



**THE DYNAMICS OF SOCIAL CAPITAL DURING PUBLIC  
PARTICIPATION: NEW KNOWLEDGE FROM AN ON-GOING  
MONITORING**

**Simone Franceschini  
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# The dynamics of social capital during public participation: new knowledge from an on-going monitoring

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## Abstract

The mutual impacts between public participation and social capital has been thoroughly investigated, but little is known about the dynamics of social capital during a participative process. To fill such a gap, an ad-hoc monitoring system of social capital was implemented along an actual participative procedure about the future of an University site. Results show that: i) social capital evolution can follow non-monotonic patterns; ii) different dynamics of social interaction may occur that impact the quality of participation; iii) different participatory tools may lead to different dynamics of social capital; iv) repeated measurements of social capital generate a memory effect which reduces the variation of social capital itself. We also describe relevant drawbacks (resource consuming activities, reduced number of participants, etc.) which may reduce the applicability of the proposed approach. We conclude discussing when an on-going monitoring process is worth to be implemented, and we also describe some relevant side results for those interested to the issue of public participation: i) the announcement of the procedure already generated relevant individual learning; ii) the individual interviews were recognized as an essential learning moment, so we suggest including them into the design of any participative process.

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

**JEL Classification:** D71, D83

## 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 with reference to new sustainability challenges such as the resilience of communities (Adger, 2003; Menzel et al., 2013).

At its roots, social capital links to social interaction (Menzel et al., 2013). This is why one can find a rich literature about the relation between social capital and participation, the latter being – at its core – a process of social interaction. Part of such a literature is about the overall effects of public participation on social capital, but 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) compares ex-ante and ex-post levels of social capital during a participative process, while a second one (Wagner and Fernandez-Gimenez, 2009) only mimics the ex-ante level of social capital.

As a result, what happens to social capital within a participative process is still a *black-box* that – if open – may provide relevant information. For example, one may find that social capital follows unexpected patterns of evolution (e.g., non-linear, non-monotonic, redistributive, etc.) when stakeholders have repeated interactions over time – as typically happens during a participative process. In addition, repeated on-going measurements may generate evaluations about social capital that are less biased by the ex-post opinion of stakeholders about the achievement of their interests and goals (Beierle, 1999). In more general terms, the proposed repeated measurement system underlines that it is not relevant to focus on “whether social capital is formed or destroyed through participatory planning” (Menzel et al., 2013, p. 351), as both processes of creation and destruction of social capital normally occur at the same time. How social capital evolves through participation, both in terms of level and dispersion is then a more relevant issue (Paxton, 1999; Putnam et al., 2004).

From all the above, the following research question emerges: *What new knowledge about the dynamics of social capital is generated by its monitoring during a participative procedure?* This paper addresses this research question through the illustration and discussion of the results of a *pre-ongoing-post* measurement of social capital that was implemented along a participative procedure about the development of a University branch.

The next Section presents a brief literature review about the concept of social capital and its relationships with public participation. Section three describes the methodology and contextualizes the case study. Section four presents and five discusses the main results, respectively. Section six concludes.

## 2. Literature review

Bordieu (1986) and Coleman (1988) introduced the concept of social capital that was then 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 either 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 the direction of such an influence. Most of the studies identifies a positive feedback between the two dimensions, because: i) social capital - as input - improves the likelihood of engagement and, in turn, the quality of public participation (Pretty and Ward, 2001), and; ii) public participation builds social capital - as output - because it betters the dimensions of social capital among agents (Krzywoszynska et al., 2016; Leach et al., 2002; Wagner and Fernandez-Gimenez, 2009). This approach led to the suggestion – about the constructability of social capital - that public participation might be deliberately used to improve social capital of local communities (Grootaert, 1998). However, some studies report negative relationships between the two dimensions taking place in two different ways (Cameron et al., 2015; Van Oorschot et al., 2006; Wagner and Fernandez-Gimenez, 2008). First, public participation might fuel conflicts between participants (Bullock and Hanna, 2007). Second, high level of social capital can reduce the quality of public participation, because of lobbying effects around specific objectives and/or exclusion of other stakeholders (Adger, 2003; Wagner and Fernandez-Gimenez, 2008).

