

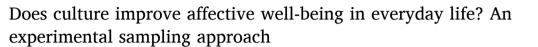
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### Research note





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### ABSTRACT

This research note studies how cultural participation impacts affective well-being in everyday life by taking a novel methodological approach via Experience Sampling Methodology (ESM). The potential for culture to improve the well-being of citizens has been a long-running subject of study. Through participation in cultural activities, individuals would gain experiences that foster feelings of liberation, engagement and confidence which are translated into positive emotions. However, existing studies have limitations, such as lacking the possibility to establish causal relationships or being limited to laboratory settings and specific cases. To increase our understanding of how cultural participation affects affective well-being, we use ESM. This is a diary survey type which allows researchers to examine what people do, feel, and think during their daily life. More than 270 respondents filled out up to 28 mini-questionnaires during a week. This created a semi-experimental design in which feelings can be compared between moments following participation and no participation. The results show significant positive impact of participation on well-being, controlled for where individuals are and with whom, as well as social background characteristics.

# 1. Introduction

The potential of arts and culture for improving health and well-being has been increasingly taken into consideration by policy makers in the past years (Clift and Camic, 2015; Zbranca et al., 2022). On the one hand, policy makers struggle with the declining legitimacy of art-for-art's-sake in society, and argue that arts and culture (also) deserve funding for instrumental reasons, thereby utilizing the importance of good physical and mental health for society (e.g. Crealey et al., 2023). On the other hand, researchers have been studying the (possible) impact of arts and culture participation on health and well-being for decades – research which has been compiled in various large scoping reviews often aimed at the policy field (see Fancourt & Finn, 2019; Browne Gott, 2020; Zbranca

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et al., 2022). Arts and culture is considered a promising adjunct to antidepressants and therapy, less as an additional kind of therapy, but by facilitating access to arts and cultural events for people with low mental health and well-being, and also as a prevention (Bungay & Clift. 2010).

Despite the huge body of work done on culture and well-being, rigorous empirical work evidencing the effect of culture on well-being is still needed. This is mostly due to methodological constraints. As such, the consensus remains that evidence linking arts and well-being is inconsistent and inconclusive (Hampshire & Matthijsse, 2010; Daykin, 2019; Bungay & Clift, 2010). One common type of studies can be described as intervention studies in which certain groups of individuals within a particular context are part of a participatory project with certain outcome goals (e.g. Hamsphire & Matthijsse, 2010; Newman et al., 2013). These studies usually lack control groups, rely on cross-sectional observations, and are focused on very specific types of cultural engagement. Another group of studies employs cross-sectional surveys which tends to draw on retrospective observations. Such studies favor forms of culture that can be signalled as a memorable "event" (e.g., going to the theater, museum, cinema), and do not permit causal inferences (e.g. Grossi et al., 2014). In contrast, experimental studies do enable the study of causality, yet tend to be restrained in terms of ecological validity (Diener et al., 2022).

This study employs Experience Sampling Methodology (ESM), a variation on the diary method that aims to make multiple observations for participants in a relatively short time using smartphone technology. It has various advantages compared to the previous methods mentioned. First, it allows measurements in real life settings, as (short) surveys are sent various times a day to the participant who fills these out immediately. Second, multiple measurements with the same persons are collected, increasing the reliability, and enabling comparison across various situations in which the participant may be during the time of study. Third, ESM provides a relatively large control over the time order of the independent and dependent variable. That is, while affective well-being as dependent variable is asked for the moment the survey is filled out, it can be established whether the respondent participated in a form of culture just before receiving and filling in the survey. Together these elements allow us to create a quasi-experimental design in which the stimulus concerns participation or non-participation. Participants are thus allocated to experimental, or control group based on their actual real-life behavior – a distinction that is made multiple times. As a (proxy) pre-test, the affective well-being at the start of the study can be used.

In this research note, we show the potential of this methodology using an explorative study conducted for a larger European project (European Inventory of Societal Values of Culture as Basis for Inclusive Cultural Policies, INVENT) that studied how Europeans perceive culture and how cultural participation in the broad sense could improve affective well-being. In the spirit of this larger project, we use a very broad inclusive definition of culture and cultural participation. Various manifestations of cultural participation are looked at. One major distinction is made between participation in cultural activities versus cultural conversations. Whereas activities are often studied, conversations are more difficult to track with retrospective studies, yet do form an important element of how culture manifests itself in social relationships (Lizardo, 2016). Within these modes, there is a further breakdown in arts versus everyday types of culture.

Our results show significant effects of both participation in cultural activities and in cultural conversations. Implications and limitations are discussed.

