

CULTURAL PARTICIPATION IN LATER LIFE AMONG OLDER-AGED IMMIGRANTS IN THE CZECH REPUBLIC*

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Abstract

The first aim of the study is to compare the intensity of participation in cultural activities among natives, first- and second-generation immigrants in Czech Republic. The second aim is to examine whether the participation in those activities improves the emotional and psychological well-being of first-generation immigrants compared to the natives. The empirical analysis relies on data from the Survey of Health, Ageing and Retirement in Europe in 2017. We perform a system of simultaneous ordered probit models. To further improve our estimates, we apply an instrumental variables (IV) approach to reduce the endogeneity issue. The results show that natives report higher levels of psychological well-being, but there is no difference in cultural participation between the second-generation immigrants and natives. First-generation immigrants participate less frequently, except attending a sports match, where we find no difference in the frequency. However, in the majority of the cases, we conclude that immigrants participating in those activities are more likely to improve their well-being. Furthermore, there is no difference in cultural participation between immigrants and natives in areas characterized by high net migration rates. On the other hand, a lower frequency of participation is found in the areas with low net migration rates, indicating that migration and diversity in an area may encourage participation in the cultural activities explored in this study. Finally,

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the length of residence and mixed marriages are related with a higher frequency of cultural participation. The findings suggest that fostering accessibility of cultural activities and migration policies should be regarded.

Keywords: Cultural participation, EURO-D, first and second generation immigrants, integration, international migration, old age, ordered probit simultaneous equations, subjective well-being

JEL Classification: I10, I31, J15, Z10

Introduction

There are ongoing debates and arguments about the process of cultural integration of ethnic and national minorities in the western countries. This debate has been growing especially over the last 15 years in Europe, due to the EU enlargement in 2004 and 2007 and the refugee crisis in the Middle East and Africa, caused by overpopulation, natural disasters, violent conflicts and civil wars. Immigrant issues and “integration” of the first and second generation remain highly relevant for academics and policymakers alike (Diehl *et al.*, 2016).

As part of the globalisation processes, especially over the last two decades, diversity, geographical scope and overall complexity of international migration have evolved. It is thus important to examine the experiences of multicultural people among the diverse populations which characterise modern society. The main motivation lies in the assumption that subjective well-being (SWB) can be an important driver of human capital, leading to increases in productivity, growth and development. However, the majority of earlier studies have explored mainly socio-economic and institutional outcomes as measures of integration, including wages, employment, religion and language (Longhi *et al.*, 2013; De Hoon and Van Tubergen, 2014). Moreover, researchers have considered various measures to proxy the social integration of immigrants such as marriage, fertility choices, political engagement, language, self-identification, membership in social clubs, gender roles and planned permanent stay in the country (Furtado and Trejo, 2013; Adsera and Ferrer, 2014; Fokkema and De Haas, 2015). Nevertheless, our study focuses on cultural activities as proxies for immigrants’ integration, including attendance at theatrical plays, concerts, sports matches, and visiting cultural sites, historical monuments and museums.

Over the recent decades, academics and practitioners across the disciplines of well-being have shown an increasing interest in the health and well-being outcomes of old people. As the challenges coming from an ageing population in Europe, and the life expectancy being improved considerably in Europe and in developed economies, successful mitigation strategies are required to help people retain their well-being in old

age. This paper addresses the population of elderly who migrated at different points in life compared to previous studies that tend to focus mainly on young immigrants. In addition, the study attempts to investigate the relationship between cultural integration and SWB, contrary to earlier studies, where in the majority they explore labour and economic outcomes such as living standards, employment and wages. Additionally, our motivation lies in the study by Ahuvia (2002), who found that even if people in rich and developed economies report higher levels of SWB, consumption and income are not the major drivers of well-being when people from similar income groups are compared within the same country. Consequently, the results show that improvements in SWB are not only driven by income and consumption, but are also attributed to cultural activities. This is especially our case, where we explore old people who have already achieved their career potentials and most of them are retired. The same applies to first-generation immigrants, the majority of whom migrated in the early stage of their lives and got old in the host country. Therefore, exploring their participation in cultural activities and its impact on their SWB will reveal useful insights about alternative ways that improve well-being.

The first aim of this paper is to compare the participation in cultural activities among natives, first- and second-generation immigrants in the Czech Republic. The second aim is to examine the relationship between cultural integration and the subjective well-being, expressed by the EURO-D indicator of emotional and psychological well-being. Our empirical analysis relies on the 2017 Survey of Health, Ageing and Retirement in Europe (SHARE). We use two regressions: one to explore the determinants of cultural participation and the other to investigate the relationship between cultural participation and SWB. For this reason, we apply a system of ordered probit regressions, which enables simultaneous estimation of regressions. Moreover, we apply the ordered probit model as the outcomes in both regressions are ordered variables: one measuring the frequency of the participation in cultural activities and the other measuring the psychological well-being expressed by the EURO-D. Furthermore, we apply an instrumental variables (IV) approach to solve endogeneity issues coming from selection bias and reverse causality between cultural participation and SWB.

The results show that first-generation immigrants are less likely to be engaged in cultural activities compared to natives and second-generation immigrants. However, the main interesting conclusion derived is that participation in cultural activities can significantly enhance the SWB levels of first-generation immigrants. The structure of this study is as follows. Section 2 discusses a literature review on the determinants of cultural integration and its relationship with subjective well-being. Section 3 presents data and the main regression specifications applied in the empirical analysis. Section 4 reports the empirical results, and Section 5 discusses the main conclusions.

1. Literature Review

Numerous studies have investigated factors of the integration process of first-generation immigrants, including demographic and pre-migration characteristics, but these mainly include socio-economic, institutional and structural integration components such as language, employment, wages, educational attainment, religiosity, feeling of belonging and intention to stay in the host country (Gijsberts and Dagevos, 2007; Tolsma *et al.*, 2007; Longhi *et al.*, 2013; De Hoon and Van Tubergen, 2014). Even though we argue that those outcomes may well approximate and describe the process of social and economic integration of immigrants, we aim here to explore cultural participation activities, following Schwartz (1990), who argues that issues related to the integration process occur primarily due to cultural traditions. Furthermore, we aim to examine the role of cultural integration for SWB instead of labour, economic, institutional and other social outcomes. Thus, we can argue that the SWB is another proxy of integration, and investigating the role of cultural participation, we may identify it as another potential factor of immigrants' integration in the host society.

There is well-documented evidence in the earlier literature that social and cultural experiences are beneficial to well-being. One of the most related studies to ours is by Grossi *et al.* (2011), who explored the impact of culture on SWB and in particular on the Psychological General Well-Being Index (PGWBI). Their analysis is based on a sample of 1,500 participants of the Italian population and their findings suggest a positive and significant impact of cultural activities on well-being. In another study by Laukka (2007), a random sample of 500 elderly people, aged between 65 and 75 across Swedish communities, is employed and the results also reveal a positive relationship between psychological well-being and music practices, such as listening and response to music. Daykin *et al.* (2008) conducted a systematic review of studies exploring the importance of performing arts in children and young people for their well-being. The majority of the studies provide evidence of a positive impact of cultural experiences and art performance on improvements in social skills, behavioural changes, engagement among young people at risk and enhancement in well-being (Walsh-Bowers *et al.*, 1999; Nelson and Arthur, 2003; Bradley *et al.*, 2004).

Overall, there is a considerable number of studies exploring the impact of immigrant integration on well-being; however, the main focus of those studies is limited to certain social, political and institutional indicators we have mentioned earlier. Moreover, we explore the relationship between cultural integration and subjective well-being (SWB), while earlier studies mainly focus their analysis on native populations and not immigrants (Laukka, 2007; Daykin *et al.*, 2008; Grossi *et al.*, 2011). Another limitation

of the previous studies is that their majority do not consider the endogeneity issue coming from the possible degree of reverse causality between cultural integration and well-being. More specifically, while we may argue that cultural participation and, thus, integration may influence well-being, the causal effect may run as well on the inverse, where more satisfied people are more likely to participate in those activities. While we control for various factors, such as income and education, a large degree of omitted variable bias and unobserved heterogeneity still remains. This is especially our case, and the issue with earlier studies that employ cross section data. Therefore, to reduce the endogeneity issue, we apply a simultaneous equation system of ordered probit regressions with instrumental variables.

2. Methodology and Data

2.1 Theoretical framework

We define two immigrant groups in our case. The first group is first-generation immigrants, which includes people who moved into the host country we explore – the Czech Republic – either from Europe or from a non-European country. The second group is second-generation immigrants and includes those who were born in the host country and have aged there, while their parents come from another country. The main justification of using these two groups relies on the argument that second-generation immigrants may have differences in their cultural integration experience and well-being compared to the first-generation immigrants. Distinguishing these two groups into first and second generation, we also aim to understand whether there is an intergenerational difference and whether second-generation immigrant cohorts converge to natives' cultural values. Furthermore, second-generation immigrants are exposed to cultural values of the host country at a very young age through schooling, education, friends and neighbourhood and through the workplace in their adulthood, improving their employment opportunities and economic outcomes and, thus, their SWB (Hammarstedt and Palme, 2012).