Noteworthy, literature provides some insights about the conditions under which positive or negative dynamics occur. Putnam (1993) suggested that civic engagement arises from weak horizontal ties, because it allows networking between different social groups. Sabatier (2005) found that the expected fairness and the perceived importance of having an agreement have a positive impact on new social capital, while the actual success of the procedure does not. Bullock and Hanna (2007) identified three causes (communication, personal dynamics, and process issues) that may generate conflicts in participatory processes just because participation create the conditions of interaction and interdependency between potentially conflicting participants. Gimenez (2008) found that changes in the level of social capital depends on the perceived success of the procedure and on the initial level of social capital. Wagner and Fernandez-Gimenez (2008), in line with Putnam (1993), suggested that bonding relationships within participative processes may led to lobby against or to exclude non-aligned stakeholders, reducing

overall social capital. Menzel et al. (2013) concluded that stakeholders' ability to influence the procedure might have a negative impact on trust, while fairness, appreciation of other participants, positive organizational aspects, and expected outcomes might have a positive one. Cameron et al. (2015) suggested that the effect of public participation on social capital depends on the initial level of the latter: if initial capital is low, public participation is more likely to have a negative effect on it.

Literature has also recognized the importance of further research, which paved the way to this work. Beierle (1999) suggested to move away from process- or interest-oriented evaluative frameworks about participation, where *the former* focuses on specific characteristics of the process, and the latter focuses on the degree of satisfaction of stakeholders, usually depending on their capability to achieve their own goals. Beierle pointed out that both the approaches do not track the social outcomes of the participative process which link to specific social goals. Therefore, he called for specific evaluative frameworks which focus on social capital *per se*. Leach and Sabatier (2005, p. 255) called for studies which perform repeated measurements of trust and social capital. Wagner and Gimenez (2008, p. 643) pointed out the need to better understanding relationship between collaboration and social capital. Menzel et al. (2013) called for a mixed-method approach because the complexity of the social capital dynamics requires strong qualitative analyses to complement quantitative ones. Our work follows these research suggestions: a mixed-method research approach is used to provide the reader with an in-depth understanding of social capital changes taking place during a participative process.

### **3. Methodology**

#### *3.1 Case study setting*

Since its opening in 2001, the seat in Olbia (I) of the Department in Economics and Management (DiSEA) of the University of Sassari (for brevity Olbia University) followed the tourism 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 has experienced a growing number of students: 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* - the idea that University shall better engage with society and industry, besides– is recognized as part of the evaluation of the performance of any University in Italy.

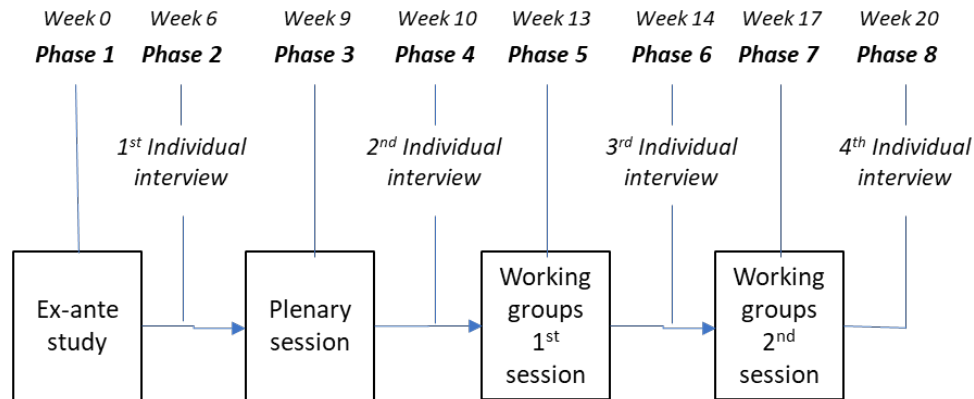
In 2015 DiSEA launched “UnissOlbia2020”, a project aimed at identifying visions and activities of Olbia University in the next years. UnissOlbia2020 was built upon a participatory approach designed to: i) increase the attention towards the role of the University in the local community; ii) acquire new ideas and actions about the most relevant educational and scientific

activities to be developed in the coming years; iii) strengthen the DiSEA *third-mission* (Secundo et al., 2017) by structuring relationships with local stakeholders beyond the traditional educational and 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 considered 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.

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



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

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

### 3.2 Measurement of social capital

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

We identified two dimensions – competence, and shared view – to measure the evolution of social capital; both dimensions refer to the social trust dimension of social capital. We did not track the dimension of norms of reciprocity, because we were unable to define an intuitive way to collect information about it through interviews. We collected only qualitative information about networks.

The questionnaire comprised two statements about social capital. Each participant had to assess all other 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	<i>Evaluations from Participant A</i>	
	<i>“She/He is highly competent about the role of Olbia University for the tourism sector”</i>	<i>“We share views and interests about the future role of Olbia University for the tourism sector”</i>
Participant B	Likert-value	Likert-value

We adopted such a 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 with) other participants.

