were going to work in the group working sessions.

7 **Group working sessions** (Phases 5, 7). Working groups had to: i) identify potential actions to be  
8 performed by University, also using an inspirational list provided by facilitators; ii) agree on a  
9 relevant selection of actions to be proposed; iii) evaluate – individually – the importance of  
10 identified actions. In Session 2, each Working group started from the lists of the actions identified  
11 by the two other Working Groups in Session 1.

### 12 *3.2 Measurement of social capital*

13 Individual interviews were the main source of information about the dynamics of social capital.

14 We identified two measures - competence, and shared view - to track the evolution of social capital.

15 Both dimensions refer to the social trust dimension of social capital. We did not track the dimension  
16 of norms of reciprocity, because we were unable to define an intuitive way to collect information

about such dimension through interviews. We collected only qualitative information about networks, through the semi-structured interview.

The questionnaire comprised two statements about social capital. Each participant had to assess the rest of participants using a 5-points likert value scale.

Table 1 Example of the used questionnaire where participant A evaluated participant B in respect to competence level and shared-view vision. Possible Likert values: 1. Strongly disagree; 2. Partially disagree; 3. Don't know; 4. Partially agree; 5. Strongly agree

Questionnaire	Evaluations from Participant A	
	<i>"It is highly competent about the role of Olbia University for the touristic sector"</i>	<i>"We share views and interests about the future role of Olbia University for the touristic sector"</i>
Participant B	Likert-value	Likert-value

We adopted such simplified evaluation system because it was familiar to participants, easing their understanding of the implications in case of changing evaluations. In addition, interviewer took notes about any comments which might be related to the dimensions of competence of and shared view in respect to the other participants.

We implemented Leti-D index (Leti, 1983) to measure dispersion of evaluations between and within Respondents. Leti-D is a relevant index for likert-scale because it keeps memory of the ordinal property of the values. Leti-D index is defined as

$$D = 4 \frac{\sum_{i=1}^{k-1} F_i(1 - F_i)}{k - 1}$$

where  $k$  indicates the number of values that the variable can assume (five in our 5-points likert scale),  $i$  the number of observations, and  $F$  the cumulative relative frequency. Leti-D index ranges from 0 (minimum dispersion) to 1 (maximum dispersion)

In addition, we monitored general feelings about the procedure to evaluate potential shortcomings which may hamper the learning effects of the procedure (Franceschini and Marletto, 2015). Participants were aware that the individual questionnaire had mainly a scientific purpose. Interviewer filled the individual questionnaire, together with the interviewee, for the first time during the first individual interview (Phase 2). In addition, the interviewer took notes about relevant impressions, feelings, and feedback which were not tracked by the questionnaire. The individual interview was repeated three more times (Phases 4,6,8), a week after each of the three stakeholder dialogue phases (Phases 3,5,7). During each interview, the interviewer reported the last evaluations, given in the previous interview, asking interviewee to confirm or change them. Interviewee needed to explain reasons of its answers. During the 4<sup>th</sup> and final individual interview, the respondents filled a second questionnaire to provide feedback about the three tools used in UnissOlbia2020 - individual interview, plenary, and working group.

### ***3.3 Impacts of the social-capital monitoring on the procedure***

The need to track intersubjective social capital influenced the design of the procedure, because we defined strict guidelines for participation: i) each stakeholder had to appoint only one participant and could not replace it; ii) each participant had to attend Phases 2-8, being allowed for only one absence; iii) the same interviewer led all the individual interviews; iv) the interviewer filled the questionnaire together with the participant in order to guarantee the validity of answers.

This approach allowed us to avoid that the subjective bias coming from different participants could influence the answers. We were also aware of the limitations of such approach. First, binding participation of stakeholders to only a specific participant required a careful timing of the activities. Consequently, we settled the agenda a few months in advance. Second, we limited the number of

involved stakeholders, because each participant had to evaluate all the others, and it would have been not possible to combine all the individual needs and evaluations in a bigger group.

The limited number of participants led to a careful selection of participants, because limited sample might produce biased decisions which lower the quality of participation (Beierle, 2002). We avoided the snowball sampling, where an initial small pool of participants indicates other participants to be invited. This approach is effective to gather many participants but limited in the ability to represent different interests (Ryfe, 2005), and it is a critical drawback when a limited number of participants is required. We adopted, instead, an active recruitment strategy based on inviting stakeholders which participated in previous activities with Olbia University or in the local debate about University or about high scientific education/activities. We listed 30 potential stakeholders which were profiled in respect to the different represented interests and social groups. We decided to prioritize stakeholders which represented general interests, avoiding -whether possible - the ones which focused on specific touristic segments. The reason was that an University is a general actor of the territory, so we preferred to involve stakeholders representing general interests . Table 2 shows the final list of the 15 stakeholders which confirmed the presence.

*Table 2 List of participating stakeholders by categories*

Categories	Stakeholders
Hotel Trade Associations	A, P
Trade Associations	B, Q
Craftsman Trade Associations	G, N
Labor Unions	D, F, L
Municipality	M
NGOs	C, E, I

High-School Board Presidents	H, O
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1

2 We achieved the goal of having all the wanted different typologies of stakeholders participating in

3 UnissOlbia2020. Noteworthy, Presidents of High-School Boards are parents. We invited them –

4 and not managers of schools - to have wider representation of parents who might have University

5 students in their families in the near future.

