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RESEARCH ARTICLE

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Influence of time of residence on the sense of community and satisfaction with life in immigrants in Spain: The moderating effects of sociodemographic characteristics

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Abstract

Migration is an example of adaptation with enduring effects over time and in different cultures. Few studies have analyzed the effect of the sense of community (SOC) on satisfaction with life (SWL) over time while taking into account the moderating effects of sociodemographic characteristics. We propose a model that explains the influence of time of residence on the SOC and SWL. It was hypothesized that the SOC has a positive influence on SWL and that SWL is moderated by sociodemographic characteristics and cultural differences. Participants were 2,211 immigrants residing in Malaga (Spain). Results show a positive association between years of residence and the SOC and the SWL. A positive association was found between the SOC and SWL. This study shows the relevance of analyzing the moderating effects of sociodemographic characteristics in different immigrant groups rather than according to the migration process as a whole to develop specific intervention strategies.

KEYWORDS

immigration, satisfaction with life, sense of community, sociodemographic characteristics, time of residence

1 | INTRODUCTION

Throughout the ages, human beings have been in permanent dialogue with the construct of time through the interpretation of lived experiences and the assessment of future risks and adaptations (Maya-Jariego & Armitage, 2007). The phenomenon of migration is an exemplar of the process of adaptation to the environment. This process of adjustment is very complex and stressful because of the multitude of changes and varieties of loss. These effects can simultaneously occur and include positive and negative consequences that have the potential to persist over time (Casado, Hong, & Harrington, 2010; Stein, Taylor, Kulish, & Gonzalez, 2017). Migration can be understood as a temporary process of building a sense of community (SOC) based on daily practices and interactions with the host society (Rochira, 2018; Sonn, 2002). The relationship between the time construct and the migratory process has been studied from different perspectives, but what they all share is the search for ways to improve immigrant integration. The positive effect of time of residence in immigrants in a given setting has been referred to in terms of acculturation (Tran, Manalo, & Nguyen, 2007) psychological adaptation and well-being (Aroian, Norris, & Chiang, 2003), identification with the host society (Cheung, Chudek, & Heine, 2011), and social support (Keene, Bader, & Ailshire, 2013). The concept of multiple senses of the community has been used to study the effect of the amount of time immigrants spend in the different communities they simultaneously belong to and its repercussion on their integration process (Li, Hodgetts, & Sonn, 2014). The majority of research on the general population has found a positive association between the time of residence in a community and attachment (Baker & Palmer, 2006) and some dimensions of psychological and social well-being (Cueto, Espinosa, Guillén, & Seminario, 2016).

1.1 | SOC and time of residence

There has been wide support in the literature for the concept of SOC as one of the most significant measures of efficient societies (Halamová, Kanovsky & Naništová, 2018; Yetim & Yetim, 2014). Sarason (1974) defined the SOC as "The perception of similarity to others, an acknowledged interdependence with others, a willingness to maintain this interdependence by giving to or doing for others what one expects from them [and] the feeling that one is part of a larger dependable and stable structure" (p. 157).

Subsequently, McMillan and Chavis (1986) developed the most widely accepted model of the SOC model to date (Nowell & Boyd, 2014). They proposed a multidimensional structure with four dimensions: needs fulfillment, group membership, influence, and emotional connection.

A positive association has also been found in the general population between the SOC and years of residence and age (Prezza, Zampatti, Pacilli, & Paoliello, 2008). However, in the field of migration, few studies have investigated the relationship between the time construct and the SOC. Some studies on immigration have found a positive association between age-typical development and increased time of residence (Michel, Titzmann, & Silbereisen, 2012). A negative association has been found between the age of immigrants upon arrival in the host country and the level of identification with the host culture; that is, identification with the host society decreases as age increases (Cheung et al., 2011). Age at the time of migration is a relevant predictor of changes in the level of social integration over time. A possible explanation may reside in the ease of language acquisition in young people (Martinovic, Van Tubergen, & Maas, 2009).