# 2. Literature review

# 2.1. Cultural participation and well-being

In the social sciences, the term "well-being" is often vague and broad, frequently encompassing concepts like satisfaction, happiness, or fulfilment, which are colloquially understood as elements of "a good life" (Allin, 2007; Kim-Prieto et al., 2005; Oman, 2020). In general, studies on well-being employ either what is conventionally termed the "hedonic approach," wherein well-being is synonymous with pleasure, enjoyment, and satisfaction; or the "eudaimonic approach," wherein well-being is understood as a relative position towards the "best possible life" that an individual can figure out. Both approaches to well-being can employ either objective indicators (e.g., incidence of diseases, level of wealth, cultural participation etc.) or subjective indicators (i.e., perception/evaluation of a specific dimension) (Huppert et al., 2009). Consequently, some scholars focus on subjective well-being, which is defined as an individual's personal belief that their life is desirable, pleasant, and good (Diener, 2009, p. 1). This subjective well-being can be evaluated through a comprehensive assessment of key areas such as work, family, and friendships, or it can be identified in the accumulation of brief, fleeting moments in one's life (Kim-Prieto et al., 2005). Scholars have identified various approaches to subjective well-being, varying from cognitive assessments of life satisfaction, recollections of past emotional experiences, and affective evaluations of mood and emotions at specific time points (e.g. Kim-Prieto et al., 2005: 262–263; Angner, 2010; Tov, 2018; Zbranca et al., 2022). In this research note, we focus on the latter type of subjective well-being: momentary affective well-being, which can be defined as the experience of pleasant and unpleasant feelings and often is assessed by probing the degree of experiencing specific emotions (e.g., happiness, joy, contentment, sadness, anger, worry)(Tov, 2018: 3).

In recent years, there has been increasing interest among scholars and policymakers in the European Union regarding the connection between well-being and culture (Fancourt & Finn, 2019), highlighted by a recent EU report on the benefits of cultural participation for individuals' well-being (Zbranca et al., 2022). According to the report, engaging in art-related activities can help mitigate a variety of crises, from the COVID-19 pandemic to migration and displacement. Given the large variety of approaches to (subjective) well-being, it is understandable that there is no uniform theoretical framework that explains why cultural participation might positively affect well-being (Reyes-Martinez et al., 2021). Still, various studies have provided directions for understanding this relationship, particularly with regards to affective well-being.

One line of argument states that individuals gain experiences that foster feelings of liberation, engagement and confidence, which are translated into positive emotions (Daykin, 2019). Others emphasize the role of social capital in creating a sense of belonging and connecting with like-minded people in the Bourdieusian sense, which produces positive feelings and emotions (Hampshire & Matthijsse, 2010; Blessi et al., 2014). Why cultural participation would differ from other types of leisure behavior, however, is not clear – making it relevant to compare various types of culture (as we will explain later). Cultural forms which are in some way mediated often contain narrative structures, (fictional) characters, and emotion-triggering plots which can lead to both eudaimonic and hedonic responses (e.g. Wulf et al., 2018). For example, recent work on "transformative reading experiences" explains the potential of literary texts to provide life insights through emotional engagement in the text which increase well-being (Andersen & Hakemulder, 2024). Forms of cultural participation which require physical activity (e.g. dancing, singing, making theater) tend to enhance one's relationship with the body which support emotional regulation, reduction of stress, and mood improvement (see Zbranca et al., 2022: 54–55).

Yet, one consistent problem in researching the effect of cultural participation on well-being (and this applies to all types of well-being) that is signalled in scoping reviews concerns the lack of evidence on the causality of the relationship. While the association has been established time and again, often it cannot be ruled out that well-being influences participation, or that a third underlying factor influences both. Reviewing a broad range of studies, Browne Gott (2020) concludes that many research projects focused on specific outcomes and could not rule out alternative explanations. Zbranca et al. (2022) emphasize the positive relationship stating that "participation in receptive and creative cultural activities is associated with good health, good satisfaction with life, and low anxiety and depression scores." (p.17). Yet, their review also showed that many results stemmed from intervention projects, cross-sectional studies, or experiments. It is not always clear how the limitations of these methods are resolved.

Another issue concerns the focus on specific forms of culture, often within intervention projects. That is, therapeutic powers of, for example, theater or music are shown in a carefully designed project that involves in-depth engagement with the cultural activity, is not necessarily generalizable to more everyday encounters with culture. There are some studies which examine the impact of cultural participation in a broader way, but they tend to draw on cross-sectional surveys that ask for average frequency of participation (Wheatley & Bickerton, 2017). Arguably, such studies inform us on the general association between well-being and cultural participation, but again invoke the causality problem (e.g. Grossi et al., 2012; Blessi et al. 2014; Reyes-Martinez et al., 2021).

Oman (2021) signals another issue with survey-based studies: these tend to focus on restricted and sometimes biased ways in which culture is defined, leaving out everyday forms of culture that are more difficult to capture. Her proposal to apply more inductive, qualitative methodologies would indeed showcase the broader, often invisible ways that culture affects well-being, but does not solve the causality problem.

In summary, a large portion of the empirical studies into the relation between cultural participation and well-being relies on intervention projects that often concern specific audiences, specific forms of culture, and lack control for spurious effects. Survey studies show associations and mostly in terms of general lifestyle practices and life satisfaction, but not effects of specific cultural stimuli. Experiments, finally, show causal effects, but tend to be limited to one experimental stimulus, often in an artificial laboratory situation, lacking ecological validity.