However, language proficiency, the intention to stay, and length of residence are factors that may significantly increase the participation in cultural activities (Fokkema and De Haas, 2015; Bertacchini *et al.*, 2019). Due to data unavailability, we cannot investigate the role of language proficiency, but we will use the length of residence of first-generation immigrants in the host country, expressed in years, as a proxy for language proficiency. Cultural integration is a living experience and a long-term process; thus, older immigrants might be better integrated in the cultural values of the host country. Hence, the first three hypotheses tested are:

H₁: First-generation immigrants will participate in cultural activities less frequently than natives, indicating a lower degree of integration. However, the length of residence may increase the participation.

H₂: Second-generation immigrants may participate in cultural activities more frequently than first-generation immigrants, indicating a higher degree of integration.

H₃: Depending on the family ties and background, and the degree of exposure to the cultural values of the host country, second-generation immigrants may participate in cultural activities more or less frequently than natives.

The next objective is to investigate the impact of cultural participation on well-being and whether this participation improves the SWB and, thus, to investigate whether it reduces the SWB gap between natives and immigrants. We will use the EURO-D, a measure of emotional and psychological well-being. Another available and very popular measure of well-being is life satisfaction, which is a measure of cognitive well-being. The EURO-D depression scale takes a minimum score of 0 (not depressed) and a maximum of 12 (very depressed), while life satisfaction is measured on an 11-point Likert scale between 0, indicating complete dissatisfaction, and 10, denoting complete satisfaction.

In the case of the EURO-D, a negative sign of the estimated coefficients indicates a positive association (not depressed). The EURO-D includes 12 symptom domains: appetite, concentration, depression, enjoyment, fatigue, guilty, interests, irritability, pessimism, sleep, suicidality and tearfulness, and it was derived by the Geriatric Mental State examination, a popular and common tool for the mental health assessment of old people, as is the case in this study (Copeland *et al.*, 2002).

Thus, as we employ a sample of old people in this study, life satisfaction refers to the overall accomplishment across the course of life, while the EURO-D also has short-term aspects, such as depression or anxiety over a given period of time or during the time of the interview. Thus, we argue that cultural integration may have a stronger impact on the EURO-D as it covers a certain period of time and those activities mainly affect emotional and subjective well-being, instead of overall life satisfaction. Thus, life satisfaction is an assessment of a person's life or aspects of life, such as health, job and career, education and family life (Diener *et al.*, 1985). However, we should notice that even though the estimates show that cultural integration activities affect life satisfaction positively, these activities may possibly make no difference in the life satisfaction between natives and immigrants. In particular, we find statistically insignificant differences in the life satisfaction among natives, first- and second-generation immigrants, and furthermore, cultural participation activities do not enhance the well-being of one group

compared to another. Hence, for this reason as well as for space limitations, we do not present or discuss the results. Thus, we may argue that cultural integration does not play a major role in life satisfaction, as there are other potential drivers, such as income, education and family life.

Based on earlier studies, the SWB gap between first-generation immigrants and natives, where immigrants report lower levels of SWB, can be attributed to various factors, such as barriers in language skills, potential discrimination on the labour market and a lower level of social embeddedness (Kirmanoglu and Baslevent, 2014; Arpino and de Valk, 2018). Furthermore, studies have found a positive correlation between SWB and the duration of stay in the host country (Angelini *et al.*, 2010), where second-generation immigrants may report higher levels of SWB due to their exposure to the socio-economic, cultural and institutional norms and values we discussed earlier (Angelini *et al.*, 2010; Arpino and de Valk, 2018). Moreover, due to this exposure, second-generation immigrants may report higher levels of SWB (Arpino and de Valk, 2018). Hence, the fourth and fifth hypotheses we test are:

H₄: First-generation immigrants will report lower SWB levels compared to natives and second-generation immigrants.

H₅: Depending on the degree of exposure in cultural activities, institutional and socio-economic values and norms, the SWB gap between natives and second-generation immigrants will decline.

Following the discussion so far, we argue that participation in cultural activities may improve the SWB. As we mentioned earlier, first-generation immigrants face various constraints, such as lack of language skills and lower level of social embeddedness. Nevertheless, encountering arts, sports and generally cultural activities may bring people closer to those with similar values, social norms and interests and also to those who have different values and perceptions. Though it may not always be the case, such contacts and types of communication, through shared experiences, have the potential to reduce prejudice and engender tolerance and respect for differences, which may eventually affect the SWB positively. Based on that, the next hypotheses we explore are:

H₆: Participation in cultural activities improves SWB.

H₇: Due to first-generation immigrants' participation in cultural activities, their SWB gap from natives and second-generation immigrants declines.

2.2 Empirical model

The system of regressions to be estimated is the following:

$$CP_{i,r} = \beta_0 + \beta_1 M_{i,r} + \beta_2 \mathbf{Z}_{i,r} + \varepsilon_{i,r} \quad (1)$$

$$SWB_{i,r} = \beta_0 + \beta_1 CP_{i,r} + \beta_2 M_{i,r} + \beta_3 M_{i,r} \times CP_{i,r} + \beta_2 \mathbf{Z}_{i,r} + \varepsilon_{i,r} . \quad (2)$$

In Equation 1, $CP_{i,r}$ is the dependent variable indicating the integration process, for the individual i , residing in the NUTS¹ 3 Level r , measured by the frequency of participation in the cultural activities. Thus, CP stands for Cultural Participation and includes the following: visiting a museum, going to see a theatre play, attending a sports match, going to a concert of classical music, ballet or opera, going to a concert other than classical music, and visiting historical monuments. The variables are ordered taking a value between 1 (several times a month) and 5 (never). Thus, a negative sign of the estimated coefficient will imply a higher frequency of participation. M is a dummy indicating 1 for immigrant and 0 for native, and the vector \mathbf{Z} includes several individual, household and area characteristics, such as age, marital status, education, employment status, household income, and health. More specifically, we derive our variable *health conditions* from the Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL) using a factor analysis (Katz *et al.*, 1970). Moreover, we control for a high geographical disaggregation level by using NUTS 3 instead of NUTS 1 or country level, which allows us to control for unobserved characteristics at the area level in a more precise way.

In Equation 2, SWB denotes the EURO-D and we have included an interaction term between the immigrant status M and the cultural participation CP . This will allow us to explore three main questions. Firstly, whether cultural participation improves SWB , denoted by the coefficient β_1 . Secondly, whether immigrants report higher or lower levels of SWB shown by the coefficient β_2 . Thirdly, whether immigrants who are engaged in cultural activities experience significant enhancement in SWB levels leading to a reduction in the SWB gap between them and natives; this is expressed by the coefficient β_3 . Furthermore, we will perform different regressions by comparing not only natives and first-generation immigrants, but also natives and second-generation immigrants, and first-generation with second-generation immigrants. An alternative way would be to recode the EURO-D in such a way that it takes the value 1 for *very depressed* and 12 for *not depressed at all*. However, we prefer to keep the original coding as it is provided in SHARE.

We should note that language proficiency and length of residence are two major determinants of cultural participation and integration of immigrants. However, since

1 NUTS stands for Nomenclature of Territorial Units for Statistics.

we compare immigrants with natives in the system of Equations 1 and 2, we cannot explore the relationship among the language proficiency and length of residence and cultural participation. Therefore, we will perform separate regressions considering only first-generation immigrants, and including the length of residence as an additional control variable. While language proficiency is a major determinant, we do not consider it, because this information is not recorded in the SHARE. Nevertheless, we will explore the length of residence of first-generation immigrants in the host country as a proxy for language proficiency, which is measured by the years spent in the country.

Since both outcomes in Equations 1 and 2 are ordered, then ordered discrete choice models, such as logit and probit, should be employed instead of the ordinary least squares (OLS). In particular, many of the assumptions of the OLS model are violated, leading to modelling errors and incorrect data interpretation (for more details, see Greene and Hensher, 2010, pp. 108–121). Furthermore, we will apply a simultaneous ordered probit system of regressions 1–2. The system of Equations 1 and 2 is estimated using the full information maximum likelihood (FIML) method. We should notice that the marginal effects derived by the ordered logistic regression are very similar to those obtained by the ordered probit; thus, we do not report the estimates.

However, since we employ cross-sectional data, we cannot control for omitted variable bias and unobserved heterogeneity, as we would do in the case of panel data and the fixed-effects model. Moreover, the location of natives and immigrants may be non-random as they may prefer to choose their residence according to their preferences and behaviours. For instance, immigrants who are more averted from immigration may choose areas with lower density of immigrant population, while others may tend to move to and relocate in areas with high density of immigration. Furthermore, there may be a strong degree of reverse causality in Equation 2 as cultural integration may influence SWB, but also SWB may affect the decision to participate in cultural activities. For this reason, we apply the ordered probit system of equations with instrumental variables (IV), and we consider SWB and participation in cultural activities the endogenous variables (see Chesher and Smolinski, 2012 for more details on IV in ordered choice models).