We used the Leti-D index (Leti, 1983) to measure the dispersion of evaluations between and within respondents. Leti-D is a relevant index for Likert-scales 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 mainly had a scientific purpose.

The individual interview was repeated four times: the first time in Phase 2 of the procedure, and three more times (Phases 4,6,8), a week after each of the three stakeholder Sessions (Phases 3,5,7). During each interview, the interviewer reported the evaluations given by the interviewee in the previous interview, asking her/him to confirm or change them, and explain why. The interviewer filled the questionnaire together with the participant to guarantee the validity of answers. In addition, the interviewer took notes about relevant impressions, feelings, and feedback which were not tracked by the questionnaire.

During the final individual interview, respondents filled a second questionnaire to provide feedbacks about the tools used in UnissOlbia2020.

### *3.3 Selection of participants*

To avoid any subjective bias when measuring the dynamics of social capital, 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.

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, as each participant had to evaluate all the others. To avoid the biased decisions – and the resulting lowering of the quality of participation (Beierle, 2002) – that may be generated by an unbalanced small sample, we paid a careful attention to the composition of the stakeholder group. Therefore we did not implement 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 either participated in previous activities with Olbia University, or in the local debate about University and higher education/ scientific activities. We listed 30 potential stakeholders which were profiled with reference to the different represented interests and social groups. Moreover – as the University is a general actor – we decided to prioritize stakeholders representing general interests, avoiding – whether possible – those focusing on specific tourism segments. We achieved the goal of having all the wanted different typologies of stakeholders participating in UnissOlbia2020. Table 2 shows the final list of 15 confirmed stakeholders.

Table 2 List of participating stakeholders by categories

Categories	Stakeholders
Hotel Trade Associations	A, P
General 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

Noteworthy, Presidents of High-School Boards are parents. We invited them – and not the managers of the schools –to have a wider representation of parents who might have University students in their families in the near future.

#### 4. Results

##### 4.1 Overall evaluations

Table 3 reports the recorded variations of the individual assessments about the other participants (now on, variations) registered through the interviews.

Table 3 Numbers of negative and positive variations of the individual assessments about the other participants registered during the interviews.

Interview	Dimensions of social capital			
	Competence		Shared view	
	Var +	Var -	Var +	Var -
<b>After Plenary Session</b>	23	5	31	6
<b>After Working groups 1<sup>st</sup> session</b>	9	6	7	5
<b>After Working groups 2<sup>nd</sup> session</b>	5	0	4	5
<b>Total</b>	37	11	42	16

Table 3 shows that: i) UnissOlbia2020 had an overall positive effect on the variations; ii) the interview after the plenary session recorded the highest number of variations, especially for the positive ones; iii) all the interviews registered both positive and negative variations; iv) The interview after the 2<sup>nd</sup> working group session (fourth) tracked more negative than positive variations for the shared view dimension

Table 4 reports the variations between the 1<sup>st</sup> and the final interview.

Table 4 **Variations between the 1st and the final interview of the individual assessments about the other participants**. Tot counts the number of positive (+) and negative (-) variations. Squared boxes delimit the three Working Groups.

		Dimensions of social capital															
		Competence															
		Shared view															
		Appraisees														Tot	
		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
	B	0	-	2	-1	-1	0	0	0	0	0	0	0	0	0	1	2
	C	-1	0	-	1	0	1	0	0	1	1	0	0	0	0	4	1
	D	-1	1	0	-	0	0	2	0	0	0	0	2	-1	0	3	2
	E	0	1	1	1	-	0	0	0	0	0	0	0	0	0	3	0
	F	1	0	0	0	0	-	0	1	0	0	0	0	-1	1	3	1
	G	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0
	H	0	0	1	0	0	1	1	-	0	0	0	0	0	0	3	0
	I	0	1	1	1	0	1	1	0	-	2	0	2	0	0	7	0
	L	0	0	0	0	0	0	0	0	0	2	-	2	0	-3	0	2
M	0	0	0	0	2	0	0	0	0	0	0	-	0	-2	1	2	
N	0	0	0	0	0	0	0	0	0	0	-1	2	-	-1	0	1	
O	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	
Tot	+	1	3	5	4	1	3	4	1	3	2	3	3	0	2	35	-
	-	2	0	0	1	2	0	0	0	0	1	0	0	5	0	-	11