# 2.2. Experience sampling methodology

To advance our understanding of how cultural participation and affective well-being are related, we employ Experience Sampling Methodology (ESM). ESM was developed by psychologist Mihaly Csikszentmihalyi and his collaborators in the late 1970s as a form of diary study that enabled researchers to observe behaviours, thoughts and feelings (almost) at the moment that these are present (Csikszentmihalyi et al., 1977). The rise of smartphone technology has given the method a new impetus. Consequently, various research fields have employed ESM to examine the link between stimuli and feelings or emotions these arouse (see also Kim-Prieto et al., 2005: 263).

Regarding culture, most previous work has focused on music. One of the first studies was by Sloboda et al. (2001) who – still in the pre-smartphone age – showed that music has a greater impact on mood change when listeners have larger autonomy of choice for what they listen to. Follow-up studies emphasized how the context of music listening shapes responses to and engagement with music, particularly with regards to aroused emotions (Juslin et al., 2008; Greasley & Lamont (2011). Greb et al. (2019) analysed how music selection is influenced by the situation a person resides in, particularly the function of music listening at that moment and the presence of others.

More recently, ESM has been used to study affective well-being in relation to social media use. Not only have the downsides of intensive social media usage by young people on their well-being become more evident (e.g. social pressures, exposure to bullying), the ubiquity and continuous use of mobile social media has rendered ESM appropriate to study these effects (Reissmann et al., 2018). Concretely, by inquiring several times a day during a defined period what individuals did with their mobile social media in the past hour and how they feel at that moment (just after the act), scholars have been able to connect activity and the feeling it aroused in real-time, in a series of observational moments (e.g. Beyens et al., 2021; Karsay et al., 2022). In a similar vein, Li et al. (2022) examined how physical activities were associated with degrees of affective well-being.

Following these previous studies, this article employs ESM to examine how participation in cultural activities and conversations is connected to degrees of affective well-being in everyday life. Further details of the design are explained in the methodology section.

# 3. Methodology

# 3.1. Research design and research subjects

This study follows the fundamental principles of ESM in order to achieve a quasi-experimental research design in a real-life setting (Myin-Germeys & Kuppens, 2022). Subjects<sup>[1]</sup> received four short questionnaires via their smartphone per day, for seven days in a row, that they were asked to complete exactly in that moment. These questionnaires are also called "beeps" (or "signals") (Cotter & Silvia, 2021). The first question of every beep always asked for their current well-being, subsequent questions asked whether they had participated in a cultural activity or – in a different survey version – cultural conversation – thereby creating natural stimulus or control settings within individuals: having participated or not.

The research was part of a larger European research project (INVENT, https://inventculture.eu/) studying perceptions and impacts of culture in nine European countries (Croatia, Denmark, Finland, France, the Netherlands, Serbia, Spain, Switzerland, United Kingdom). Limited resources were available for the study, which resulted in different ways to recruit research subjects in the nine countries. In most countries, subjects were recruited via respondents to a previous survey in the research project; social media channels; flyers; university students; and personal networks. In the UK, subjects were primarily recruited with the help of a research agency. In total 348 subjects gave consent to participation and answered at least one survey.

Data were collected in June 2022 through a smartphone app called m-Path, which is a free and GDPR compliant platform for collecting data directly from participants. The study received ethical approval by Erasmus University Rotterdam. Two pilot studies were conducted to test survey questions and the app. One study collaborated with cultural institutions and organizations, and aimed to examine the anticipations and experiences of specific cultural events. The other pilot study focused on the Eurovision song contest 2022 and approached fans to follow their engagement in the build-up to and during the event, as well as afterwards. Both pilot studies aided the survey development and technical design of the ESM study in this article.

While the data is not a true random sample and are not representative of their reference populations it is also not limited to high school or university students as many other ESM studies (e.g. Beyens et al., 2021). Indeed, the subjects present a diversity of socio background regarding gender (51% female) and age (19% 18–25 years; 26% 26–35 years; 17% 36–45 years; 18% 46–55 years, 12% 56–65 years; 7% older than 65), as well as in terms of educational level and employment status, although there is a clear over-representation of subjects with a higher volume of cultural capital (almost 65% of our sample having a higher education degree). [2]

# 3.2. Procedure

Research subjects who were approached were directed – via a link in the invitation email or QR code on a flyer – to a private website of the project that contained information on the study (including ethical guidelines) and instructions on how to download the app on their telephone. Note that subjects could enroll in the study under a nickname that would not disclose their identity. As soon as subjects had enrolled, they received an intake survey that, first, asked for consent, and, if this was given, asked for social background characteristics. Each country recruited their own subjects following this procedure. The webpages and surveys were all translated in local languages. All countries used the premium account of m-Path, except the UK.<sup>[3]</sup>

Subjects who had given consent received four surveys per day for seven consecutive days. For every subject in the study, the research team programmed the beeps to be sent automatically at semi-random times one or two days after the intake survey was done and consent checked. Beeps were in principle programmed in the time slots between 10 and 12 AM, 13 and 15 PM, 17 and 19 PM, and 20 and 22 PM. [4] The starting day could differ, depending on when the subject took the intake survey.