We use three instruments provided by the EUROSTAT, which include availability of the number of households having access to broadband connection, attendance in cine-mas and concerts, and lagged net migration rate per 1,000 inhabitants, which is defined as the difference between the immigrants entering the area (NUTS 3 in our case) and that of emigrant people leaving the area divided by the mid-population. The first variable is mapped at the NUTS 1 level, while the last two are assigned at the NUTS 3 level, implying a higher precision of our estimates.

The first variable can be correlated with cultural integration, as apart from active participation, there are also forms of passive participation that take place via online

channels, including reading newspaper articles, playing games and listening to music. Moreover, users may seek information on cultural events or products, visit museum websites for further information and purchase cultural products (TNS Opinion & Social, 2013). For instance, a study by Neustar (2018) reveals that social media can be used to promote and advertise cultural events, such as theatrical plays and films. The justification of using the second variable as an instrument lies in the fact that attendance in cinemas and concerts, measured at the NUTS 3 level, may influence participation in cultural activities, but individual SWB cannot impact on the number of visits to cinemas and concerts (Węziak-Białowolska and Białowolski, 2016).

The third variable is the net migration rates per 1,000 inhabitants lagged by one year. The reason for using this variable is to account for the potential impact of the immigrant population density on cultural activity attendance and the degree of integration, especially for first-generation immigrants. This variable may affect cultural integration in various ways, depending on the natives' cultural beliefs and values. However, we cannot estimate the direction of the effect, as areas being dominated by natives or by one ethnic minority group may lead to a lower frequency of participation in cultural activities. On the other hand, if the area is populated by many ethnic and racial groups, then we may argue that the more the area is diversified the more cultural it may be considered. We could argue that the lagged net migration rates may have a direct effect on SWB, but conditioning on three instrumental variables in our case, the causal path from instruments to the outcomes explored is blocked and the strict exogeneity assumption may hold.

2.3 Data

The empirical analysis relies on data derived from SHARE, which is a multidisciplinary cross-national panel database of people aged 50 and over in 29 European countries. The survey is multidisciplinary in its nature and it collects data for cross-country and intertemporal comparison in key demographic, health, income, retirement and other individual and household characteristics. By the time of this study, seven waves have been conducted: in 2004–2005, 2006–2007, 2008–2009, 2010–2011, 2012–2013, 2015 and 2017 (see Börsch-Supan *et al.*, 2013 for more details). However, due to purposes of the study, we limit our analysis only to the Czech Republic and the last 7th wave of the SHARE in 2017. The main reason is that the particular types of cultural activities explored are only available for this country in the specific wave of the survey. As we have mentioned in the previous sections, earlier studies have focused on other proxies for socio-economic integration, while the main objective of this study is to explore alternative proxies for integration, such as the cultural integration activities described in the methodology section. Nevertheless, the analysis may provide valuable insights about cultural integration and its impact on well-being. As we mentioned earlier,

the measure of SWB we use is the EURO-D, which measures subjective emotional and psychological well-being, while the estimates for life satisfaction, which measures cognitive well-being, will not be reported or discussed, as there is no difference in the life satisfaction levels among the three groups. Moreover, while cultural participation is positively related to life satisfaction, any attendance in these activities does not affect the life satisfaction gap between natives and immigrants. This is confirmed by the *t*-statistics used for the average mean test, where we accept the null hypothesis in all the cases for life satisfaction, implying that the differences in average values of life satisfaction among the three groups explored are statistically insignificant. In particular, the *p*-value is 0.8641 for the first- and second-generation immigrants; 0.4053 for the natives and first-generation immigrants and 0.1703 for the natives and second-generation immigrants. On the other hand, the respective *p*-values for the EURO-D are 0.0592, 0.0205 and 0.3413, showing that the differences in the average values of the EURO-D are statistically significant between first- and second-generation immigrants and between natives and first-generation immigrants, but insignificant between natives and second-generation immigrants. Nevertheless, future studies may provide more insights into this relationship.

Table 1 reports the percentage of the main outcomes of interest/participation in cultural integration activities and SWB measures by natives, first- and second-generation immigrants. Overall, we see differences regarding participation in the cultural activities explored in this study and a large heterogeneity across the three groups: natives, first- and second-generation immigrants. It becomes obvious that first-generation immigrants participate much less frequently compared to natives and second-generation immigrants, while the participation frequency between the last two groups is very close. In particular, we observe that the second-generation immigrants visit museums more often at 6.9 percent, compared to natives and first-generation immigrants at 6.4 percent. On the other hand, the proportion of natives and second-generation immigrants participating about once a month or several times a year is very close to each other. The first-generation immigrants are more likely to report that they never visit museums at 59.3 percent followed by 47.1 percent for the second-generation immigrants and 43.4 percent for the natives, indicating that more than half of the first-generation immigrants do not participate in the particular cultural activity.

Similarly, 60 percent of the first-generation immigrants never attend theatrical plays compared to 44 percent of the natives and second-generation immigrants, while the latter groups participate much more often, and in particular, several times a month at 4–5 percent, compared to only 1.3 percent of the first-generation immigrants. Moreover, natives and second-generation immigrants attend a theatrical play once a month at around 5 percent compared to 1.8 percent of the first-generation immigrants, while they participate several times a year by 20–23 percent, compared to 18 percent of the first-generation immigrants. The main conclusions remain the same for the remaining cultural activities explored,

as first-generation immigrants participate less frequently. Almost 3 out of 4 first-generation immigrants never attend a sports match, a classical music concert, opera or any concert other than classical music. The respective percentage for the natives and second-generation immigrants ranges between 56 and 64 percent. Finally, 52 percent of the first-generation immigrants never visit historical monuments compared to 32 and 37 percent of the natives and second-generation immigrants respectively. Overall, the summary statistics in Table 1 provide preliminary evidence of the differences in cultural participation across those three groups, where natives and second-generation immigrants are more likely to participate in the cultural activities explored in this study and to do so more frequently. Furthermore, the average life satisfaction is very similar across the three groups, while the EURO-D is significantly lower in the second-generation immigrants, followed by the natives, indicating that these groups report higher levels of SWB compared to the first-generation immigrants.

We should note that we have tested the differences in average frequency among those groups using the Kruskal-Wallis test, which is mainly employed for ordered and categorical variables, and we find no significant differences between natives and second-generation immigrants. On the other hand, we find significant differences between first- and second-generation immigrants, as well as between the former group and natives. Furthermore, we do not report the summary statistics for the control variables for table space limitations, and it is outside the study's main objective, but we present their estimated coefficients and discuss the findings in the next sections.

We should note that while SHARE has been developed to focus on key health variables, its design may still have some potential for research into migration. In particular, there is a wealth of information about key demographic variables, such as the respondent's length of residence in the host country and the country of origin, as well as the spouse's and parents' country of origin. Moreover, according to Table 1, 4.48 percent of the sample are first-generation immigrants, which is very close to the 5 percent according to the EUROSTAT². Hence, we conclude that immigrants are not underrepresented given the proportion of the first-generation immigrants. However, there are characteristics in SHARE that may limit the research into migration. In particular, other important key demographic characteristics are missing from the survey. For instance, no information is recorded about racial and ethnic background, which can be related to the cultural participation. Furthermore, the analysis does not allow us to draw conclusions about other migration context given the structure of the SHARE, since it records information related only to older-aged cohorts. Thus, surveys that also record information on younger-aged cohorts and recently arrived immigrants may provide different results.