		Dimensions of social capital																
		Competence																
		Shared view																
		Appraisees														Tot		
		A	B	C	D	E	F	G	H	I	L	M	N	O	P	+	-	
Appraisers	A	-	0	0	1	-1	0	1	1	0	1	-1	1	1	1	-2	6	4
	B	-3	-	2	0	1	0	0	0	0	0	0	0	0	0	0	2	1
	C	-1	0	-	1	0	1	0	0	1	1	0	0	0	-1	4	2	
	D	-3	1	-1	-	-2	0	1	0	0	0	0	1	0	0	3	3	
	E	0	3	1	1	-	0	0	0	0	0	0	0	0	0	3	0	
	F	0	0	0	0	0	-	0	0	0	0	0	0	-1	0	0	1	
	G	1	0	1	1	0	1	-	0	1	1	1	1	1	1	10	0	
	H	0	0	0	0	0	1	1	-	0	0	0	0	0	0	2	0	
	I	0	0	1	1	0	1	0	0	-	2	0	2	0	0	5	0	
	L	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	
M	0	0	0	0	1	0	0	0	1	0	-	0	0	0	2	0		
N	0	0	0	0	0	0	0	0	1	1	-1	-	-1	2	3	2		
O	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	
Tot	+	1	2	4	5	2	4	3	0	5	4	2	4	2	2	40	-	
	-	3	0	1	0	2	1	0	0	0	1	1	0	2	2	-	13	

excluding participants O and P – who joined only the plenary – there was only one participant for competence (G) and one for shared view (L) who did not change their evaluations. Similarly, only participant H did not receive changes of the evaluation coming from the others.

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

Table 5 Count of variations by intensity  
Dimensions of social capital

VARIATION	Competence		Shared view	
	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%

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

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

Repeated variations between stakeholders		Second variation	
		+	-
First variation	+	I to L (competence) I to L (shared view) I to N (competence) I to N (shared view)	C to D (shared view) N to L (shared view)
	-	n.a.	B to A (shared view)

#### 4.2 Highlights on phases

##### Plenary session

Table 7 presents the variations registered during the second interview, taking place after the Plenary session.

Table 7 **Variations between the 1st and the 2nd interview of the individual assessment about the other participants.** Total counts the number of positive (+) and negative (-) variations. Squared boxes delimit the three Working groups.

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

The interview after the Plenary session registered several changes, with an overall increase of the individual assessments referring to both the dimensions of social capital. No one 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>1</sup>. We recorded one three-point change, 10 two-point changes, and 52 one-point changes. Noteworthy, we recorded only 5 negative variations for the competence level, all of them referred to participant O.

<sup>1</sup> We could compare 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 participate to the second interview

### Group working, 1<sup>st</sup> session

Table 8 presents the variations registered during the 3<sup>rd</sup> interview, after the 1<sup>st</sup> session of Group working.

Table 8 **Variations between the 2<sup>nd</sup> and the 3<sup>rd</sup> third interview of the individual assessment about the other participants.** Total counts the number of positive (+) and negative (-) variations. Squared boxes delimit the three Working Groups.

#### Dimensions of social capital

		Competence																
		Appraisees														Tot		
		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	0	-	-	1	1
	B	0	-	2	-1	-1	0	0	-	0	0	0	0	0	-	-	1	2
	C	-1	0	-	0	0	0	0	0	0	0	0	0	0	-	-	0	1
	D	-1	0	0	-	0	0	0	0	0	0	0	0	0	-	-	0	1
	E	0	1	1	1	-	0	0	0	0	0	0	0	0	-	-	3	0
	F	0	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	0	-	-	2	0
	I	0	0	0	0	0	0	0	0	-	1	0	1	0	-	-	2	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
	N	0	0	0	0	0	0	0	0	0	0	-1	0	-	-	-	0	1
Tot	+	0	1	3	1	0	1	1	0	0	1	0	1	-	-	9	-	
	-	2	0	0	1	2	0	0	0	0	1	0	0	-	-	-	6	

		Shared view																
		Appraisees														Tot		
		A	B	C	D	E	F	G	H	I	L	M	N	O	P	+	-	
Appraisers	A	-	0	0	0	-1	0	0	0	0	0	0	0	0	-	-	0	1
	B	-1	-	2	0	0	0	0	-	0	0	0	0	0	-	-	1	1
	C	0	0	-	-1	0	0	0	0	0	0	0	0	0	-	-	0	1
	D	-3	0	0	-	-2	0	0	0	0	0	0	0	0	-	-	0	2
	E	0	3	1	0	-	0	0	0	0	0	0	0	0	-	-	2	0
	F	0	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	0	-	-	2	0
	I	0	0	0	0	0	0	0	0	-	1	0	1	0	-	-	2	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
	N	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	0	0
Tot	+	0	1	2	0	0	1	1	0	0	1	0	1	0	-	-	7	-
	-	2	0	0	1	2	0	0	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 negative ones were more than the positive ones for the shared view dimension. As appraisers, one participant (E) provided only positive variations, two (C, D) only negative ones, and other two (A, B) mixed

both. As appraisees, two participants (B, C) received only positive variations, two (A, E) only negative ones, and D mixed both.