There were two survey variants: one focused on cultural participation; the other on cultural conversations (see Fig. 1). Each day subjects received two of both, always alternating during the day, but the starting survey would always be different than the day before. All surveys started with momentary questions on affective well-being, current location of the subject, and company. Then, subjects were asked whether they had participated in either a cultural activity or in a cultural conversation since the last beep. In case of a positive answer, a battery of questions would follow. If the subject denied having participated, the survey would end.

# 3.3. Compliance

The unit of analysis in our study consists of beeps, which represent momentary measures of affective well-being and cultural

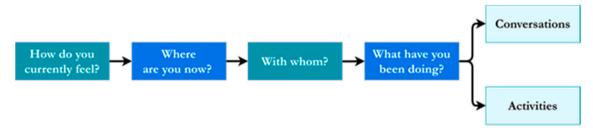


Fig. 1. Structure of questionnaire.

participation. These beeps are linked to a subject, which is considered one of the levels of control in the analysis (see further details below). The total number of beeps that were scheduled and sent out was 9788;<sup>[5]</sup> the total number of compliances was 6395 (66%). During the study, some subjects dropped out or stopped responding (see 3.5). In total 242 subjects responded to at least half of the beeps, 174 to 75% of them, and 56 to all beeps. Compliance was slightly higher in afternoons (69%) than in mornings (63%), midday (64%) and evenings (66%). Of all responses, 2043 cultural participation activities were registered and 1561 cultural conversations. On 2791 occasions no cultural participation was signaled.

# 3.4. Measures

Social background characteristics (intake survey).

We asked several background characteristics in the intake survey. Gender was measured in four categories: 1) male, 2) female, 3) other, 4) prefer not to say. Age was measured in 6 categories: 1) 18–25 years, 2) 26–35 years, 3) 36–45 years, 4) 46–55 years, 5) 56–65 years, 6) Older than 65 years. Highest educational level was measured in four categories: 1) Primary education, 2) Lower secondary education, 3) Vocational training / pre-university school, 4) Higher education (including university).

Momentary assessment (intake survey, plus every beep)

Affective well-being: In line both with definitions of well-being (Tov, 2018) and previous ESM studies on emotions and moods (Beyens et al., 2020; Reissmann et al., 2018; Karsay et al., 2022) we used one item to measure affective well-being (henceforth referred to as well-being): "How do you currently feel?". Subjects could answer via a smiley (valence) slider running from 0 to 100 (very positive). Although we only have this well-being measure that can be compared between participants and non-participants, those who participated did receive additional questions on how they experienced the activity, respectively the conversation, and for the activity whether they felt better. Pearson correlations show that there is a positive association between well-being and positively experiencing the activity (r=0.40, p < .001), feeling better after the conversation (r=0.20, p < .001), and positively experiencing the conversation (r=0.49, p < .001).

Where and with whom: Every beep, subjects were also asked "Where are you now?" (8 options: At my home; At somebody else's home; At work; At school; At a cultural venue, club or association; In a public place (shop, street, café); I am travelling (in a car, train, bus); Else) and "Are you currently alone or with others?" (2 options: Alone, With others).

Participation questions (beep questions)

Our approach to cultural participation bears similarities to the 'Understanding Everyday Participation' (UEP) research project conducted in the UK from 2012 to 2016 (Miles and Gibson, 2016). Like us, UEP argues that the dominant conception of cultural participation, primarily restricted to art-related activities, is reductive, obscuring the significance of locally situated, everyday cultural practices, which are often relegated by the literature to the realm of 'non-participation'— a particularly important issue among the lower or popular classes (Heikkilä, 2022). Thus, we adopt a conception of cultural participation that extends beyond art-related activities. We also share the premise that everyday cultural participation plays a crucial role in developing social capital, sustaining social networks, and defining the parameters of 'community'. Furthermore, extending this perspective also led us to look at conversations on cultural topics. In line with Lizardo (2016), talking about popular culture and arts is an important aspect of everyday life interactions with others. While difficult to observe with conventional methods, ESM offers an opportunity to let subjects report on cultural conversations recently held.

Participation in a cultural activity was measured via the question: "Since the last questionnaire you filled out for us, have you participated in any cultural activity?" To ensure that subjects refer to the same wide perspective on culture, we provided the following definition: Culture is broadly defined and can be things like: music, television, books, food, places to go out, creative hobby's, sport, fashion, politics, games, etc.. Subjects who answered positively, received follow-up questions. For this article, the question on the type of cultural activity they did is used (10 categories plus the category other with the option to elaborate). Details can be found in the appendix.

Participation in a cultural conversation was measured via the question: "Since the last questionnaire you filled out for us, did you have a conversation with someone about culture, either online or face-to-face?" Here we provided the following definition: With conversation we mean a meaningful interaction between two or more people, not simply adding likes to online material or leaving small comments. Subjects who answered positively, received follow-up questions. One of those will be used in our analyses: the topic of the cultural conversation (12 categories plus the category other with the option to elaborate). Details can be found in the appendix.

# 3.4.1. Metadata

Various types of metadata were collected: the order number of the beep, the date and weekday the beep was sent, the time of the day the beep was sent (descriptive details on these data are published in another article: Verboord et al., in press). Also, for all respondents the precise time the beep was sent, was opened, and when the answers were submitted were recorded, except in the UK since they did not have the premium account of m-Path. In the UK only the exact time that the subject started answering was recorded.