2 https://ec.europa.eu/eurostat/statistics-explained/index.php/First_and_second-generation_immigrants_-_statistics_on_households

Table 1: Descriptive Statistics for Cultural Participation

Variable	Natives	First Generation Immigrants	Second Generation Immigrants
Visiting a Museum			
Several times a month	6.43	6.40	6.86
About once a month	3.52	0.58	3.48
Several times a year	15.05	12.79	13.56
Once a year or less	31.59	20.93	28.98
Never	43.41	59.30	47.12
Attending a theatrical Play			
Several times a month	6.17	4.22	6.58
About once a month	5.24	1.81	4.53
Several times a year	23.47	18.07	20.75
Once a year or less	21.92	15.06	23.31
Never	43.20	60.84	44.83
Attending a Sports Match			
Several times a month	4.33	1.28	5.32
About once a month	3.74	3.82	2.89
Several times a year	12.88	8.28	13.09
Once a year or less	14.72	11.46	14.35
Never	64.33	75.16	64.35
Going to a concert of classical music, ballet or opera			
Several times a month	2.80	2.47	2.52
About once a month	2.84	1.85	3.25
Several times a year	11.14	9.88	10.91
Once a year or less	20.42	11.11	18.12
Never	62.80	74.69	65.20
Going to a concert of other than classical music			
Several times a month	0.90	2.45	1.63
About once a month	2.48	1.84	2.99
Several times a year	15.54	10.43	15.76
Once a year or less	24.89	9.82	20.74
Never	56.19	75.46	58.88
Visiting Historical Monuments			
Several times a month	2.37	3.03	3.43
About once a month	3.70	3.03	4.48
Several times a year	32.56	23.03	28.3
Once a year or less	28.65	18.79	26.63
Never	32.72	52.12	37.16
EURO-D	2.088	2.527	1.900
Life Satisfaction	7.525	7.638	7.612
Proportion over the sample	64.42	4.48	31.10

Source: Author's calculations

3. Empirical Results

Tables 2–3 report the estimates of the system of Equations 1 and 2. In particular, Table 2 reports additionally the estimated coefficients of the control variables, while Table 3 presents only the coefficients of main interest. More specifically, the first panel reports the dummy variable M from Equation 1, where M takes the value 1 if the respondent is a first-generation immigrant and 0 if (s)he is native. This is used to test hypothesis H_1 , and whether first-generation immigrants participate in cultural activities less frequently.

The second equation reports the estimated coefficient for the variable M , to test hypothesis H_4 about whether first-generation immigrants report lower levels of SWB compared to natives. Additionally, we include the frequency of cultural participation, which is the dependent variable in the first equation, to test hypothesis H_6 and to investigate whether participation in cultural activities improves the SWB of both natives and immigrants. The third main coefficient explored is the interaction term of the first two variables of the second equation; the dummy M and cultural participation CP . Based on the coefficient for the dummy M in the first equation, which is equal at 0.26, we conclude that first-generation immigrants participate less frequently, and more specifically, they visit museums less frequently, confirming hypothesis H_1 . To recall, CP is measured on a scale from 1 (several times a month) to 5 (never), as we have also shown in Table 1. Hence, a positive coefficient implies a lower frequency of participation in the cultural activity.

In the second equation, we find a positive and significant coefficient for the dummy variable M , at 2.72, confirming hypothesis H_4 and the summary statistics in Table 1, indicating that first-generation immigrants report lower levels of SWB. To recall, higher values of EURO-D correspond to higher levels of depression and mental distress and thus lower levels of psychological well-being. Regarding the estimated coefficient for CP , we find a significant and negative coefficient of 0.38, implying that participation in cultural activities is associated with higher levels of SWB for both natives and first-generation immigrants, and is consistent with hypothesis H_6 . The third coefficient of main interest is the interaction term of the variables M and CP , which is negative and significant. This shows that immigrants who participate and visit museums more often are more likely to improve their SWB compared to natives, confirming hypothesis H_7 .

Next, we only briefly present and discuss the estimated coefficients of the control variables, since this is outside the present study's main objective. The linear term of age is found to be positive and significant in both cultural participation and EURO-D regressions, indicating that age is negatively associated with frequency of participation and SWB. This can be related with poor health conditions, as we have shown before, where older

people face more constraints in terms of health issues that prohibit them from participating in leisure and cultural activities, also having a detrimental effect on the SWB. However, we also included the age in a quadratic term to explore whether there is a turning point. We find no such relationship, which can be explained by the old age of the respondents. In particular, SHARE collects data from people older than 50 years, and earlier studies found a turning point at the 40s and 50s, indicating that well-being is improved between 40 and 50 years of age and falls after 75. Regarding our estimates about income, employment and education level, we find a positive relationship with cultural participation, which is consistent with earlier studies, while those who are permanently sick or disabled and have poor health conditions are less likely to participate in those activities and they report lower levels of SWB, confirming the findings of earlier studies (Johansson *et al.*, 2001; Humphreys and Ruseski, 2007).

As we have mentioned, we report the estimated coefficients for the control variables only for one type of cultural participation in Table 2. The main reason is that even though the magnitude of coefficients may change, the signs remain the same in the regressions of the other cultural activities explored. Furthermore, as we have noted, the main objective of the study is not to explore the determinants of cultural participation. Nevertheless, it is remarkable to mention that, in all the cases, women participate more frequently in the cultural activities, except attendance at sports matches, where men participate more frequently, which is consistent with the previous literature and highlights the gender differences that could be explored in future studies (Christin, 2012). Furthermore, in line with previous studies we find that employed people participate more in cultural activities, but less in sports and physical leisure activities. Additional working hours may increase stress and lead to physical fatigue and less time to be allocated to sports activities (Jansen *et al.*, 2003); thus, they may prefer to devote more time to cultural activities that mainly help them to relax and restore their energy resources, maintaining their well-being (Sonnetag and Fritz, 2015).

Another control variable is marital status, where we also included mixed marriages. In particular, the reference category is married couples, both natives, who live together. The second category – mixed and interethnic marriage – includes married couples in which at least one partner is a native of the Czech Republic and the spouse is an immigrant. The other categories include registered partnership but not married, and those married who do not live together. In the last two categories, we have included only natives, since there are very few cases that fall within these categories, and more specifically, there are only 7 registered partnerships and 43 married who do not live together. In particular, there are no immigrants that fall in either of those two categories.

Table 2: Simultaneous Ordered Probit Equations for EURO-D and Frequency of Participation in Cultural Activity – Visiting a Museum by First Generation Immigrants and Natives

	First Equation DV: Visiting a Museum	Second Equation DV: EURO-D
First Generation Immigrant and Native (1 for First Generation)	0.2593** (0.1224)	2.7263*** (1.1772)
Cultural Participation (CP)		−0.3805* (0.2025)
First Generation Immigrant (M) * CP		−0.6289** (0.2689)
Male	0.3751*** (0.0570)	−0.3430** (0.1142)
Age	0.0245* (0.0133)	0.0197* (0.0104)
Age Squared	0.0002 (0.0003)	0.0013 (0.0079)
Logarithm of Household Income	−0.2158** (0.0876)	−0.0954** (0.0460)
Education Level (Reference Category – Pre Primary Education)		
Primary education or first stage of basic education	−4.040** (1.751)	−0.2211 (1.029)
Lower secondary education	−4.193** (1.751)	−0.3371 (1.025)
Upper secondary education	−4.631*** (1.753)	−0.3915 (1.028)
Post-secondary non-tertiary education	−5.020*** (1.762)	−0.3567 (1.068)
First stage of tertiary education	−5.108*** (1.761)	−0.5625 (1.047)
Second stage of tertiary education	−5.284*** (1.816)	0.6833 (1.530)
Health Conditions	0.3204*** (0.0486)	0.4039*** (0.0632)
Marital Status (Reference Category – Married and living with native spouse)		
Married and living with migrant spouse (Mixed marriage)	−0.3146** (0.1254)	−0.2718 (0.2669)
Registered Partnership (Both natives)	0.2923 (0.6184)	0.0273 (0.0829)
Married, but not living with spouse (Both natives)	−0.4162 (0.8799)	−0.3157 (0.5507)

Table 2: Continuation

Single – Never Married	–0.5178** (0.2065)	–0.5797 (0.4181)
Divorced	–0.2817** (0.1358)	0.4121** (0.1886)
Widowed	–0.4178*** (0.1345)	0.4107* (0.2437)
Employment Status (Reference Category – Retired)		
Employed or Self – Employed	–0.2060* (0.1201)	0.0133 (0.2458)
Unemployed	0.5570* (0.3095)	0.3488** (0.1405)
Permanently Sick or Disabled	0.2125* (0.1095)	0.4828** (0.2381)
Homemaker	0.0528 (0.4628)	0.4599 (0.7481)
No. Observations	2,573	
LR Chi-square	513.43 [0.000]	

Notes: Standard Errors within Brackets, P-values within square brackets, ***, ** and * indicate significance at 1%, 5% and 10% level. DV stands for Dependent Variable.

Source: Author's calculations

We observe that singles, divorced, widowed, and those married to an immigrant visit museums more often compared to married couples, registered partners and married couples living separately, both partners being natives in all these cases. Overall, married people and couples may participate less in cultural activities, compared to singles and divorced, due to additional working hours and caring responsibilities for children and possible elder family members (Humphreys and Ruseski, 2007). On the other hand, mixed and interethnic marriage is a crucial sign of behavioural and cultural assimilation (Pagnini and Morgan, 1990; Lee and Edmonston, 2005), which may likely increase the propensity for consumption of cultural goods and participation in related activities. However, the results in Table 2 do not explicitly show whether the immigrants who are married to a native are more likely to participate more in cultural activities, as the findings also show that natives who are married to an immigrant participate more as well. For this reason, in a later part we compare first immigrants who are married with a native with immigrants who are endogamous.