Participants to 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 variations (provided by just one participant: L) and a negative one.

### Group working session 2

Table 9 presents the variations registered during the 4<sup>th</sup> interview, after the 2<sup>nd</sup> session of Working groups.

Table 9 **Variations between the 3<sup>rd</sup> and the 4<sup>th</sup> interview of the individual assessment about other participants.** Total counts the number of positive (+) and negative (-) variations. Squared boxes delimit the three Working groups.

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

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

The overall number of variations 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).

Participants to Working group 1 continued to express 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.

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

### Dispersion patterns

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

Table 10 **Statistics about the 1<sup>st</sup> and the 2<sup>nd</sup> interview: min, max, quartiles, and dispersion (D)**. Bold values indicate variations - either positive or negative - over the previous interview.

Interview	Dimensions of social capital															
	Competence								Shared view							
	MIN	Q <sub>0,25</sub>	Q <sub>0,5</sub>	Q <sub>0,75</sub>	MAX	D	+	-	MIN	Q <sub>0,25</sub>	Q <sub>0,5</sub>	Q <sub>0,75</sub>	MAX	D	+	-
First	2	3	4	4	5	<b>0,48</b>	-	-	2	3	4	5	5	<b>0,48</b>	-	-
Second (plenary)	2	4	4	4	5	<b>0,46</b>	21	5	2	4	4	5	5	<b>0,40</b>	31	6

Table 10 shows that the interview after the Plenary session tracked a reduction of the dispersion of evaluations, only because of the increase of the first quartile.

Table 11 **Statistics about the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> interview of participants to Working group 1: min, max, quartiles, and dispersion (D)**. Bold values indicate variations - either positive or negative - over the previous interview.

Interview	Dimensions of social capital															
	Competence								Shared view							
	MIN	Q <sub>0,25</sub>	Q <sub>0,5</sub>	Q <sub>0,75</sub>	MAX	D	+	-	MIN	Q <sub>0,25</sub>	Q <sub>0,5</sub>	Q <sub>0,75</sub>	MAX	D	+	-
Second	3	4	4	5	5	0,26	-	-	2	4	4	5	5	0,5	-	-
Third	<b>4</b>	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	<b>3,75</b>	4	5	5	0,56	3	2

Table 11 shows, for participants to Working group 1, that the dispersion of individual assessments 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. Both dimensions feature a non-monotonic pattern, as dispersion decreased after the first session of Working groups session, and increased after the second one.



Table 12 **Statistics about the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> interview of participants to Working group 2: min, max, quartiles, and dispersion (D).** Bold values indicate variations - either positive or negative - over the previous interview.

Interview	Dimensions of social capital															
	Competence								Shared view							
	MIN	Q <sub>0,25</sub>	Q <sub>0,5</sub>	Q <sub>0,75</sub>	MAX	D	+	-	MIN	Q <sub>0,25</sub>	Q <sub>0,5</sub>	Q <sub>0,75</sub>	MAX	D	+	-
Second	2	3,25	4	4	4	0,36	-	-	3	4	4	4	5	0,28	-	-
Third	2	3,25	4	<b>4,75</b>	<b>5</b>	0,58	2	0	3	4	<b>4,5</b>	<b>5</b>	5	0,39	2	0
Fourth	2	<b>4</b>	4	4,75	5	0,5	1	0	3	4	4,5	5	5	0,39	0	0

Table 12 shows, for participants to Working group 2, that dispersion had an overall increase for both dimensions of social capital. The competence level showed an increase of the first, third and fourth quartile. The shared dimension showed an increase of the second and third quartile. We recorded a non-monotonic variation for the competence level, as the dispersion of individual assessment increased after the first session of Working groups, and decreased after the second one.

Table 13 **Statistics about the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> interview of participants to Working group 3: min, max, quartiles, and dispersion (D).** Bold values indicate variations - either positive or negative - over the previous interview.

Interview	Dimensions of social capital															
	Competence								Shared view							
	MIN	Q <sub>0,25</sub>	Q <sub>0,5</sub>	Q <sub>0,75</sub>	MAX	D	+	-	MIN	Q <sub>0,25</sub>	Q <sub>0,5</sub>	Q <sub>0,75</sub>	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 participants to Working 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 second interview registered the reduction of the dispersion of individual assessments of both dimensions of social capital, while the following interviews mostly tracked an increase of the dispersion, regardless the directions (positive or negative) of the variations.