6

## 4. Results

### 4.1 Overall evaluations

Table 3 reports the recorded variations registered through the individual interviews.

Table 3 Numbers of negative and positive variations registered during the interviews.

Interview	Competence		Shared view	
	Var +	Var -	Var +	Var -
Second	23	5	31	6
Third	9	6	7	5
Fourth	5	0	4	5
Total	37	11	42	16

Table 3 shows that: i) UnissOlbia2020 had an overall positive effect on the variations for the two dimensions; ii) the plenary session (second interview) recorded the highest number of variations, especially for the positive ones; iii) all the tools registered both positive and negative variations; iv) Second session of group working (fourth interview) experienced more negative than positive variations for the shared view dimension.

Table 4 reports the variations of the individual participants.

Table 4. Variations between the final and the first interviews of the individual assessment of competence and shared view of other participants. Tot counts the number of positive (+) and negative (-) variations. Squared boxes delimit the three Working Groups.

		Competence														Shared view													
		Appraisees														Appraisees													
		A	B	C	D	E	F	G	H	I	L	M	N	O	P	A	B	C	D	E	F	G	H	I	L	M	N	O	P
Appraisers	A	-	0	1	2	-1	0	1	0	1	0	1	1	0	0	6	1	-	0	0	1	-1	-1	1	0	1	1	1	-2
	B	0	-	2	-1	-1	0	0	0	0	0	0	0	0	0	1	2	-3	-	2	0	1	0	0	0	0	0	0	0
	C	-1	0	-	1	0	1	0	0	1	1	0	0	0	0	4	1	-1	0	-	1	0	1	1	0	0	0	-1	4
	D	-1	1	0	-	0	0	2	0	0	0	0	2	-1	0	3	2	-3	1	-1	-	-2	0	1	0	0	0	1	0
	E	0	1	1	1	-	0	0	0	0	0	0	0	0	0	3	0	0	3	1	1	-	0	0	0	0	0	0	0
	F	1	0	0	0	0	-	0	1	0	0	0	0	-1	1	3	1	0	0	0	0	-	0	0	0	-1	0	0	1
	G	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	1	0	1	0	1	-	0	1	1	1	1	1
	H	0	0	1	0	0	1	1	-	0	0	0	0	0	0	3	0	0	0	0	0	1	1	-	0	0	0	0	0
	I	0	1	1	1	0	1	1	0	-	2	0	2	0	0	7	0	0	0	1	1	0	1	0	-	2	0	2	0
	L	0	0	0	0	0	0	0	0	2	-	2	0	-3	0	2	1	0	0	0	0	0	0	0	-	0	0	0	0
	M	0	0	0	0	2	0	0	0	0	0	-	0	-2	1	2	1	0	0	0	1	0	0	0	1	0	0	0	2
	N	0	0	0	0	0	0	0	0	0	-1	2	-	-1	0	1	2	0	0	0	0	0	0	0	1	1	-1	-	1
	O	0	0	0	0	0	0	0	-	0	0	0	0	-	0	0	0	0	0	0	0	-	0	0	0	0	-	0	0
	P	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Tot	+	1	3	5	4	1	3	4	1	3	2	3	3	0	2	35	-	1	2	4	5	2	4	3	0	5	4	2	4
	-	2	0	0	1	2	0	0	0	0	1	0	0	5	0	-	13	3	0	1	0	2	1	0	0	0	1	1	0

1

2 Table 4 shows that some participants were very active. For instance, participant A changed  
3 evaluations about 12 out of 14 participants for at least one dimension. In addition, excluding  
4 participants O and P, which joined only the plenary, there was only one participant for competence  
5 (G) and one for shared view (L) which did not change their own evaluations. Similarly, only  
6 participant H did not receive changes of the evaluation coming from the others.

7 Table 5 shows that the negative variations reached a higher intensity than the positive ones.

8

Table 5 Overall number of variations by intensity

## COMPETENCE SHARED VIEW



VARIATION	Hits	%	Hits	%
+3	0	0%	1	0.6%
+2	10	5.6%	4	2.2%
+1	25	13.9%	35	19.4%
0	134	74.4%	127	70.6%
-1	9	5.0%	9	5.0%
-2	1	0.6%	2	1.1%
-3	1	0.6%	2	1.1%

1  
2 Table 3 registers all the recorded variations, while Table 4 and Table 5 compare only the last and  
3 the first evaluations, so total values differ because seven relationships varied twice (see Table 6):  
4 five were cumulative (i.e. varying in the same direction), and two were compensative, where an  
5 initial positive variation was compensated by a negative one for both cases<sup>1</sup>.

6 *Table 6 Analysis of repeated variations between two participants. Table reports the participants involved in the relationships*

Repeated variations between stakeholders		Second variation	
		+	-
First variation	+	<ul style="list-style-type: none"> <li>• I to L (competence)</li> <li>• I to L (shared view)</li> <li>• I to N (competence)</li> <li>• I to N (shared view)</li> </ul>	<ul style="list-style-type: none"> <li>• C to D (shared view)</li> <li>• N to L (shared view)</li> </ul>
	-	n.a.	• B to A (shared view)

<sup>1</sup> Noteworthy, participant I was involved in all the four repeated interactions that were positively cumulative

## 4.2 Highlights on phases

### Plenary session

Table 7 presents the variations occurred at the second interview, after plenary.