Table 3 repeats the same estimates considering the remaining *CP* outcomes. The findings are consistent with the conclusions derived in Table 2 and confirming hypotheses H_4 , H_6 and

H_7 . In particular, based on the estimates of the *CP* variable in the first equation, we find in all the cases a positive and significant coefficient, indicating that first-generation immigrants participate less frequently in the cultural activities explored in this study. Furthermore, according to the magnitude and size of the coefficient, immigrants are less likely to attend a theatrical play and a concert other than classical music followed by visits to historical museums and attendance at sports matches. In all the cases, first-generation immigrants report lower levels of SWB, while participation in cultural activities is associated with higher SWB levels of both natives and immigrants, except sports matches, where we found an insignificant coefficient. Therefore, the main conclusion is that participating in a sports match is not significantly related to SWB, as the other cultural activities are, and this is also reflected by the insignificant coefficient for the interaction terms between *M* and *CP*. In all the remaining cases, we find that first-generation immigrants who participate in the cultural activities explored are more likely to improve their SWB compared to natives, with the highest effect being reported in visits to museums, attendance at theatrical plays and concerts other than classical music.

Table 3: Simultaneous Ordered Probit Equations for EURO-D and Frequency of Participation in Cultural Activities by First Generation Immigrants and Natives

First Equation	DV: Attending a theatrical Play	DV: Attending a Sports Match	DV: Going to a concert of classical music, ballet or opera	DV: Going to a concert of other than classical music	DV: Visiting Historical Monuments
First Generation Immigrant and Native (1 for First Generation)	0.2989** (0.1242)	0.2774** (0.1135)	0.2449** (0.1122)	0.3005*** (0.1097)	0.2752*** (0.0968)
Second Equation	DV: EURO-D	DV: EURO-D	DV: EURO-D	DV: EURO-D	DV: EURO-D
Cultural Participation (CP)	-0.5235** (0.2567)	0.0776 (0.1888)	-0.4136** (0.1780)	-0.2548** (0.1221)	-0.5212** (0.2152)
First Generation Immigrant and Native (1 for First Generation)	2.3063** (1.0535)	2.5475** (1.2551)	2.5104** (1.0331)	2.7594*** (0.9406)	2.4733*** (0.7411)
First Generation Immigrant (M) * CP	-0.5996** (0.2349)	-0.3460 (0.4886)	-0.4860** (0.2231)	-0.5567*** (0.2047)	-0.4983** (0.2236)
No. Observations	2,563	2,429	2,461	2,445	2,506
LR Chi-square	536.27 [0.000]	539.24 [0.000]	549.78 [0.000]	437.96 [0.000]	584.30 [0.000]

Notes: Standard errors within brackets, P-values within square brackets, *** and ** indicate significance at 1% and 5% level.

Source: Author's calculations

Table 4 repeats the estimates for the system of Equations 1 and 2 and Tables 2 and 3 by gender. Thus, we perform the regressions by men and women, reported respectively in panels A and B. While the conclusions remain the same regarding hypotheses H_4 , H_6 and H_7 , we observe that, overall, male first-generation immigrants participate less frequently than both natives and their female counterparts. For instance, the estimated coefficient for the variable M for men in the first equation of Panel A for museum visits is 0.29, while for women it is 0.25. This shows that men immigrants are more likely to report that they visit museums less frequently than female first-generation immigrants. The same applies for the other cultural activities, such as attendance at concerts of classical music, concerts other than classical music and visits to historical monuments at 0.32, 0.44 and 0.36 respectively for men, and 0.19, 0.22 and 0.21 for women.

On the other hand, we find no significant difference in the cultural participation between female natives and female first-generation immigrants in attendance at theatrical plays and sports matches, indicating that females are better integrated regarding the first cultural activity, while women traditionally participate less frequently in sport matches and events compared to men. The results are consistent with the findings from earlier studies that found women are more likely to participate in “highbrow” activities, such as visits to museums and theatrical plays, than “lowbrow” activities, including sports events, which is a more common activity among men (Bihagen and Katz-Gerro, 2000; Coulangeon, 2013).

Nevertheless, the main finding is that, even though women are more likely to participate in cultural activities – shown by the estimated coefficient for M in the first equation – we observe that male immigrants who actually participate in cultural activities – based on the interaction term of M and CP – improve their SWB more than female immigrants. This is shown by the highest negative coefficients in the second equation for men, ranging from -0.61 for visits to historical monuments to -1.42 and -1.49 for attendance at music concerts and visits to museums, and it is insignificant for attendance at sports events. On the other hand, the estimated coefficients in the women’s regression range between -0.32 and -0.37 , while they become insignificant in the cases of attendance at theatrical plays and sports events, as we discussed earlier. Thus, the improvement in the SWB of male immigrants due to cultural participation is almost 2–4 times more than women’s.

The same conclusion holds as with the results in Tables 2 and 3, is also derived by Table 5 and Panel A, where the first-generation immigrants participate less frequently and report lower levels of SWB compared to second-generation immigrants, confirming hypotheses H_1 and H_4 . In particular, according to the estimated coefficient for the variable M in the first equation of Table 5 and Panel A, first-generation immigrants are more likely to report that they never attend a theatrical play at 0.36 and a concert other than classical music at 0.32, followed by 0.23–0.25 for the remaining cultural activities.

Table 4: Simultaneous Ordered Probit Equations for EURO–D and Frequency of Participation in Cultural Activities by First Generation Immigrants and Natives and Across Gender

Panel A: Men						
First Equation	DV: Visiting a Museum	DV: Attending a theatrical Play	DV: Attending a Sports Match	DV: Going to a concert of classical music, ballet or opera	DV: Going to a concert of other than classical music	DV: Visiting Historical Monuments
First Generation Immigrant and Native (1 for First Generation)	0.2898* (0.1526)	0.4777*** (0.1641)	0.3069*** (0.1119)	0.3260** (0.1582)	0.4455*** (0.1811)	0.3646*** (0.1131)
Second Equation	DV: EURO–D	DV: EURO–D	DV: EURO–D	DV: EURO–D	DV: EURO–D	DV: EURO–D
Cultural Participation (CP)	–0.5143* (0.2721)	–0.3839** (0.1923)	–0.4980*** (0.1295)	–0.4757** (0.2221)	–0.2744** (0.1253)	–0.5884** (0.2775)
First Generation Immigrant and Native (1 for First Generation)	3.6213*** (1.0482)	2.3284* (1.3212)	2.4478** (1.0759)	3.0294*** (1.0957)	3.1651*** (1.1752)	2.5718** (1.1385)
First Generation Immigrant (M) * CP	–1.4963*** (0.4568)	–0.3495 (0.5093)	–0.8025** (0.1923)	–1.4204*** (0.4338)	–1.4249*** (0.4421)	–0.6141** (0.2821)
No. Observations	1,025	1,020	977	985	980	996
LR Chi-square	392.20 [0.000]	294.71 [0.000]	299.02 [0.000]	314.87 [0.000]	309.91 [0.000]	346.91 [0.000]
Panel B: Women						
First Equation	DV: Visiting a Museum	DV: Attending a theatrical Play	DV: Attending a Sports Match	DV: Going to a concert of classical music, ballet or opera	DV: Going to a concert of other than classical music	DV: Visiting Historical Monuments
First Generation Immigrant and Native (1 for First Generation)	0.2496** (0.1168)	0.2019 (0.1266)	0.0159 (0.1541)	0.1936** (0.0817)	0.2235** (0.1011)	0.2101** (0.0993)
Second Equation	DV: EURO–D	DV: EURO–D	DV: EURO–D	DV: EURO–D	DV: EURO–D	DV: EURO–D
Cultural Participation (CP)	–0.5327** (0.2584)	0.1461 (0.3305)	–0.2416 (0.2615)	–0.3030* (0.1597)	–0.2360** (0.0963)	–0.4130** (0.1952)
First Generation Immigrant and Native (1 for First Generation)	1.2485* (0.6407)	1.1956** (0.5190)	2.5341** (1.0913)	2.0388** (0.9201)	2.4515** (1.0363)	2.4744** (1.1368)
First Generation Immigrant (M) * CP	–0.3791** (0.1676)	–0.2066 (0.2292)	–0.3931 (0.4871)	–0.3212** (0.1492)	–0.3728** (0.1677)	–0.3554** (0.1665)
No. Observations	1,548	1,543	1,452	1,476	1,465	1,510
LR Chi-square	428.36 [0.000]	453.92 [0.000]	308.65 [0.000]	480.94 [0.000]	389.51 [0.000]	490.76 [0.000]

Notes: Standard errors within brackets, P-values within square brackets, ***, ** and * indicate significance at 1%, 5% and 10% level.

Source: Author's calculations

The findings confirm hypotheses H_1 – H_2 , showing that second-generation immigrants are more likely to integrate, as they are exposed to the socio-economic, cultural and institutional norms and values of the host country since their birth and at a very young age through schooling, and through their childhood and friends and through the workplace in their adulthood (Hammarstedt and Palme, 2012). Furthermore, the findings confirm hypothesis H_4 , where second-generation immigrants report higher levels of SWB, which is supported by earlier studies, as this generation of immigrants may report higher levels of SWB due to their exposure to the socio-economic and cultural norms and values of the host country (Angelini *et al.*, 2010; Arpino and de Valk, 2018).