Understanding the processes by which immigrants adapt to new settings is of vital importance to provide them with support (Casado et al., 2010). Nevertheless, the number of studies that have provided a deeper analysis of these processes remain scarce (Bhatia, 2008). Several studies have suggested that the social integration of immigrants is not a linear process over time because multiple elements affect its development (Waters, 2011). At the quantitative level, the U-curve hypothesis with a honeymoon phase marked by high levels of adaptation around the time of migration, followed by a crisis and subsequent recovery has received little scientific acceptance as a descriptor of immigrant adaptation (Michel et al., 2012).

1.2 | Satisfaction with life (SWL), SOC, and sociodemographic variables

SWL is a key construct within positive psychology (Proctor, Linley, & Maltby, 2009). This construct is recognized as one of the main components of subjective well-being (Wakefield et al., 2016). SWL is defined as a person's global judgment of their life experience and trajectory up to a given point in time using their own criteria to compare their achievements and true expectations (Diener, 1984). SWL has been widely used to measure psychological adaptation and subjective well-being in cross-cultural research (Ward & Kus, 2012), and is a fundamental element in the assessment of the level of social integration in the host society (Amit & Riss, 2014).

The literature has provided strong support for the positive association between SOC and well-being. SOC is a key element in well-being and immigrant integration (Hombrados-Mendieta, Gómez-Jacinto, Domínguez-Fuentes, & García-Leiva, 2013; Sonn, 2002). Although the time of residence and the SOC can partly explain the level of SWL in immigrants, a deeper analysis of this phenomenon is needed. Based on the understanding that no two migratory realities are identical, it is relevant to study the effects of the main sociodemographic variables that influence the SOC of immigrants over time, because improving the SOC in immigrants may play a key role in increasing their well-being and social integration (Sagy, Stern, & Krakover, 1996). In addition to time of residence, the most commonly associated sociodemographic predictors of SOC are age, sex, marital status, educational level (Cicognani, Martinengo, Albanesi, De Piccoli, & Rollero, 2014; Prezza, Amici, Roberti, & Tedeschi, 2001), ethnic origin, and employment status (Brodsky, O'Campo, & Aronson, 1999). Studies have also analyzed command of the local language, place of origin, and time elapsed since leaving the country (Amit & Bar-lev, 2015; Aycan & Berry, 1996). The following results have been reported in the literature: A tendency toward a positive association between female sex and life satisfaction, although the relationship between sex and life satisfaction is not always clear (Amit, 2010); a protective association between having a partner and emotional health (Hao & Johnson, 2000); an association between native language proficiency and the acquisition of SOC (Amit & Bar-lev, 2015); a close association between social integration and life satisfaction and insertion in the labor market (Herrero, Fuente, & Gracia, 2011); and differences between ethnic and cultural groups in relation to support, with Latin Americans receiving more perceived support than other immigrant groups (Jasinskaja-Lahti, Liebkind, Jaakkola, & Reuter, 2006), whereas individualistic cultures, such as African American cultures, tend to receive less social support (Shavitt et al., 2016).

1.3 | Present study

The time dimension is a key factor in the development of daily experience of belonging in immigrants; however, this factor has received little attention due to the ambiguity of its effects on transnational relationships and immigrant social integration (Portes & Rumbaut, 2014). Attention has been drawn to the scarcity of research on the effect of SOC on SWL over time that also takes into account the moderating effect of specific sociodemographic variables (Frank, Hou, & Schellenberg, 2016). Some authors have suggested the need for immigration studies that give greater importance to the construct time (Hui, Chen, Leung, & Berry, 2015; Waters, 2011).

Figure 1 shows the network of factors and variables investigated in this study. We propose a model that may explain the influence of time of residence on the development of SOC and SWL.

1.4 | Objectives and hypotheses

Three hypotheses were postulated:

(a) A positive association would be found between the SOC and SWL.
(b) The network of relationships shown in Figure 1 would be moderated by the sociodemographic characteristics of the immigrants.
(c) Sociodemographic variables would affect the direct relationships of time of residence on the SOC and SWL.