Table 7 Variations between the second and the first interviews of the individual assessment of competence and shared view of other participants. Total counts the number of positive (+) and negative (-) variations. Squared boxes delimit the three Working Groups.

Competence																	Shared view																		
	Appraisees															Tot			Appraisees															Tot	
	A	B	C	D	E	F	G	H	I	L	M	N	O	P	+	-	A		B	C	D	E	F	G	H	I	L	M	N	O	P	+	-		
Appraisers	A	-	-	0	2	0	0	1	-	0	0	1	1	0	0	4	0	A	-	-	0	1	0	-1	1	-	0	-1	1	1	1	-1	5	3	
	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	C	0	-	-	1	0	1	0	-	1	1	0	0	0	0	4	0	C	-1	-	-	2	0	1	0	-	1	1	0	0	0	-1	4	2	
	D	0	-	0	-	0	0	2	-	0	0	0	2	-1	0	1	1	D	0	-	0	-	0	1	-	0	0	0	1	0	0	2	0		
	E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	F	1	-	0	0	0	-	0	-	0	0	0	0	-1	1	2	1	F	0	-	0	0	0	-	0	0	0	-1	0	0	0	0	0		
	G	0	-	0	0	0	0	0	-	0	0	0	0	0	0	0	0	G	1	-	1	1	0	1	-	-	1	1	1	1	1	1	10	0	
	H	0	-	1	0	0	0	0	-	0	0	0	0	0	0	1	0	H	0	-	0	0	0	0	-	0	0	0	0	0	0	0	0	0	
	I	0	-	1	1	0	1	0	-	-	1	0	1	0	0	5	0	I	0	-	1	1	0	1	0	-	-	1	0	1	0	0	5	0	
	L	0	-	0	0	0	0	0	-	2	-	2	0	-3	0	2	1	L	0	-	0	0	0	0	0	-	0	-	0	0	0	0	0	0	
	M	0	-	0	0	2	0	0	-	0	0	-	0	-2	1	1	1	M	0	-	0	0	1	0	0	-	1	0	-	0	0	0	2	0	
	N	0	-	0	0	0	0	0	-	0	0	2	-	-1	0	1	1	N	0	-	0	0	0	0	0	-	1	2	0	-	-1	2	3	1	
O	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Tot +	1	-	2	3	1	2	1	-	2	2	3	3	0	1	21	-	Tot +	1	-	2	4	1	3	2	-	4	4	2	4	2	2	31	-		
Tot -	0	-	0	0	0	0	0	-	0	0	0	5	0	-	5	-	Tot -	1	-	0	0	0	1	0	-	0	1	0	0	1	2	-	6		

The plenary session showed several changes, with an overall increase of both the dimensions. Only one participant did not change any of the evaluations provided in the first interview, and no-one kept the same identical evaluations received in the first interview<sup>2</sup>. We recorded one three-point

<sup>2</sup> We could confront answers from only 10 out of 14 participants because: i) participant B did not join the plenary session; ii) stakeholder E changed participant after the first interview (but before the plenary); ii) participants M, N did not join the second interview

change, ten two-point changes, and fifty-two one-point changes. Noteworthy, we recorded only five negative variations for the competence level, all of them referred to participant O.

### Group working session 1

Table 8 presents the variations occurred at the third interview, after group working session 1.

*Table 8 Variations between the third and the second interviews of the individual assessment of competence and shared view of other participants. Total counts the number of positive (+) and negative (-) variations. Squared boxes delimit the three Working Groups.*

Competence																	Shared view																				
	Appraisees															Tot			Appraisees															Tot			
	A	B	C	D	E	F	G	H	I	L	M	N	O	P	+	-	A		B	C	D	E	F	G	H	I	L	M	N	O	P	+	-				
Appraisers	A	-	0	1	0	-1	0	0	0	0	0	0	0	-	-	1	1	A	-	0	0	0	-1	0	0	0	0	0	0	0	-	-	0	1			
	B	0	-	2	-1	-1	0	0	-	0	0	0	0	-	-	1	2	B	-1	-	2	0	0	0	0	-	0	0	0	0	-	-	1	1			
	C	-1	0	-	0	0	0	0	0	0	0	0	0	-	-	0	1	C	0	0	-	-1	0	0	0	0	0	0	0	0	-	-	0	1			
	D	-1	0	0	-	0	0	0	0	0	0	0	0	-	-	0	1	D	-3	0	0	-	-2	0	0	0	0	0	0	0	-	-	0	2			
	E	0	1	1	1	-	0	0	0	0	0	0	0	-	-	3	0	E	0	3	1	0	-	0	0	0	0	0	0	0	-	-	2	0			
	F	0	0	0	0	0	-	0	0	0	0	0	0	-	-	0	0	F	0	0	0	0	0	-	0	0	0	0	-	-	0	0	0	0			
	G	0	0	0	0	0	0	-	0	0	0	0	0	-	-	0	0	G	0	0	0	0	0	0	-	0	0	0	0	-	-	0	0	0	0		
	H	0	0	0	0	0	1	1	-	0	0	0	0	-	-	2	0	H	0	0	0	0	0	1	1	-	0	0	0	0	-	-	2	0	0	0	
	I	0	0	0	0	0	0	0	0	0	-	1	0	1	-	-	2	0	I	0	0	0	0	0	0	0	0	0	-	1	0	1	-	-	2	0	0
	L	0	0	0	0	0	0	0	0	0	0	-	0	0	0	-	-	0	0	L	0	0	0	0	0	0	0	0	0	0	-	0	0	0	-	-	0
M	0	0	0	0	0	0	0	0	0	0	0	-	0	-	-	0	0	M	0	0	0	0	0	0	0	0	0	0	0	-	0	-	-	0	0	0	0
N	0	0	0	0	0	0	0	0	0	0	-1	0	-	-	-	0	1	N	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	0	0	0	0
Tot	+	0	1	3	1	0	1	1	0	0	1	0	1	-	-	9	-	+	0	1	2	0	0	1	1	0	0	1	0	1	-	-	7	-	-	7	-
	-	2	0	0	1	2	0	0	0	0	1	0	0	-	-	-	6	-	-	2	0	0	1	2	0	0	0	0	0	0	-	-	-	-	-	-	5