Regarding the results in the second equation of Panel A of Table 5, we find that even though first-generation immigrants report lower levels of SWB, those who actually participate in the cultural activities explored are more likely to improve their SWB compared to second-generation immigrants, confirming hypothesis H_7 , where the SWB gap between first- and second-generation immigrants is reduced, as we have shown in Tables 2 and 3. Furthermore, we find that cultural participation improves the SWB of both first- and second-generation immigrants, confirming hypothesis H_6 . However, we find no difference in the frequency of attendance at sports matches between natives and first-generation immigrants, as and the impact of attendance at sports matches on the SWB is insignificant. This may imply that cultural integration in sports events is a much faster and easier process, since it does not require language proficiency or an extended stay in the host country, as attendance at theatrical plays requires.

In Panel B of Table 5, we report the estimates for the system of Equations 1 and 2 for natives and second-generation immigrants. In this case, the dummy variable M takes the value 1 for second-generation immigrants and 0 for natives. Contrary to the findings in Panel A, we find no differences between the frequency of participation in cultural activities and the levels of SWB between natives and second-generation immigrants in Panel B. In particular, according to the first equation, the coefficients of the dummy variable M are insignificant, indicating no differences in the frequency of cultural participation between natives and second-generation immigrants, confirming hypothesis H_3 . Furthermore, we find an insignificant coefficient for the interaction term of M and CP , showing that the SWB gap between natives and second-generation immigrants due to cultural participation is insignificant. Therefore, second-generation immigrants are integrated in the cultural values of the host country, confirming hypothesis H_5 too. Finally, in the second equation of Panel B, we find that cultural participation improves the SWB of both natives and second-generation immigrants, which confirms hypothesis H_6 .

Table 5: Simultaneous Ordered Probit Equations for EURO-D and Frequency of Participation in Cultural Activities by Natives and First and Second Generation Immigrants

Panel A: First and Second Generation Immigrant						
First Equation	DV: Visiting a Museum	DV: Attending a theatrical Play	DV: Attending a Sports Match	DV: Going to a concert of classical music, ballet or opera	DV: Going to a concert of other than classical music	DV: Visiting Historical Monuments
First and Second Generation Immigrant (1 for First Generation)	0.2552** (0.1019)	0.3548*** (0.1039)	0.2317* (0.1192)	0.2617** (0.1188)	0.3258*** (0.1164)	0.2465** (0.1010)
Second Equation	DV: EURO-D	DV: EURO-D	DV: EURO-D	DV: EURO-D	DV: EURO-D	DV: EURO-D
First and Second Generation Immigrant (1 for First Generation)	1.957* (1.049)	2.0765** (0.9592)	2.215* (1.231)	2.041* (1.055)	2.130** (1.003)	2.159** (0.8943)
CP	-0.5350** (0.2252)	-0.4183* (0.2188)	0.0714 (0.3781)	-0.4264** (0.2057)	-0.2406* (0.1265)	-0.5126** (0.2431)
First and Second Generation Immigrant (M)*CP	-0.4372* (0.2343)	0.4491** (0.2134)	-0.3820 (0.4956)	-0.4455** (0.2195)	-0.4624** (0.2196)	-0.3941* (0.2063)
No. Observations	1,301	1,287	1,216	1,224	1,219	1,253
LR Chi-square	269.37 [0.000]	340.01 [0.000]	271.09 [0.000]	309.05 [0.000]	297.31 [0.000]	367.47 [0.000]
Panel B: Second Generation Immigrant and Native						
First Equation	DV: Visiting a Museum	DV: Attending a theatrical Play	DV: Attending a Sports Match	DV: Going to a concert of classical music, ballet or opera	DV: Going to a concert of other than classical music	DV: Visiting Historical Monuments
Second Generation Immigrant and Native (1 for Second Generation Immigrant)	0.0253 (0.0302)	0.0194 (0.0303)	-0.0184 (0.0457)	0.0107 (0.0455)	-0.0258 (0.0439)	0.0320 (0.0402)
Second Equation	DV: EURO-D	DV: EURO-D	DV: EURO-D	DV: EURO-D	DV: EURO-D	DV: EURO-D
Second Generation Immigrant and Native (1 for Second Generation Immigrant)	0.3433 (0.3030)	0.0408 (0.2652)	-0.2976 (0.2902)	0.3840 (0.4052)	0.3851 (0.3898)	-0.1406 (0.3172)
CP	-0.3670*** (0.1122)	-0.3761** (0.1705)	-0.1525* (0.0826)	-0.2447** (0.1194)	-0.2315** (0.1066)	-0.2185* (0.1148)
Second Generation Immigrant and Native (M) *CP	-0.0792 (0.0709)	-0.0069 (0.0651)	0.0679 (0.0562)	-0.0852 (0.0897)	-0.0940 (0.0874)	0.0365 (0.0776)
No. Observations	3,756	3,737	3,539	3,550	3,550	3,646
LR Chi-square	532.72 [0.000]	709.50 [0.000]	673.63 [0.000]	738.86 [0.000]	592.70 [0.000]	797.48 [0.000]

Notes: Standard errors within brackets, P-values within square brackets, ***, ** and * indicate significance at 1%, 5% and 10% level. CP stands for Cultural Participation and measures frequency.

Source: Author's calculations

Table 6 reports the system of ordered probit regressions using instrumental variables. The results in Panels A and B confirm hypotheses H_1 – H_3 , where first-generation immigrants participate less frequently in the cultural activities explored compared to natives and second-generation immigrants. On the other hand, according to the first equation in Panel C of Table 6, there is no difference in the frequency of cultural participation between natives and second-generation immigrants. The results for the second equation in panels and B of Table 6 confirm hypothesis H_4 , where first-generation immigrants report lower levels of SWB than natives and second-generation immigrants, but their SWB is improved with the participation in cultural activities, confirming hypothesis H_5 . Overall, we find that cultural participation is associated with improvement in SWB for both natives and immigrants.

Overall, the estimates are lower compared to those derived by the ordered probit regressions in Tables 2–5, indicating that the estimates may exhibit some degree of upward bias. One explanation could be that immigrants may tend to move either into areas where immigrants and their families are located or into areas characterized by strong economic performance and income, which could increase the probability of participating in sports and cultural activities (Humphreys and Ruseski, 2007; García *et al.*, 2011). This is likely to bias the true effect of cultural participation on well-being as both SWB and participation in cultural activities may be correlated with unobserved demographic, economic, cultural and other characteristics in the area. However, in all the cases in Table 6, we obtain the same sign on the estimated coefficients to those presented in Tables 2–5, implying that the bias is due to magnitude and not due to direction.

Furthermore, we test the validity of our instruments. In particular, we test whether these are good predictors of the endogenous variable cultural participation in Equation 2. Secondly, we test whether the instruments are exogenous and uncorrelated with the outcomes explored. In all the cases, except Panel A in Table 6, when the outcome is “Going to a concert of other than classical music” and in Panel C, when the outcome is “Visiting historical monuments”, we reject the null hypothesis that the instruments are weak, and thus, we conclude that these are good predictors of participation in cultural activities. More specifically, as a rule of thumb, the F-statistic test reported in Table 6 should be higher than 10 and it is derived from the first-stage regression, where we regress each outcome of endogenous cultural activity explored, using the instruments discussed in the methodology section. Moreover, we report the Hausman endogeneity test (Knapp and Seakes, 1998) and we accept the joint null hypothesis in all the cases, implying that the instruments used are exogenous and uncorrelated with the error term and have an indirect effect on the outcomes explored through participation in cultural activities and, thus, are correctly excluded from the estimated regressions.