# 3.5. Data quality checks

Following guidelines recommended in the literature (Silvia & Cotter, 2021; Myin-Gemeys & Kuppens, 2022), the data was cleaned and checked for inconsistencies and potential quality issues. First, the data was cleaned by ensuring that all beeps were correctly linked to the daytime and weekday. Next, we looked at missing values. Unfortunately, the Spanish data needed to be disregarded because they had deviated from the overall design and had sent only two beeps per day (12 subjects removed). Subsequently, we looked at the subject non-response. Eight subjects – despite having filled out the intake survey – never responded to any beep. Others only responded

to a limited number of beeps. There is no generally accepted criterion for when to remove subjects given their low response rate, also because excluding participants leads to a biased sample (Silvia & Cotter, 2021: 108). It was decided to remove all subjects with less than 5 responses (34 subjects), since multilevel analysis requires at least five observations at the level 2 (Snijders & Bosker, 2011). A third missing value issue concerned checking the responses for face validity (at the beep level and the individual level). One particular concern was routinely reporting (almost) the same very high affective well-being, which represents a form of "straightlining"—i.e., the tendency to provide the same (unreflective) response to a series of related questions or to apply minimal thought and effort when answering survey questions. The intensity of this response strategy increases with self-administered questionnaires, the familiarity of the subjects with participating in surveys, and the speed with which the questionnaires were completed (Schonlau & Toepoel, 2015; Zhang & Conrad, 2014). There are many techniques to identify responses that deteriorate data quality (e.g. Kim et al., 2019; Reuning & Plutzer, 2020). In our case, to avoid the risk that these answers lacked validity, we removed respondents who reported an average affective well-being of 95 or higher (35 subjects).

A next step was to check the response time: the time between the beep arrived and the reaction to it and how long it took the subject to fill out the survey. Although subjects were instructed to react as soon as possible after having received the beep, this did not always happen. The response delay is for about 35% more than half an hour late. This implies that there are differences in event and observation between subjects that may disturb the relationship between participation and affective well-being. A complicating factor is that many persons filled out the evening beep the next morning. Following a strict rule of removing of all cases which are more than half an hour late would seriously diminish the number of cases. Therefore, it was decided to only remove excessive late answers (more than 10 hours, this led to a removal of 128 cases), and include a control variable for answering time in all analyses. A final concern were subjects who took an excessive amount of time to finish answering the beep (Silvia & Cotter, 2021: 104). It was decided to remove all beeps that took more than 20 minutes (11 cases).

In total, 2172 out of 9788 beeps were removed, and 152 beeps were not sent due to technical issues, leaving a total sample of 7464 beeps belonging to 277 subjects. Two additional remarks need to be made. First, the sample is not representative – neither for individual countries, nor for a larger European population. In that sense, our study is comparable to previous experience sampling studies on, for example, music or social media that also lacked representability (focusing on music listeners or pupils in selected secondary schools) and should be seen as an experimental design. Second, although our sample is compiled of eight countries, we do not pursue cross-national comparisons and will treat the data as one sample. Despite the potential interest in international comparisons, this choice is due to the small number of subjects per country, which prevents us from obtaining robust results at this scale. Table 1 provides some descriptive results per country. The findings from our data appear to be in line with external country statistics. Affective well-being is correlated with life satisfaction (Pearson = 0.25, Spearman = 0.62), as well as with life achievement (Pearson = 0.40, Spearman = 0.66), both measures being as well strongly correlated (Pearson = 0.93, Spearman = 0.95). As the literature states (Diego-Rosell et al., 2018; Huppert et al., 2009; Oman, 2021; Ruggeri et al., 2020), these levels of well-being depend on various individual and social factors that go beyond the measurements analyzed here and the purpose of this research note.

# 3.6. Analytical strategy

Since the data have a nested structure, it is necessary to employ multilevel analysis in which survey beeps are located at level 1 and persons at level 2. The dependent variable is affective well-being. The main independent variable is participation. We include several control variables to rule out alternative explanations. First, it is possible that the situation in which the survey is answered affects affective well-being. Therefore, we control for the momentary variables *Where are you now* and *With whom are you now* (modelled as dummy variables). Next, it is possible that some persons have a higher affective well-being from the outset (e.g. because of their personality, or other circumstances). To be able to attribute well-being to the stimulus condition or the control condition, we need to consider the "average" well-being of the subject. For this, we take the well-being score of the subject reported in the intake survey. This we consider the baseline well-being that needs to be controlled. Furthermore, since well-being might be different for various social