We recorded 16 positive and 11 negative variations. Only 4 out of 12 participants kept all the previously given evaluations, and only 2 did not receive changes in the previously received evaluations.

Working Group 1 was the most active: all participants changed both the given and received evaluations, with both positive and negative variations. The number of positive and negative

variations was the same for the competence dimension, but the negatives were more than the positives for the shared view dimension. As appraisers, participant E provided only positive variations, two (C, D) only negative ones, and two (A, B) mixed both. As appraisees, two (B, C) received only positive variations, two (A, E) only negative ones, and D mixed both.

Working Group 2 showed only four positive variations (two for each dimension), provided by only one participant (H) for both the others (F, G). Working Group 3 showed four positive (provided by one participant) and one negative variations.

## Group working session 2

Table 9 presents the variations occurred at the fourth interview, after group working session 2.

Table 9 Variations between the fourth and the third interviews of the individual assessment of competence and shared view of other participants. Total counts the number of positive (+) and negative (-) variations. Squared boxes delimit the three Working Groups.

Competence															Shared view																		
A	Appraisees														Tot		B	Appraisees														Tot	
	A	B	C	D	E	F	G	H	I	L	M	N	O	P	+	-		A	B	C	D	E	F	G	H	I	L	M	N	O	P	+	-
Appraisers	A	-	0	0	0	0	0	0	1	0	0	0	-	-	1	0	A	-	0	0	0	0	0	0	1	0	0	0	-	-1	1	1	
	B	0	-	0	0	0	0	0	0	0	0	0	-	-	0	0	B	-2	-	0	0	1	0	0	0	0	0	0	-	-	1	1	
	C	0	0	-	0	0	0	0	0	0	0	0	-	-	0	0	C	0	0	-	0	0	0	0	0	0	0	0	-	-	0	0	
	D	0	1	0	-	0	0	0	0	0	0	0	-	-	1	0	D	0	1	-1	-	0	0	0	0	0	0	0	-	-	1	1	
	E	0	0	0	0	-	0	0	0	0	0	0	-	-	0	0	E	0	0	0	1	-	0	0	0	0	0	0	-	-	1	0	
	F	0	0	0	0	0	-	0	1	0	0	0	0	-	-	1	0	F	0	0	0	0	0	-	0	0	0	0	-	-	0	0	
	G	0	0	0	0	0	0	-	0	0	0	0	0	-	-	0	0	G	0	0	0	0	0	0	-	0	0	0	-	-	0	0	
	H	0	0	0	0	0	0	0	-	0	0	0	0	-	-	0	0	H	0	0	0	0	0	0	-	0	0	0	-	-	0	0	
	I	0	1	0	0	0	0	1	0	-	0	0	0	-	-	2	0	I	0	0	0	0	0	0	0	-	0	0	0	-	-	0	0
	L	0	0	0	0	0	0	0	0	0	-	0	0	-	-	0	0	L	0	0	0	0	0	0	0	0	-	0	0	-	-	0	0
	M	0	0	0	0	0	0	0	0	0	0	-	0	-	-	0	0	M	0	0	0	0	0	0	0	0	-	0	-	-	0	0	
	N	0	0	0	0	0	0	0	0	0	0	0	-	-	0	0	N	0	0	0	0	0	0	0	0	0	-1	-1	-	-	-	0	2
Tot	+	0	2	0	0	0	0	1	1	1	0	0	-	-	5	-	+	0	1	0	1	1	0	0	0	1	0	0	-	-	4	-	
	-	0	0	0	0	0	0	0	0	0	0	0	-	-	0	-	-	1	0	1	0	0	0	0	0	1	1	0	-	-1	-	5	

The overall number of changes decreased: only 5 (15 in the previous interview) for competence and 9 (12 in the previous interview) for shared view. Variations were only positive for the competence dimension, and 4 negatives and 5 positives for the shared view dimension. Noteworthy, 5 out of 14 variations were about participants not being part of the same working group (and one about participant P who was not even part of both the group working sessions).

Working Group 1 continued to experience both positive and negative variations, especially about shared view. Participant E continued to provide only positive variations, participant A to receive negative ones, and B to receive positive ones.

Working Group 2 showed only a positive variation (about competence), and Working Group 3 only two negative variations (about shared view).

#### Dispersion patterns

The rest of this section reports the dispersion of evaluations registered during the different interviews.