Table 6: Instrumental Variables–Simultaneous Ordered Probit Equations for EURO-D and Frequency of Participation in Cultural Activities by First and Second Generation Immigrants and Natives

Panel A: First Generation Immigrant and Native						
First Equation	DV: Visiting a Museum	DV: Attending a theatrical Play	DV: Attending a Sports Match	DV: Going to a concert of classical music, ballet or opera	DV: Going to a concert of other than classical music	DV: Visiting Historical Monuments
First Generation Immigrant and Native (1 for First Generation Immigrant)	0.2728*** (0.0977)	0.3174*** (0.1005)	0.2464** (0.1146)	0.2396** (0.1127)	0.2916*** (0.1102)	0.2588*** (0.0974)
Second Equation	DV: EURO-D	DV: EURO-D	DV: EURO-D	DV: EURO-D	DV: EURO-D	DV: EURO-D
First Generation Immigrant and Native (1 for First Generation)	2.8583*** (0.9519)	2.2912** (1.0159)	2.4503** (1.1519)	2.4953** (1.034)	2.8246*** (0.9478)	2.4988*** (0.8543)
CP	−0.3350*** (0.1240)	−0.4825** (0.2018)	0.0570 (0.1362)	0.4242** (0.1945)	−0.2494** (0.1196)	−0.4391*** (0.1625)
First Generation Immigrant and Native (M)*CP	−0.5605*** (0.2194)	0.4916** (0.2280)	−0.5039 (0.4429)	−0.4831** (0.2233)	−0.5597*** (0.2070)	−0.4049** (0.1778)
No. Observations	2,573	2,563	2,429	2,461	2,445	2,506
LR Chi-square	377.08 [0.000]	514.89 [0.000]	508.03 [0.000]	537.09 [0.000]	425.45 [0.000]	583.13 [0.000]
Weak Instrument F-statistic Test	12.06 [0.0026]	12.58 [0.0019]	12.01 [0.0023]	13.16 [0.0012]	7.52 [0.0279]	12.32 [0.0021]
Hausman Endogeneity Test	0.4632 [0.173]	0.0919 [0.879]	0.1928 [0.413]	0.0112 [0.950]	0.0130 [0.992]	0.4416 [0.181]
Panel B: First and Second Generation Immigrant						
First Equation	DV: Visiting a Museum	DV: Attending a theatrical Play	DV: Attending a Sports Match	DV: Going to a concert of classical music, ballet or opera	DV: Going to a concert of other than classical music	DV: Visiting Historical Monuments
First and Second Generation Immigrant (1 for First Generation Immigrant)	0.2480** (0.1024)	0.3547*** (0.1046)	0.2134* (0.1199)	0.2524** (0.1195)	0.3149*** (0.1185)	0.2313** (0.1017)
Second Equation	DV: EURO-D	DV: EURO-D	DV: EURO-D	DV: EURO-D	DV: EURO-D	DV: EURO-D
First and Second Generation Immigrant (1 for First Generation Immigrant)	1.8124* (1.099)	1.9280** (0.8981)	2.2273* (1.2340)	2.0476* (1.1152)	2.1095** (1.0037)	2.3442** (0.9890)
CP	−0.5174** (0.2285)	−0.4003** (0.1922)	0.0578 (0.2108)	−0.3996** (0.1710)	0.2171* (0.1101)	0.4940** (0.2329)
First and Second Generation Immigrant (M)*CP	−0.3979* (0.2172)	−0.4382** (0.2088)	−0.5843 (0.4781)	−0.4380* (0.2271)	−0.3880** (0.1881)	−0.3537* (0.1856)
No. Observations	1,301	1,287	1,216	1,224	1,219	1,253
LR Chi-square	197.28 [0.000]	261.13 [0.000]	206.90 [0.000]	234.70 [0.000]	218.48 [0.000]	298.03 [0.000]
Weak Instrument F-statistic test	11.95 [0.0052]	11.51 [0.0068]	11.75 [0.0058]	16.28 [0.0003]	10.48 [0.0073]	14.39 [0.0009]
Hausman Endogeneity Test	0.1019 [0.770]	0.1278 [0.664]	0.0926 [0.871]	0.1268 [0.676]	0.0130 [0.992]	0.1679 [0.578]

Source: Author's calculations

Table 6: (Continuation)**Panel C: Second Generation Immigrant and Native**

First Equation	DV: Visiting a Museum	DV: Attending a theatrical Play	DV: Attending a Sports Match	DV: Going to a concert of classical music, ballet or opera	DV: Going to a concert of other than classical music	DV: Visiting Historical Monuments
Second Generation Immigrant and Native (1 for Second Generation Immigrant)	0.0224 (0.0406)	0.0119 (0.0408)	−0.0199 (0.0633)	0.0112 (0.0460)	−0.0275 (0.0443)	0.0260 (0.0408)
Second Equation	DV: EURO-D	DV: EURO-D	DV: EURO-D	DV: EURO-D	DV: EURO-D	DV: EURO-D
Second Generation Immigrant and Native (1 for Second Generation Immigrant)	0.2837 (0.3154)	0.1523 (0.2580)	−0.3107 (0.3100)	0.1651 (0.1536)	0.4258 (0.3767)	−0.1617 (0.1787)
CP	−0.3379*** (0.1164)	−0.3126** (0.1578)	−0.1490* (0.0794)	0.2264** (0.1054)	−0.2267* (0.1182)	−0.2240* (0.1162)
Second Generation Immigrant and Native (M)*CP	−0.0656 (0.0737)	−0.0084 (0.0634)	0.0688 (0.0694)	−0.0814 (0.0898)	−0.1027 (0.0848)	0.0325 (0.0785)
No. Observations	3,756	3,737	3,539	3,550	3,550	3,646
LR Chi-square	527.11 [0.000]	700.30 [0.000]	663.81 [0.000]	579.07 [0.000]	579.07 [0.000]	792.26 [0.000]
Weak Instrument F-statistic test	12.24 [0.0020]	12.52 [0.0019]	12.06 [0.0021]	11.74 [0.0033]	11.30 [0.0034]	9.69 [0.0093]
Hausman Endogeneity Test	0.4107 [0.198]	0.4202 [0.212]	0.1861 [0.408]	0.0115 [0.945]	0.2265 [0.287]	0.0842 [0.798]

Notes: Standard errors within brackets, P-values within square brackets, ***, ** and * indicate significance at 1%, 5% and 10% level. CP stands for Cultural Participation and measures frequency.

Source: Author's calculations

The next set of estimates is made by areas with high and low immigrant population density. In particular, as a threshold, we define areas with net migration rates higher than the average value at the country level as high immigrant population density and those with values less than the average are defined as areas with low immigrant population density. The results are interesting, showing that in the areas with high net migration rates there is no difference in the cultural participation frequency between natives and first-generation immigrants, while in areas defined as low immigrant-populated the difference in participation frequency becomes significant, except the cultural activity “Going to a concert of classical music, ballet or opera”. However, one of the main limitations, which is discussed in the next section, is that we do not have information about the share of the net migration rates by ethnic and racial background. In particular, the participation may differ if one minority group is dominant in an area compared with areas where there

is a diversity of immigrants. It would be interesting to investigate this further in countries where more detailed information is available.

Table 7: Ordered Probit Equations for Frequency of Participation in Cultural Activities by Areas of High and Low Migrant Population Density

Panel A: High Migrant Population Density	DV: Visiting a Museum	DV: Attending a theatrical Play	DV: Attending a Sports Match	DV: Going to a concert of classical music, ballet or opera	DV: Going to a concert of other than classical music	DV: Visiting Historical Monuments
First Generation Immigrant and Native (1 for First Generation Immigrant)	0.3595 (0.3319)	0.4837 (0.3053)	0.2424 (0.4010)	0.5086 (0.4026)	0.2196 (0.4374)	−0.0492 (0.3028)
No. Observations	970	968	922	935	927	949
LR Chi-square	124.32 [0.000]	141.74 [0.000]	419.31 [0.000]	131.29 [0.000]	104.39 [0.000]	534.62 [0.000]
Panel B: Low Migrant Population Density	DV: Visiting a Museum	DV: Attending a theatrical Play	DV: Attending a Sports Match	DV: Going to a concert of classical music, ballet or opera	DV: Going to a concert of other than classical music	DV: Visiting Historical Monuments
First Generation Immigrant and Native (1 for First Generation Immigrant)	0.4776*** (0.1864)	0.5180*** (0.1948)	0.5011* (0.2694)	0.4114 (0.2580)	0.6504*** (0.2504)	0.6214*** (0.2120)
No. Observations	1,603	1,595	1,507	1,526	1,518	1,557
LR Chi-square	579.35 [0.000]	576.81 [0.000]	1,164.41 [0.000]	528.83 [0.000]	507.09 [0.000]	594.90 [0.000]

Notes: Robust standard errors within brackets, P-values within square brackets, *** and * indicate significance at 1% and 10% level. CP stands for Cultural Participation and measures frequency.

Source: Author's calculations

The last part of the analysis involves the role of the length of stay/residence of the first-generation immigrants in the Czech Republic. As we mentioned earlier, the study by Bertacchini *et al.* (2019) found that language proficiency and duration of stay of the first-generation immigrants in Italy are two main drivers of participation in cultural and leisure activities. However, one of the main limitations of our study, even though the main objective was to compare the frequency of cultural participation between natives and immigrants, is the lack of information about the language proficiency in SHARE.

The only way to address this issue is to explore the relationship between length of residence and cultural participation, as well as the SWB of first-generation immigrants. Table 8 reports the estimates, while we should note that we do not present the estimated coefficients of the other control variables, as the conclusions are very close to those derived in Table 2. In particular, women are more likely to participate in “highbrow” cultural activities, such as attendance at theatrical plays, concerts of classical music and visits to museums, while men are more likely to attend sports events. Furthermore, the human and economic capital, expressed by the income and education level, show that more educated and wealthier people are more likely to participate in the cultural activities and to report higher levels of SWB.