**Table 1**Overview of number of subjects, response and average affective well-being.

	# subjects	Average response (s.d.)	Average affective well-being (s.d.)	Average score of life satisfaction per country in 2018 (1 to 10) *	Average score of life achievement per country in 2018 (1 to 10)**
Croatia	35	18.0 (7.8)	69.9 (11.2)	6.3	5.54
Denmark	21	16.1 (6.3)	76.0 (12.2)	7.8	7.65
Finland	9	16.1 (5.2)	72.4 (13.2)	8.1	7.86
France	9	10.3 (6.2)	61.6 (14.5)	7.3	6.67
Netherlands	50	19.1 (7.7)	73.1 (10.4)	7.7	7.46
Serbia	25	20.1 (7.5)	68.9 (9.1)	5.6	5.94
Switzerland	45	17.6 (7.9)	70.3 (10.2)	8.0	7.51
UK	83	24.3 (5.3)	65.9 (14.3)	7.6	7.23
Total/	277	19.8 (7.6)	69.5 (12.4)	7.3	6.98
Average					

Sources: \*Eurostat (2022): Average rating for the question "On a scale of 0 (not at all satisfied) to 10 (fully satisfied), indicate how satisfied you are with the life you are currently living." \*\* Helliwell et al. (2019): Average rating for the question "Please imagine a ladder, with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?"

groups (see Grossi et al., 2012; Blessi et al., 2014; Reyes-Martinez et al., 2021), we control for sex, age, and education. <sup>[6]</sup> Finally, it is possible that affective well-being is larger for persons who respond immediately after they received the beep than for people waiting longer to answer (because we assume the time between the cultural activity/conversation and the answering of the questionnaire is shorter). To avoid that effects of participation by coincidence are caused by delayed answering time (and given the relatively large amount of delay in our data, reported earlier), we control for the response delay. <sup>[7]</sup>

# 4. Results

# 4.1. Descriptive results

Table 2 shows the mean scores for well-being for subjects who reported having recently participated in a cultural activity, respectively cultural conversation, compared to not having done so. The affective well-being of participants in an activity is higher (M=70.6, SD=17.5) than those who did not participate (M=67.3, SD=18.9) which is a significant difference (t(2273) = 4.56, p <0.001). Similarly, the well-being of participants in a conversation is higher (M=72.8, SD=17.6) than those who did not participate (M=66.2, SD=19.2) which is a significant difference (t(2647) = 9.31, p <0.001).

# 4.2. Explanatory analyses

Table 3 presents the main findings concerning the impact of participating in cultural activities on well-being. Model 1 shows that there is a strong positive significant effect of participation on well-being (b=3.16, p<.001). In other words, subjects who reported to have participated in an activity since the last beep show significantly higher levels of well-being than subjects who did not report such participation. This effect cannot be attributed to the control variables also reported in model 1, some of which also significantly predict well-being. For example, someone's baseline well-being has a positive effect, subjects who are at home, school or work tend to have lower well-being, and subjects who are with someone else tend to have higher well-being. There are not many differences between social groups: only older persons report higher well-being. Model 2 presents an analysis in which the single dummy variable participation is replaced by a series of dummy variables measuring the type of activity. We find various significant differences. Visiting a cultural venue, doing sport and other activities (which are often holiday-related) are the activities that lead to most affective well-being. Activities which seem to bring the least increase of well-being are reading the news, playing a game, creative hobbies and having dinner outside of the home.

Table 4 presents the results for participation in cultural conversations. The findings are highly comparable to those of cultural activities. There is a strong positive significant effect of participating in cultural conversations on well-being (b=4.04, p<.001). The control variables follow mostly the same patterns as for cultural activities, though differences between age groups are not significant, and high educated now report higher well-being. Model 2 replaces general participation in conversations by specific topics. Note that subjects could mention more than one topic of conversation. Three topics seem to lead to a significantly higher well-being: talking about music, books, and sport.

# 4.3. Robustness checks

We conducted several robustness checks to examine whether our results hold with different selections of the data. <sup>[8]</sup> First, we analyzed the data without the UK, since the UK did not use the premium account and was the only country to find respondents via a research agency. The effect of cultural activities on well-being is positive and significant (b=2.72, p=.001), just like the effect of cultural conversations (b=4.15, p<.001). Second, we analyzed the UK separately. Again, the results are highly similar to the main analyses for cultural activity (b=3.39, p < .01) and cultural conversations (b=4.08; p <0.001). Third, we ran models in which all respondents with a response delay of an hour or more (instead of half an hour) were left out of the analysis. Also these models confirmed the previous findings, for cultural activities (b=3.28, p>.001) and cultural conversations (b=4.13, p <0.001). Finally, we examined if response bias could be a problem: perhaps subjects who only gave a limited number of responses often respond after having participated, leading to (self-)selection bias. We conducted analyses with only subjects who responded more than 12 times. Once more, the results stand for cultural activities (b=3.52, p < .001) and cultural conversations (b=4.17, p < .001).

# 5. Conclusion

This research note studied how cultural participation impacts affective well-being in everyday life by taking a novel methodological

Table 2
Mean score affective well-being.