*Table 10 Statistics about individual assessments after plenary session. Green indicate positive variations over the previous session, red negative ones.*

Int.	Competence								Shared view							
	MIN	0,25	0,5	0,75	MAX	D	+	-	MIN	0,25	0,5	0,75	MAX	D	+	-
First	2	3	4	4	5	0,48	-	-	2	3	4	5	5	0,48	-	-
Second	2	4	4	4	5	0,46	21	5	2	4	4	5	5	0,40	31	6

Table 10 shows that the plenary session (between the 1<sup>st</sup> and the 2<sup>nd</sup> interview) reduced the dispersion of evaluations, through the increase of the first quartile.

Table 11 Statistics about individual assessments Working Group 1. Green (positive) and red (negative) indicate variations over the previous phase.

Int.	Competence								Shared view							
	MIN	0,25	0,5	0,75	MAX	D	+	-	MIN	0,25	0,5	0,75	MAX	D	+	-
Second	3	4	4	5	5	0,26	-	-	2	4	4	5	5	0,5	-	-
Third	4	4	4	5	5	0,21	5	5	2	4	4	5	5	0,48	3	5
Fourth	4	4	4	5	5	0,23	1	0	2	3,75	4	5	5	0,56	3	2

Table 11 shows, for Group 1, that dispersion had an overall decrease for the competence dimension – because of an increase of the minimum value –, but an overall increase for the shared view dimension – because of a decrease of the first quartile value. Both dimensions show a non-monotonic pattern, because dispersion decreased after the first group working session, and increased after the second one.

Table 12 Statistics about individual assessments Group 2. Green (positive) and red (negative) indicate variations over the previous phase. GW stands for Group Working (session 1, or 2).

Int.	Competence								Shared view							
	MIN	0,25	0,5	0,75	MAX	D	+	-	MIN	0,25	0,5	0,75	MAX	D	+	-
Second	2	3,25	4	4	4	0,36	-	-	3	4	4	4	5	0,28	-	-
Third	2	3,25	4	4,75	5	0,58	2	0	3	4	4,5	5	5	0,39	2	0
Fourth	2	4	4	4,75	5	0,5	1	0	3	4	4,5	5	5	0,39	0	0

Table 12 shows, for Group 2, that dispersion had an overall increase for both dimensions. The competence level showed an increase of the first, third and fourth quartiles. The shared dimension showed an increase of the second and third quartiles. We recorded a non-monotonic variation for

the competence level, because dispersion increased after the first group working session, and decreased after the second one.

Table 13 Statistics about individual assessments Group 3. Green (positive) and red (negative) indicate variations over the previous phase. GW stands for Group Working (session 1, or 2).

Int	Competence								Shared view							
	MIN	0,25	0,5	0,75	MAX	D	+	-	MIN	0,25	0,5	0,75	MAX	D	+	-
Second	2	4	4	4,25	5	0,4	-	-	3	4	4	5	5	0,36	-	-
Third	2	4	4	5	5	0,52	2	1	3	4	4,5	5	5	0,39	2	0
Fourth	2	4	4	5	5	0,52	0	0	3	3,75	4	5	5	0,43	0	2

Table 13 shows, for Group 3, that dispersion increased for both dimensions. The competence level showed an increase of the third quartile during the third interview, while the shared level showed a decrease of the first quartile. We did not record non-monotonic variations.

Overall speaking, the plenary session reduced the dispersion for both the dimensions, while the group working sessions mostly increased the dispersion, regardless the directions (positive or negative) of the variations.

### 4.3 Highlights on individual participants

This focus reports four participants that show interesting individual dynamics, resulting from the combination of the qualitative and quantitative data, which deserve an in-depth presentation.

#### Participant A

Participant A (Hotel Trade Association) was an example of non-homogenous variation of social capital during a procedure (see Table 14).

1 Table 14 Number of variations of evaluations – by intensity - for Participant A.

Dimension	Interview	Intensity						Dispersion	
		-3	-2	-1	+1	+2	+3	Target	Source
Competence	Second	0	0	0	1	0	0	0,19	0,19
	Third	0	0	2	0	0	0	0,19	0,19
	Fourth	0	0	0	0	0	0	0,19	0,19
Shared view	Second	0	0	1	1	0	0	0,62	0,25
	Third	1	0	1	0	0	0	0,5	0,19
	Fourth	0	1	0	0	0	0	0,37	0,19

2

3 After the plenary session, participant A received a positive variation for the competence level and  
 4 two opposite variations, of the same magnitude, for the shared view. However, participant A  
 5 received only negative variation during the working group sessions. Participants of that group  
 6 reported that it was hard to deal with participant A during group working sessions, because it was  
 7 focusing on the needs of the hotels, going out of the scope. In addition, participant B reported  
 8 relevant disagreements with participant A about the typology of tourism to be develop that – in  
 9 turn – influences the role of the University. The analysis of the dispersion confirmed a convergence  
 10 of negative evaluations about participant A, showing a generalized negative feeling about its  
 11 positions.

12 The negative feeling was also acknowledged by the same participant A which reported a very  
 13 narrow mindset of the other participants - as showed by negative converging evaluations about the  
 14 others - and, ironically, concluded that *“it is odd that I agree with the others but the others don’t*  
 15 *with me”*.



## Participant B

Participant B (trade association) was an example of how a participant might start from suffering of a negative perception coming from the others, but how a procedure may help to better such feelings.