### 4.3 Highlights on participants

This Paragraph is focused on four participants that showed interesting individual dynamics which deserve an in-depth presentation; reference will be made to both qualitative and quantitative data.

#### Participant A

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

Table 14 **Participant A: number of variations of received individual assessments.**

Dimensions of social capital	Interview	Variations of received individual assessments (on a 1 to 5 Likert scale)						Dispersion (D)	
		-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

After the plenary session, participant A received a positive variation for the competence level and two opposite variations, of the same magnitude, for the shared view. However, participant A received only negative variation during the working group sessions. Participants of that group reported that it was hard to deal with participant A, because he was focusing on the needs of the hotels, going out of the scope of the whole procedure. In addition, participant B reported relevant disagreements with participant A about the typology of tourism to be developed that – in turn – influences the role of the University. The analysis of the dispersion confirms a convergence of negative evaluations about participant A, confirming a generalized negative feeling about his positions.

The participant A also acknowledged the negative feeling himself because he reported a very narrow mindset of the other participants – as showed by negative converging evaluations about the others – and, ironically, concluded that “it is odd that I agree with the others but the others don’t with me”.

#### Participant B

Participant B (Trade Association) is an example of how a starting negative perception coming from the others may better just because of the social interaction taking place during a participative process.

Table 15 **Participant B: number of variations received of individual assessments.**

Dimensions of social capital	Interview	Variations of received individual assessments (on a 5-points Likert scale)						Dispersion (D)	
		-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, representing one of the two NGOs, expressed a starting deep concern about the expected position of stakeholder B, by giving a very low value for shared vision. After the Working group sessions, participant E told us to be positively surprised by the discussion on specific topics with participant B when they could discuss 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 a convergence helped all participants B to define a common position on which mutual trust could be built.

### Participant N

Stakeholder N (Craftsman Trade Associations) is an example of how a procedure may initially generate a hope that turns disillusioned afterwards.

Table 16 **Participant N: number of variations received of individual assessments.**

Dimensions of social capital	Interview	Variations of received individual assessments (on a 5-points Likert scale)						Dispersion (D)	
		-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

Participant N reported a positive experience about the Plenary session that, in his view, helped the participants to understand the novelty and the importance of the discussed topic.

However, participant N was not satisfied with the Working group sessions, because – as he reported – the group was discussing on tourism, and not on University. As a result, the group was not able to elaborate a common position, but just a collage of different ideas.

Participant N did not change perception after the second Working group session, confirming that the other participants were not focusing on the task, and that the lack of knowledge about the topic was still apparent. However, participant N reported that part of his evaluations might be dependent on recent negative feelings – generated outside UnissOlbia2020 – about the participants to the Working group.

### Participant O

Participant O (High-School Board President) is an example of how negative dynamics of social capital within a procedure (see Table 17) might led to the exclusion of a participant.

Table 17 **Recorded variations for participant O – only plenary session.**

Dimensions of social capital	Interview	Variations of received individual assessments (on a 5-points Likert scale)					
		-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 evaluation of the level of competence of participant O, while no one of the others improved that. Such participants pointed out that participant O was out of the scope of the discussion, and had an unclear and inconsistent position. However, such a 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 – as he claimed that – it was too early to judge the others.

A few days before the first Working group session, participant O announced that it was impossible for him to attend the rest of the procedure because of family reasons. Facilitators communicated such resignation to the other participants. During the third interview, after the first Working group session, a participant reported that he talked to the members of the High-school board chaired by participant O, warning that he was collecting a bad reputation, with the risk to mine the reputation of the school itself. The same participant got informed that the High-school board asked participant O to withdraw from UnissOlbia2020.

#### 4.4 *Individual assessment of participatory tools*

Table 18 and 19 report the participants' evaluations and feedbacks on the participatory tools that was implemented in the UnissOlbia2020 procedure.

Table 18 **Individual assessments of participatory tools**. For each aim, the grey cell indicates the row with highest median value.

Tool	Aim	Useless	Slightly useful	Somewhat useful	Useful	Very useful
Plenary session	Understanding content	-	-	2	5	3
	Understanding others	-	1	-	2	7
	Reflection and elaboration	-	-	1	5	4
Working group 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

Working group sessions were the most appreciated as a tool to improve the understanding of others' positions, a key element of the dynamics of social capital. Individual interviews were essential to understand the content and to elaborate his/her own position between a collective session and the other (see Table 19).