Table 8 reports the estimates of the system of Equations 1 and 2, considering only the first-generation immigrants. The main underlying reason for limiting the analysis only to the first-generation immigrants is that we aim to further investigate the role of the length of residence in the host country. In particular, the length of residence for natives and second-generation immigrants is actually their age, since they were born in the Czech Republic; thus, in this case, the length of residence will be correlated to age, and we will be unable to see its effect. In the first equation of Panel 8, we observe that the length of residence, which is measured by the number of years spent living in the Czech Republic, is related with a higher frequency of cultural participation. To recall, the dependent variable of frequency participation in cultural activities is measured on a scale from 1 (several times a month) to 5 (never); thus, a negative sign implies a higher frequency of cultural participation. Thus, with each additional year spent in the host country, first-generation immigrants are more likely to increase the frequency of attendance at theatrical plays and concerts of classical music, where the highest size of estimated coefficients is noted, followed by attendance at concerts other than classical music and visits to museums.

The results are consistent with the earlier literature, where the length of stay is also related to language proficiency, which is required for cultural participation, and especially the case of visiting a theatre. Thus, apart from the fact that language proficiency of the host country – the Czech Republic – is a prerequisite to attend a theatrical play, the years of residence are also associated with higher levels of economic and socio-cultural participation, which is reflected in the improved labour market outcomes and conditions, and participation in cultural activities (Bertacchini *et al.*, 2019). On the other hand, we find no significant relationship between the length of residence and attendance at sports events. This may imply that length of residence and language proficiency are not required for attendance at sport matches and events, as sports can be more universal and much easier and faster for the first-generation immigrants to integrate into. In the second equation, we find that length of residence is also related with higher levels of SWB, expressed

by the negative sign of the estimated coefficient in the EURO-D regression. Furthermore, cultural participation is associated with higher levels of SWB, with the highest effect noted in attendance at theatrical plays and musical concerts other than classical music, followed by visits to museums and attendance at classical music concerts.

Table 8: Ordered Probit Equations for Frequency of Participation in Cultural Activities, Length of Stay – Residence in the Host Country and Mixed Marriages of First Generation Immigrants

FIRST EQUATION	DV: Visiting a Museum	DV: Attending a theatrical Play	DV: Attending a Sports Match	DV: Going to a concert of classical music, ballet or opera	DV: Going to a concert of other than classical music	DV: Visiting Historical Monuments
Length of Stay – Residence	–0.0171** (0.0080)	–0.0252** (0.0122)	–0.0080 (0.0102)	–0.0236** (0.0110)	–0.0177* (0.0101)	–0.0210* (0.0108)
Married with native (Reference Category – Married with Migrant)	–0.1967** (0.0971)	–0.3582** (0.1692)	–0.3985 (0.3103)	–0.4122** (0.2008)	–0.3493* (0.1883)	–0.2178* (0.1209)
SECOND EQUATION	DV: EURO-D	DV: EURO-D	DV: EURO-D	DV: EURO-D	DV: EURO-D	DV: EURO-D
CP	–1.1601*** (0.3974)	–1.7741** (0.7193)	–0.3969** (0.1703)	–1.1065*** (0.3213)	–1.7331*** (0.3793)	–0.3240* (0.1762)
Length of Stay – Residence	–0.1463** (0.0629)	–0.1469** (0.0678)	–0.1452** (0.0656)	–0.1459** (0.0658)	–0.1445** (0.0642)	–0.1425** (0.0685)
Married with native (Reference Category – Married with Migrant)	–1.2021 (0.9080)	–1.2494 (0.9389)	–1.2968 (0.9131)	–1.3212 (0.9551)	–1.2750 (0.9225)	–1.3332 (0.9808)
No. Observations	203	197	191	194	195	198
LR Chi-square	216.70 [0.000]	218.74 [0.000]	198.51 [0.000]	196.52 [0.000]	210.94 [0.000]	217.61 [0.000]

Notes: Standard errors within brackets, P–values within square brackets, ***, ** and * indicate significance at 1%, 5% and 10% level. CP stands for Cultural Participation and measures frequency.

Source: Author’s calculations

Table 8 also reports the estimated coefficient for the mixed and interethnic marriages, and in particular, for the first-generation immigrants who are married to a native of the Czech Republic, and the reference category is married couples who are both immigrants. The aim of considering this category is that in Table 2 we cannot conclude

whether immigrants participate more because they are married to a native or whether natives participate more in cultural activities because they are married to an immigrant. Thus, by limiting the sample to the first-generation immigrants, we can investigate whether immigrants whose partner is a native are also more likely to participate in the cultural activities we explore. Furthermore, interethnic marriages can be used as a proxy for language proficiency as well, since immigrants most probably have to learn and improve their language skills for communication purposes.

We should note that we do not report the other marital status categories as well as the coefficients of the remaining control variables. The underlying reason is that we aim to investigate the role of mixed marriages in integration and cultural participation, and also in the SWB. Furthermore, we derive similar conclusions to those found in Table 2, where more educated and wealthier people, and also single and divorced, are more likely to participate more frequently in the cultural activities we explore. Overall, we observe that mixed marriages promote and increase participation in cultural activities compared to immigrants who are married to immigrants, and thus, mixed marriages encourage the integration of first-generation immigrants into the cultural values and norms of the host country. The only exception is attendance at sports events, where in the first equation we find that mixed married couples exhibit no significant differences in the frequency of participation compared to endogamous couples. Furthermore, according to the second equation, we find no difference in the SWB levels between endogamous and mixed married couples.

Conclusions

In this study, we have explored the determinants of participation in cultural activities and compared the frequency of participation among natives, first- and second-generation immigrants. Furthermore, we have examined the impact of cultural participation on the SWB. The main findings suggest that first-generation immigrants participate less frequently, implying a lower degree of integration, while we found no difference between natives and second-generation immigrants. The same conclusions are also derived when we explore the SWB, where first-generation immigrants report lower levels of SWB, measured by the psychological and emotional well-being indicator EURO-D, than natives and second-generation immigrants. However, as we have shown, the SWB gap declines when first-generation immigrants participate more frequently in a range of cultural activities. Another interesting finding is that first-generation immigrants who reside in high immigrant density areas, proxied by the net migration rates, report no differences in cultural participation. Finally, the findings suggest that length

of residence and interethnic/mixed marriages are significant drivers of cultural participation for the first-generation immigrants.

Nevertheless, even though other domains of integration, such as labour and economic outcomes, can be major contributors to well-being, our aim in this paper was to explore the role of cultural integration in the SWB of first-generation immigrants. Moreover, while we found a positive relationship between cultural participation and life satisfaction, participation does not improve life satisfaction of first-generation immigrants compared to natives and second-generation immigrants. This indicates that this type of participation probably affects the psychological and emotional well-being, expressed by the EURO-D, and not the overall cognitive well-being, proxied by life satisfaction.

Overall, policies encouraging participation in cultural events may help immigrants to integrate in the social norms of the host societies, and to improve their SWB. Beyond the potential economic costs and benefits of immigration, integration of immigrants into the social values and life of the host countries constitutes an important challenge for social cohesion and for the well-being of both natives and immigrants. Even though we have not explored the integration in terms of labour and economic outcomes, we argue that policies and practices that ensure successful cultural integration of immigrants may lead to prolongation of immigrants' stay in the host country, especially of high skilled immigrants, which could be beneficial to the host countries. The effort of immigrants towards cultural integration and their foreseen length of stay can be strongly related. In addition, the constraints and opportunities set by the migration policies of host countries greatly influence immigrants' aspirations and decisions regarding integration.

However, the study is not without drawbacks. Firstly, the empirical analysis is based on cross-sectional data and not panel data. Panel data allow us to follow the same individual across a period of time, and this is strongly related to our objective, since integration may take years to evolve. Furthermore, panel datasets are very useful to explore the role of additional factors in a dynamic fashion, such as marital and employment status, education and other factors that change over time and may affect both cultural participation and SWB.

Secondly, due to data availability, we have limited our analysis to a single country, while panel data that involve individuals both across a sample of countries and over time would provide very valuable insights about the immigrant integration process. Along with this, we can explore differences not only between individuals within the same country, but also between countries, as for example, potential differences between Northern and Southern or Eastern Europe. Nevertheless, surveys across Europe that incorporate more detailed information about cultural activities should be developed.

The third limitation of this study is the lack of information about the ethnic and racial background of the respondents, including both natives and immigrants. It would be

valuable to explore whether this background plays a role in both integration and SWB and to advise relevant policies. Furthermore, potential discrimination could be reduced with the years living in the host country, in case the old immigrants have acquired the language of the host country efficiently and have established social networks with the natives, citizenship and voting rights. This will have a further impact on the SWB. In particular, our results show that the length of residence in the host country is not only associated with a higher frequency of participation in cultural activities, but also with high levels of SWB.

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