*Table 15 Number of variations of evaluations – by intensity - for Stakeholder B.*

Dimension	Interview	Intensity						Dispersion	
		-3	-2	-1	+1	+2	+3	Target	Source
Competence	Second	-	-	-	-	-	-	0	0,37
	Third	0	0	0	1	0	0	0,19	0,25
	Fourth	0	0	0	1	0	0	0,25	0,25
Shared view	Second	-	-	-	-	-	-	0,56	0,5
	Third	0	0	0	0	0	1	0,25	0,44
	Fourth	0	0	0	1	0	0	0,19	0,62

Participant B could not join the plenary session, so evaluations refer to working group sessions only. Participant E, one of the two NGOs, expressed, initially, deep concern about the expected position of stakeholder B, giving a very low value for shared vision. After the working group sessions, participant E told us to be positively surprised about participant B when they could discuss and confront on specific topics. Participant B gained better evaluations for both dimensions, especially for shared view. In addition, participant B shared the same concerns of the other participants about participant A. Such convergence helped participant B and the others to define a common position which built trust between them.

# 1 Participant N

2 Stakeholder N was an example of how a procedure may initially generate a hope that turned  
3 disillusioned.

4 *Table 16 Number of variations of evaluations – by intensity - for participant N.*

Dimension	Interview	Intensity						Dispersion	
		-3	-2	-1	+1	+2	+3	Target	Source
Competence	Second	0	0	1	0	1	0	0,22	0,22
	Third	0	0	1	0	0	0	0,22	0,45
	Fourth	0	0	0	0	0	0	0,22	0,45
Shared view	Second	0	0	1	1	2	0	0,45	0,22
	Third	0	0	0	0	0	0	0,45	0,22
	Fourth	0	0	2	0	0	0	0,45	0,22

5  
6 Participant N reported a positive experience about the plenary session that, in its view, helped  
7 participants to understand the novelty and the importance of the topic. However, participant N was  
8 not satisfied by group working sessions, because it reported the group was discussing on tourism,  
9 and not on University, with the results that the final findings were just a collage of different ideas,  
10 without being able to make a synthesis.

11 Participant N did not change perception after the second working group session, confirming that  
12 the other participants were not focusing on the task, and the lack of knowledge about the topic was  
13 still evident. However, participant N reported that part of its evaluations might be dependent on  
14 recent negative feelings – maturated outside UnissOlbia2020 – with the participants of the working  
15 group.

## Participant O

Participant O (school board President) is an example of how negative dynamics of social capital within a procedure (see Table 17) might led to exclusion of participants.

*Table 17 Recorded variations for participant O – only plenary session. Green indicate positive variations, red negative ones.*

Dimension	Interview	Intensity					
		-3	-2	-1	+1	+2	+3
Competence	Second	1	1	3	0	0	0
Shared view		0	0	2	2	0	0

After the plenary session, five participants reduced the of the level of competence of participant O, while no one improved that. These participants pointed out that participant O was out of the scope of the discussion, and had an unclear and uncoherent position. However, such very negative evaluation did not involve the shared view dimension, which registered two positive and two negative variations of the same magnitude. On the other side, participant O confirmed all the evaluations about the other participants because it said claimed that it was too early to judge the others.

A few days before the first group working session, participant O communicated its impossibility to follow the next steps because of family business. Facilitators communicated such resignation to the other participants. During the third interview, after the first group working session, a participant reported that it talked to the school board members of participant O, warning that participant O was collecting a bad reputation, with the risk to mine the reputation of the school itself. This participant got informed that the school board asked participant O to retreat from UnissOlbia2020.

#### 4.4 Subjective evaluations of the participatory tools

Table 18 and Table 19 report the individual evaluations and feedback on the different participatory tools

Table 18 Subjective evaluations of the different used tools. For each dimension, the grey cell indicates the row with highest median value.

Tool	Dimension	Useless	slightly useful	somewhat useful	useful	Very useful
Plenary	Understanding content	-	-	2	5	3
	Understanding others	-	1	-	2	7
	Reflection and elaboration	-	-	1	5	4
Group working sessions	Understanding content	-	-	-	7	5
	Understanding others	-	-	1	1	10
	Reflection and elaboration	-	-	-	6	6
Individual interviews	Understanding content	-	-	-	-	12
	Understanding others	-	4	2	2	4

	Reflection and elaboration	-	-	2	1	9
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- 1
- 2 Group working sessions were the most appreciated to improve understanding of others' positions,
- 3 an essential element in the dynamics of social capital. Individual interviews were essential to
- 4 understand the content and to elaborate own positions within the different discussions.
- 5 The following table reports the main feedback about the different tools.