	Cultural activity		Cultural conversation	
	no	yes	no	Yes
Well-being N	67.3 (18.9) 1116	70.6 (17.5) 1594	66.2 (19.2) 1531	72.8 (17.6) 1190

**Table 3**Predicting affective well-being by participation in a cultural activity.

	Model 0	Model 1	Model 2
Intercept	69.14 (0.79)***	30.09 (3.61)***	30.44 (3.59)***
Participation in activity (0/1)		3.16 (0.61) ***	
Activity: Listening to music			3.20 (0.98) **
Activity: Watching a film/series/TV			2.13 (0.92) *
Activity: Watching other entertainment			3.64 (1.55) *
Activity: Reading a book			2.90 (1.17) *
Activity: Reading informative articles /news			2.01 (1.29)
Activity: Playing a game			1.98 (1.72)
Activity: Visiting a cultural venue			6.49 (1.85) ***
Activity: Doing a creative hobby			3.28 (1.83)
Activity: Doing sport			5.37 (1.59) **
Activity: Dinner in restaurant/someone else's house			2.71 (1.69)
Activity: Other			5.36 (1.60) **
Control variables:			
Affective well-being at Intake (baseline)		.42 (0.04) ***	.42 (0.04) ***
Current situation			
With whom now – alone		Ref	Ref
With whom now – with others		3.09 (0.64) ***	3.01 (0.64) ***
Where are you now – at home		Ref	Ref
Where are you now – at somebody else's home		4.83 (1.41) *	4.87 (1.41) *
Where are you now – at work		-1.79 (0.93)	-1.87 (0.94) *
Where are you now – at school		-1.20 (2.54)	-1.49 (2.54)
Where are you now – at a cultural venue, club, etc.		4.76 (2.22) *	4.11 (2.25)
Where are you now – in a public place		5.97 (1.13)***	5.54 (1.15) ***
Where are you now – I am travelling		4.21 (1.29) **	3.99 (1.30) **
Where are you now – other		5.56 (1.74) **	5.41 (1.74) **
Response delay (in hours)		.05 (0.14)	.05 (0.14)
Social background			
Age 18–25		Ref	Ref
Age 26–35		-0.66 (2.08)	-0.73 (2.07)
Age 36–45		-2.30 (2.22)	-2.40 (2.21)
Age 46–55		1.37 (2.13)	1.17 (2.12)
Age 56–65		3.77 (2.41)	3.75 (2.40)
Age 65+		6.91 (2.92) *	6.87 (2.91) *
Gender: male		Ref	Ref
Gender: female		1.74 (1.29)	1.61 (1.28)
Gender: other		-4.90 (6.52)	-4.80 (6.47)
Education: low secondary		Ref	Ref
Education: vocational training /pre-university		3.79 (2.27)	3.70 (2.24)
Education: higher education / university		3.82 (2.04)	3.63 (2.02)
Variance beep level	196.30 ***	184.05 ***	183.51 ***
Variance individual level	160.49 ***	86.03 ***	84.23 ***
Log Likelihood	-22,537.262	-11,106.296	-11,055.5

Note: Multilevel analysis with 273 individuals and 2702 beeps. Presented are B-value and standard error. Significance: \*\*\* p < .001; \*\* p < .01; \* p < .05.

approach via Experience Sampling Methodology. Individuals who took part in our study received multiple short questionnaires (beeps) which all asked for how they felt at that time, and, in addition, whether they had participated in culture in the hours before the questionnaire. This way, not only observations are collected of relatively high ecological validity, but – since the series of beeps found individuals in both moments *with* and *without* participation – also a quasi-experimental design is created which enables a better estimation of the effect of cultural participation.

The results provide clear evidence for a positive effect of cultural participation on well-being. Individuals who report having participated, give on average higher assessments on how they feel. This result was found both for participation in cultural activities and cultural conversations. Also, this positive effect is net of various control variables, such as baseline well-being, social demographics, and the situation an individual is in when answering the questionnaire.

In terms of cultural participation, engaging in sports, visiting a cultural venue, watching films/series/TV or other entertainment, reading books are associated with higher well-being compared to the baseline (no participation). Other activities such as playing games, having dinner outside, or engaging in cultural hobbies show no significant difference compared to the baseline. This implies that different types of culture – both physically active and narrative-based – can improve mood and yield positive emotions as found before (Zbranca et al., 2022), but our data do not allow us to speculate on which facets of culture are most powerful. Concerning cultural conversation, having a conversation about sports is strongly associated with increased well-being. Talking about music and books also shows higher levels of well-being, but to a lesser extent than sports. Other types of conversations do not show a significant difference in the well-being of subjects.

There are, of course, some limitations to the study. The sample is more in line with experimental research and cannot be considered