Table 19 **Qualitative individual feedbacks on participative tools.** Grey cells as in Table 18.

Tool	Aims	Positive feedback	Negative feedback
Plenary session	Understanding content	-	-
	Understanding others	A democratic and concise opportunity to compare different positions The only way to know all the positions A good way to show the general lack of knowledge about the topic	It is too easy to get quick out of the scope Too much exhibitionism
	Reflection and elaboration	-	-
Working group sessions	Understanding content	The only way to get relevant and not superficial outcomes	-
	Understanding others	The best way to understand others' positions	We lost ourselves in unnecessary details Too easy to end up in fighting The value lowers if participants do not stick to rules about how to work together
	Reflection and elaboration	The discussion of details allows individuals to define their own positions	-
Individual interviews	Understanding content	Understanding of specific topics and actions	Tiring when the topic and the expected contribution is unclear
	Understanding others	It allows to reflect on other participants' positions which were not immediately clear	-
	Reflection and elaboration	It allows to reflect on the positions expressed during the discussion	-

Participants highlighted that the individual interviews were very important for two reasons. First, the presence of interviewers from University helped participants to better navigate the discussed topics and activities. Second, participants found the repeated interviews useful to

reflect on (and to formulate) their own opinions on discussions held during the collective sessions.

## 5. Discussion

### 5.1 Discussion of main results

The discussion develops against our starting research question which is again reported here: *What new knowledge about the dynamics of social capital is generated by its monitoring during a participative procedure?* We discuss, point by point, the relevant new knowledge produced by the on-going monitoring implemented along the UnissOlbia2020 procedure.

**Non-monotonic variations.** We recorded several non-monotonic variations of social capital. Participants C and N started with positive variations of their assessments (of participants D, and L, respectively) followed by negative ones. The existence and the magnitude of non-monotonic variations – providing a complex picture of the dynamics of social capital – could not have been detected by 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, thus confirming the idea that high level of social capital may limit participation (Adger, 2003; Wagner and Fernandez-Gimenez, 2008). Participant A showed a different negative dynamic which did not lead to his 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. 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 Working group sessions showed different dynamics with reference to the variation and dispersion of social capital. It seems an important contribution – along the line suggested by Beierle (1998) – about the need to identify how different public participation techniques impact on social goals, in particular on social capital. Such a finding might also be relevant for those designers of participative procedures that consider the different expected dynamics of social capital.

**Keeping memory of evaluations.** We found that repeated individual interviews – if their content is shared with the interviewees – result in a sort of personal diary where memories are stored. During the individual interviews following the first one, some participants could not justify their previous assessments about the other participants and they needed to recall the memories about what happened in the previous sessions. Such an approach had the effect to lower the magnitude of the proposed changes in the individual assessments, thus generating more cumulative and incremental patterns. In our view, if tracked and reported, repeated individual assessments can lower the risk that participants express short-term perspectives, which is instead typical of ex-post evaluations of the dynamics of social capital (Beierle, 1999).

Considering all the above points we confirm that – following the dominant position in literature –public participation has an overall positive effect on social capital. However, we recorded negative effects too, which instead are reported by just a part of the relevant literature. First, the procedure fueled conflicts between some of the participants and participant A: without

UnissOlbia2020 such participants would not have had the chance to interact. Second, ex-ante strong ties negatively influenced the procedure: participant O was forced to take step back and quit by other participants. Our findings confirm the initial line of reasoning of this work: the creation and the destruction of social capital during a participative process might occur at the same time and may follow complex dynamic patterns. By doing that, we conclude that future research shall not focus just on whether social capital is formed or destroyed by public participation, but also on how it evolves during participation. The proposed on-going monitoring system proved useful, thus confirming what proposed by Beierle (1999): to represent the complexity of social capital dynamics – and the complexity of social and human relationships – we should move away from process- or interest-oriented evaluations of participation. The dynamics of social capital should be considered as the core of public participation, and not just as a side effect of it.

### *5.2 Discussion of other results*

The proposed monitoring system also showed some drawbacks that must be considered as results that deserve discussion too.

**Resource consuming activity.** We performed four interviews for each participant, and we demanded the presence of the same interview and interviewee to validate all the questionnaires. At the end, each interviewee experienced about 3-4 hours of individual interview. Such a workload might be overwhelming in case of many participants. In addition, the scheduling of the interviews – to be held at the latest one week after each collective session – was not an easy task, because we needed to arrange several individual interviews within a few days.