6 *Table 19 Feedback on the different used tools. Grey cells as in Table 18.*

Tool	Dimension	Positive feedback	Negative feedback
Plenary	Understanding content	-	-
	Understanding others	<ul style="list-style-type: none"> <li>• It is a democratic and synthetic moment of confront of different positions</li> <li>• The only way to know all the positions</li> <li>• A good way to show the general lack of knowledge about the topic</li> </ul>	<ul style="list-style-type: none"> <li>• It is too easy to get quick out of the scope</li> <li>• Too much exhibitionism</li> </ul>
	Reflection and elaboration	-	-

Group workshops	Understanding content	<ul style="list-style-type: none"> <li>• The only way to get relevant and not superficial outcomes</li> </ul>	-
	Understanding others	<ul style="list-style-type: none"> <li>• The best way to understand others' positions</li> </ul>	<ul style="list-style-type: none"> <li>• We lost ourselves in unnecessary details</li> <li>• Too easy to end up in fighting</li> <li>• The value lowers if participants do not stick to rules about how to work together</li> </ul>
	Reflection and elaboration	<ul style="list-style-type: none"> <li>• The confront on details allows individuals to define own positions</li> </ul>	-
Individual interviews	Understanding content	<ul style="list-style-type: none"> <li>• Understanding of specific topics and actions</li> </ul>	<ul style="list-style-type: none"> <li>• Tiring when the topic and the expected contribution is unclear</li> </ul>
	Understanding others	<ul style="list-style-type: none"> <li>• Allow to reflect on other participants' positions which were not immediately clear</li> </ul>	-

	Reflection and elaboration	<ul style="list-style-type: none"><li>• Allow to reflect on the own positions expressed during the confront</li></ul>	-
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1

2 Participants highlighted that the individual interviews were very important for two reasons. First,

3 the presence of interviewers from University helped participants to better navigate the discussed

4 topics and activities. Second, participants found the repeated interviews useful to reflect on and to

5 formulate their own opinions on discussions held during the plenary or the working group sessions.

## 5. Discussion

The discussion develops against the research question which is again reported: “*Does the on-going monitoring of social capital during a participative procedure produce new knowledge about the dynamics of social capital?*”. We discuss, point by point, the relevant new knowledge produced by the on-going monitoring approach.

**Non-monotonic variations.** We recorded several non-monotonic variations of social capital. Two participants (C, N) showed non-monotonic variations, where they reported, first, positive variations (about, respectively, participants D, and L) followed by negative ones. The existence and the magnitude of non-monotonic variations, providing a non-linear picture of the dynamics of social capital, could not have been monitored through a traditional ex-post measurement.

**Different implications of negative variations of social capital.** Participant O left the procedure after the other participants deeply questioned its competence and informed its stakeholder, confirming the idea that high level of social capital may produce lobbying effects which limit participation (Adger, 2003; Wagner and Fernandez-Gimenez, 2008). Differently, participant A showed a negative dynamic which did not lead to exclusion. Interviews with other participants indicated that lack of competence can be a good reason to exclude someone from the procedure, but differences in views are not. In other words, participants were keen to discuss when other participants hold different views, but not when the others do not seem competent. We conclude that there were different negative dynamics which produced different outcomes in terms of interpersonal relationships.

**Different impacts of different tools.** Plenary session and group working showed different dynamics in respect to variation and dispersion of social capital. It seems an important contribution



1 along the line of Beierle (1998) about the need to identify how different public participation  
2 techniques impact on social goals, because social capital might be sensitive to the different  
3 participatory approaches being used. Such finding might also be relevant for facilitators which  
4 design procedures and techniques, and might consider the different expected dynamics of social  
5 capital.

6 **Keeping memory of evaluations.** We found that repeated individual interviews – if shared with  
7 the participants - played the role of personal diary where memories are stored. During the individual  
8 interviews following the first one, some participants could not justify the previous evaluations and  
9 they needed to recall the memories about what happened in the previous sessions. Such approach  
10 had the effect to lower the magnitude of the proposed changes, building more cumulative and  
11 incremental patterns. Such finding is consistent with the idea that only ex-post evaluations might  
12 have a bias in evaluating the quality of a procedure (Beierle, 1999), because participants may show  
13 short-term based evaluations. In our view, repeated measurements played the role of a personal  
14 diary where participants could keep track of different evaluations, lowering the risk of short-term  
15 perspective.

16 The proposed monitoring system provided interesting results but with some drawbacks that are  
17 mentioned in the next points.

18 **Resource consuming activity.** We performed four interviews for each participant, and we  
19 demanded the presence of the same interview and interviewee to validate questionnaire. At the end,  
20 the interviewee reported about 3-4 hours of individual interviews for each participant. Such  
21 workload might be overwhelming in case of many participants. In addition, the setting of the  
22 interviews was not an easy task.

1 **Ex-ante well-defined design.** The on-going monitoring system needs to be ex-ante designed.  
2 Consequently, the on-going monitoring system has a limited applicability because it cannot be  
3 applied to procedures which were already performed. This limitation cuts off many potential  
4 interesting cases of public participation which were not tracked at the time they were performed.

5 **Limited number of participants.** The on-going monitoring system limited the number of potential  
6 participants at UnissOlbia2020 because of two reasons. First, it was needed to have always the  
7 same participants to avoid subjective bias in individual evaluations. Second, each participant had  
8 to evaluate all the other participants, and – to be feasible – we could not include many participants.  
9 In some cases, limiting the number of participants might reduce the quality of the public procedure  
10 under a minimum threshold, so the proposed system might produce a trade-off between the quality  
11 of participation and the quality of measurement of social capital.

12 Following the dominant position in literature, we found that public participation had an overall  
13 positive effect on social capital. However, we recorded negative dynamics as reported by part of  
14 literature. First, the procedure fueled conflicts between some of the participants and participant A:  
15 without UnissOlbia2020 such participants would not have had the chance to interact. Second, the  
16 exclusion of participant O is a good example of how strong ties may negatively influence a  
17 procedure. In fact, the other participants were able to force participant O to take step back and quit.