**Table 4**Predicting affective well-being by participation in a cultural conversation.

	Model 0	Model 1	Model 2
Intercept	69.14 (0.79)***	31.18 (3.81)***	32.21 (3.80)***
Participation in conversation (0/1)		4.04 (0.61) ***	
Conversation: Music			2.38 (1.08) *
Conversation: Television/film			.69 (0.98)
Conversation: Books			3.32 (1.30) *
Conversation: Games			-1.62 (1.85)
Conversation: Food			1.87 (1.14)
Conversation: Places to go out			1.05 (1.06)
Conversation: Cultural hobbies			-1.00 (1.57)
Conversation: Sport			5.41 (1.32) ***
Conversation: Celebrities/famous people			2.20 (1.81)
Conversation: Something on the internet			1.01 (1.52)
Conversation: Cultural topics in societal discussions			.01 (1.19)
Conversation: Culture as identity, norms, etc.			1.04 (1.22)
Conversation: Arts/theater/museum			1.50 (2.07)
Conversation: Other			2.83 (1.83)
Control variables:			
Affective well-being at Intake (baseline)		.43 (0.04) ***	.43 (0.04)***
Current situation			
With whom now - alone		Ref	Ref
With whom now – with others		2.43 (0.66) ***	2.65 (0.66) ***
Where are you now - at home		Ref	Ref
Where are you now – at somebody else's home		3.88 (1.42) **	3.67 (1.42) **
Where are you now – at work		-3.26 (0.97) **	-3.14 (0.97) **
Where are you now – at school		-0.75 (3.02)	.03 (3.03)
Where are you now – at a cultural venue, club, etc.		5.03 (2.22) *	5.21 (2.23) *
Where are you now – in a public place		6.53 (1.12) ***	6.45 (1.12) ***
Where are you now – I am travelling		-1.15 (1.38)	-0.66 (1.38)
Where are you now – other		3.31 (1.61) *	3.09 (1.62)
Response delay (in hours)		.00 (0.15)	.01 (0.15)
Social background			
Age 18–25		Ref	Ref
Age 26–35		-1.96 (2.23)	-2.24 (2.22)
Age 36-45		-3.10 (2.38)	-3.29 (2.38)
Age 46–55		-0.48 (2.29)	-0.60 (2.28)
Age 56-65		2.07 (2.59)	1.31 (2.59)
Age 65+		3.35 (3.11)	2.96 (3.11)
Gender: male		Ref	Ref
Gender: female		1.35 (1.38)	1.39 (1.38)
Gender: other		-4.34 (7.01)	-3.98 (7.02)
Education: low secondary		Ref	Ref
Education: vocational training /pre-university		4.46 (2.42)	4.22 (2.41)
Education: higher education / university		4.40 (2.17) *	4.18 (2.17) *
Variance beep level	196.30 ***	188.14 ***	186.13 ***
Variance individual level	160.49 ***	101.54 ***	101.13 ***
Log Likelihood	-22,537.262	-11,221.119	-11,213.053

Note: Multilevel analysis with 274 individuals and 2719 beeps. Presented are B-value and standard error. Significance: \*\*\* p < .001; \*\* p < .01; \* p < .05.

representative for a larger population. This is a more common issue in ESM studies, which often focuses on specific groups (such as patients, music listeners, high school pupils, etc.). Besides limited resources to acquire good sampling frames, we had difficulties getting positive response. It proved difficult to convince people to take part in our study, which is related to both the burden of one week of questionnaires as well as individuals being hesitant to install an app on their phone.

Given its explorative character, the research design also has some potential weaknesses. One difficulty concerns the timing of the beeps. We chose to send these during various parts of the day, yet not too early and not too late (to avoid too much intrusion in people's lives). For cultural participations in the evening this is not ideal since many subjects tended to then postpone answering the evening beep until the morning. Another limitation is the choice to not ask for alternative activities or conversations when individuals stated they did not participate in culture. This was done to lower the burden of filling out questionnaires for the subject. Still, it implies that we do not know what else went on in their lives. A related difficulty relates to the establishing the impact of participation details. Since the design revolves around comparing participation moments and non-participation moments, specific elements of the participation (e.g. type of activity or whether participation was carried out alone or with friends) can only be examined in relation to the same category of non-participation. These are points for improvement for follow-up studies.

Despite these drawbacks, ESM proved to be a promising method for analyzing the effect of cultural participation on affective aspects of well-being with robust and significant results. We provide stronger evidence for the positive effect of cultural participation on affective well-being in everyday life than previous studies based on interviews, intervention or experiments. Due to the quasi-

experimental design over several points in time, even with a relatively low number of participants, 2710 beeps were achieved and served as a valid data foundation. We also highlight the potential of the method for tracking what people talk about in daily life: this is arguably more difficult to capture with conventional methodologies such as surveys or interviews. In future studies, more resources could be invested to complement ESM with a broader entry questionnaire, leading to a clearer picture of subjects' living conditions. It would also be possible to combine ESM with micro case studies of individuals (De Nora, 2003: 109–117), such as tracking emotions among concert goers (see Wood & Moss, 2015; Mulder, 2023). In addition, a more specific focus on one region or a certain aspect of cultural activity or conversation would lead to more reliability. Nevertheless, we regard the broad perspective – both geographically and in terms of the definition of culture – in combination with our robust results as a strength of this semi-experimental study.

# CRediT authorship contribution statement

Marc Verboord: Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. Larissa Fritsch: Writing – review & editing, Writing – original draft, Investigation, Conceptualization. Neta Yodovich: Writing – review & editing, Writing – original draft, Investigation, Conceptualization. Alysa Karels: Writing – review & editing, Writing – original draft, Investigation, Conceptualization. Lucas Page Pereira: Writing – review & editing, Writing – original draft, Formal analysis, Conceptualization. Eva Myrczik: Writing – review & editing, Writing – original draft, Investigation, Conceptualization.

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