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

**Limited number of participants.** The need to implement a manageable monitoring system of the dynamics of social capital limited the number of participants to the UnissOlbia2020 participative procedure. As a small group of participants might reduce the quality of a participative procedure, the proposed on-going system generates a trade-off between the quality of participation and the quality of the measurement of social capital.

The burdens that a participative procedure should bear to accommodate the measurement of the on-going dynamics of social capital (e.g. changes in its overall design, implementation of dedicated tools, need of additional resources, limitations in the number of participants) may also explain the existing gap in the literature about the on-going evolution of social capital within participative processes.

As a final comment, we highlight two more findings which are not strictly related to the guiding research question, but might be of interest for scholars studying social capital and public participation. First, 9 out of 15 respondents pointed out that individual learning already began during the first individual interview, before any collective discussion. Such respondents explained



that the invitation to join UnissOlbia2020 encouraged them to reflect about the issues to be discussed, and to share their own views with other known participants, outside the participative procedure. Paradoxically, announcing a procedure – without even running it – may already produce some of the expected learning effects of a procedure, and generates some dynamics of social capital

Second, interviews made clear that the individual moment was an essential part of the learning process. While we intended individual interviews for tracking social capital dynamics, since the first interview participants appreciated them to better understand the procedure, to reflect on other participants' position, and to clarify their own positions and meanings. Such experience is highly consistent with the idea that people, in the everyday decision, use cognitive unreflective heuristics and that a participative procedure may enhance collective learning if it provides space for individual reflection (Ryfe, 2005, p. 51). This finding also confirms that individual moments should be part of the evaluations of participatory techniques (Beierle, 1998). Consequently, we suggest that individual reflexive moments within a participatory procedure may be aimed at reaching two relevant positive effects: i) allowing the on-going assessment of social capital, and; ii) improving the learning process generated by the procedure itself.

## 6. Conclusion

This work presented a participative procedure, called UnissOlbia2020, which was explicitly designed to answer to the following research question: *What new knowledge about the dynamics of social capital is generated by its monitoring during a participative procedure?*

The brief answer is *that* the proposed monitoring system allowed us to draw new knowledge about the dynamics of social capital, with both processes of creation and destruction occurring at the same time and through complex patterns of development. More specifically, we identified the following four relevant results: i) the evolution of social capital might follow non-monotonic patterns of evolution over time; ii) there might be qualitatively different dynamics within both positive and negative variations of social capital: for example, we recorded two different negative dynamics, one leading to confrontations between participants, and the other one to the exclusion of a participant; iii) different participatory tools may lead to different dynamics of social capital, with an apparent impact on the design of participative procedures; iv) repeated measurements of social capitals generates a memory effect which reduces the variation of social capital.

We also found that the on-going monitoring system has some drawbacks which need to be considered: i) it is resource consuming; ii) it limits the number of participants, and iii) it needs an ex-ante design which reduce 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 interested in the issue of public participation. First, we found that individual learning started before sessions of collective discussion took place: already the announcement of the procedure led some participants to increase their knowledge about the topic to be discussed, and about the points of views of other participants. Second, the interview – that was set as an individual reflexive moment – had a

significant impact on the dynamics of learning and social interaction; we suggest including such a moment into the design of any participative process.

The existence of both remarkable results and drawbacks questions whether it is worth to implement the on-going monitoring system of social capital proposed here. We argue that it is not possible to give a clear answer: it depends on the ex-ante perceived importance of both the positive and negative elements. In our view, an on-going measurement of the dynamics of social capital may prove useful if: i) limiting the number of involved stakeholders is compatible with the need of representing different interests; ii) stakeholders are willing to appoint just one participant to the whole procedure; iii) ex-ante analysis indicates that the dynamics of social capital between participants may be relevant because the discussed topic is novel, and; iv) participants perceive that individual interview may be a relevant individual learning moment on both the dynamics of social capital and the discussed topic.

As a final comment, we propose two future lines of research. First, it might be worth to investigate the impacts – in terms of social goals and interactions – of different specific techniques and tools used within participative procedures. Following participants' evaluations, we might conclude that working groups performed worst – in respect to creation of social capital – than the plenary session. However, we think that such finding cannot be generalized, because we observed that the first collective session built mutual legitimacy and recognition between participants about a topic that – it is important to remember – was new to many of them. We think that such positive dynamic might have occurred anyway at the first meeting, independently from the used tool (plenary or working group). Second, we suggest that further work is needed to understand if the on-going monitoring of social capital might be based on other tools than individual interviews. An alternative approach may reduce some of the experienced drawbacks – for example the extra-consumption of time and resources, and the need to limit participants – thus generating a better trade-off between the quality of public participation and the quality of the assessment of the dynamics of social capital.

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