18 The findings confirm the initial line of reasoning of this work: processes of creation and destruction  
19 of social capital might occur at the same time and may follow nonlinear patterns of change over  
20 time. By doing that, we conclude that future research shall not focus on whether social capital is  
21 formed or destroyed through public participation, but how it evolves. The repeated on-going  
22 monitoring system proved being useful especially if it is able, as proposed by Beierle (1999), to  
23 move away from process- or interest-oriented evaluations of participative process because they

1 might be not able to depict the complexity of social capital dynamics that represent, in turn, the  
2 complexity of social and human relationships.

3 As final comment, we highlight two more findings which are not strictly related to the guiding  
4 research question, but might be of interest for scholars studying social capital and public  
5 participation. First, 9 out of 15 respondents indicated that the individual learning started already  
6 during the first individual interview, before any phases of confront with the others. These  
7 respondents explained that the invitation to join UnissOlbia2020 encouraged them to reflect and to  
8 share views with other known participants. Paradoxically, announcing a procedure – without even  
9 running it - may already produce some of the expected learning effects of a procedure.

10 Second, interviews made clear that the individual moment was an essential part of the learning  
11 process. While we intended individual interviews for tracking social capital dynamics, it was clear,  
12 since the first interview, that participants appreciated the interviews to better understand the  
13 procedure, to reflect on other participants' position, and to clarify own positions and meanings.  
14 Such experience is highly consistent with the idea that people, in the everyday decision, use  
15 cognitive unreflective heuristics and that a participative procedure may enhance collective learning  
16 if it provides space for individual reflection (Ryfe, 2005, p. 51). This finding might also be used to  
17 sustain that the existence of individual moment should be part of the evaluations of different  
18 participatory techniques (Beierle, 1998). Consequently, we suggest that individual reflexive  
19 moments within a participatory procedure may produce two relevant positive effects: i) to allow  
20 measurements of social capital, and; ii) to improve the learning process of the procedure.

21

## 6. Conclusion

This work presented a participative procedure, called UnissOlbia2020, which was explicitly designed to answer to the following research question “*Does the on-going monitoring of social capital during a participative procedure produce new knowledge about the dynamics of social capital?*”.

The brief answer is *Yes*. The proposed monitoring system allowed us to draw new knowledge about the complexity of the dynamics of social capital, with both process of creation and destruction occurring at the same time and through nonlinear patterns of development. More specifically, we identified the following four relevant results: i) evolution of social capital might be nonlinear and might follow non-monotonic patterns of evolution over time; ii) there might be qualitative different dynamics within both positive and negative variations of social capital and the tracking system might help to predict future evolution: for example, we recorded two different negative dynamics, one leading to confront between participants, and one to exclusion of a participant; iii) different participatory instruments may lead to different dynamics of social capital, so the design of a procedure is an important factor to be evaluated in studies about relationship between public participation and social capital; iv) repeating measurement of social capitals provides a memory effect which reduces the intensity of variation of social capital evaluations.

We also found that the on-going monitoring system has some drawbacks which need to be taken in account, because the monitoring system: i) was resource consuming; ii) limited the number of participants, and iii) needs an ex-ante design which limits its applicability.

In addition, we found two relevant side results which are not directly related to the guiding research question but they might be of interest for those interest in participatory processes. First, we found

1 that individual learning started already before structure dialogue phases were performed, because  
2 it generated a personal motivation which led some participants to learn more about the topic and  
3 the points of views of other participants. Second, individual reflexive moment played a very  
4 important role and we suggest including such element in future participative processes.

5 The existence of remarkable results and drawbacks questions whether it is worth to implement the  
6 proposed on-going monitoring system of social capital to evaluate participative procedures. We  
7 strongly argue that it is not possible to give a clear answer, because the evaluation depends on the  
8 evaluation of the ex-ante perceived importance of both the positive and negative elements. For  
9 instance: i) *is it possible to limit the number of participants without losing quality of participation?*  
10 ii) *do the participants meet for a first time or about a novel topic, so that learning dynamics are*  
11 *essential to be deeply monitored?* iii) *are the participants keen to be involved in individual*  
12 *interviews?* All these questions provide examples of issues that facilitators should address when  
13 they design a procedure. In our view, an on-going measurement approach may provide an useful  
14 approach if: i) limiting the number of involved stakeholders is compatible with the need of  
15 representing different interests; ii) stakeholders are willingness to participate with only one  
16 participant over the time; iii) ex-ante analysis indicates that the topic is novel, and that they might  
17 be relevant changes in the dynamics of social capital between participants; iv) participants perceive  
18 that the on-going measurement may be a relevant individual learning moment.

19 As final comment, we propose two future lines of research. First, it might be worth to investigate  
20 the impacts – in terms of social goals – of different specific techniques and tools used within  
21 participative procedures. We found that the plenary meeting performed better than group working  
22 in respect of generation of positive evaluations, but we are aware that we could not generalize such  
23 findings because we expected that the first stakeholder dialogue session might have been important

1 in terms of building legitimacy between participants. Second, we suggest future works to define  
2 the possibility of on-going monitoring system of social capital not based on individual interviews.  
3 Indeed, an alternative approach may limit some of the experienced drawbacks, for example the  
4 resource consuming issue and the need to limit participants, avoiding the trade-off between the  
5 quality of procedure and the quality of measurement.

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