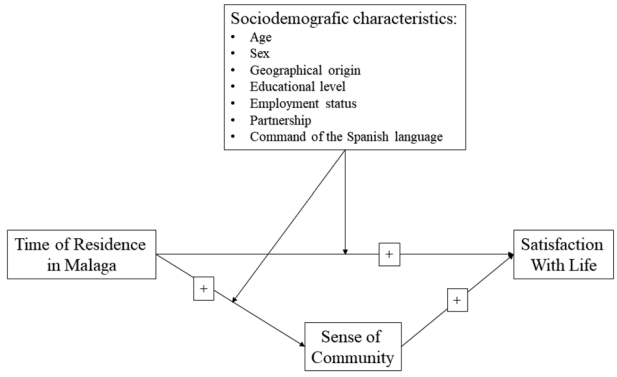

FIGURE 1 Relationships between the time of residence in Malaga, the sense of community, and satisfaction with life, and the moderating effect of the sociodemographic characteristics of immigrants

2 | METHOD

2.1 | Participants and procedure

The study was conducted in Malaga (Spain). The study participants comprised 2,211 immigrants residing in Malaga, aged between 16 and 80 years ($M = 32.48$, standard deviation [SD] = 11.46). They had lived in the city for an average of 8.67 years ($SD = 6.39$, range = 0–50 years). In total, 48.2% were men and 51.8% were women, 43.8% were partnered, and 53.7% were employed. Regarding educational level, 29.6% had attended primary school, 39.6% had attended secondary school, and 30.8% had attended university. Most of the participants (66.1%) had a good command of the Spanish language. The areas of origin of the participants were Africa (24.9%), Eastern Europe (24.7%), Latin America (27.3%), and Asia (23.1%). These percentages are representative of the distribution of immigrants in the city (Instituto Nacional de Estadística, 2017).

The selected neighborhoods in which the immigrants were assessed were geographically delimited in each of the city districts, which were chosen using random route sampling. Municipal districts are large territorial divisions whose boundaries are set by the city council; these divisions are subdivided into neighborhoods. All participants were volunteers and were selected according to quota sampling by sex and origin. The questionnaires applied to the non-Spanish-speaking immigrants were translated into their language of origin by native speakers who also had full command of Spanish. The surveys were conducted in neighborhood associations, immigrant associations, and social service centers located in each district and municipality. Their self-completed questionnaires were checked by the interviewers for completeness. No incentives were offered for their participation.

2.2 | Measures

2.2.1 | Sociodemographic characteristics

Participants were asked to provide information on age, sex, marital status, place of origin, educational level, employment status, time of residence in Malaga, and command of the Spanish language.

2.2.2 | Sense of Community Index (SCI-2; Chavis, Lee, & Acosta, 2008)

This instrument is based on the four components of the SOC model developed by McMillan and Chavis (1986): needs fulfillment, group membership, influence, and emotional connection. The questionnaire comprises 24 items which are scored on a Likert-type scale (1 = *Not at all*, 2 = *Somewhat*, 3 = *Mostly*, 4 = *Completely*). The SCI-2 has been

shown to be a very reliable measure (Cronbach's $\alpha = 0.94$). The total index of the SOC is obtained using the factorial loading scores calculated in the measurement model (see below).

2.2.3 | Satisfaction With Life Scale (SWLS; Pavot & Diener, 1993)

The SWLS is designed to assess a person's global judgment of life satisfaction, which is theoretically predicted to depend on a comparison of life circumstances to one's standards. It assesses the positive side of the individual's experience rather than focusing on unpleasant emotions. The SWLS has a Cronbach's $\alpha = 0.89$. The five items are answered on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The total index of the SWLS is obtained using the factorial loading scores calculated in the measurement model (see below).

3 | RESULTS

In this study, the specific hypothesized relationships between the variable domains were analyzed using the LISREL 9.20 software package (Jöreskog, Olsson, & Wallentin, 2016). The model parameters were estimated using the maximum likelihood method. Figure 2 shows the model used to analyze the effect of age and time of residence in Malaga on the variables SOC and SWL. The key variable in this study was the time of residence in Malaga, because this variable affects the SOC with the host community and SWL. Age functions as a control variable that correlates with time of residence in Malaga; it was included in the predictive equation to determine the effect of time of residence in the city while holding age constant.

A latent variable structural equation modeling approach requires the specification of a structural model and measurement model. The structural model describes interrelationships between unobserved latent constructs and the measurement model describes the relationships between latent variables and their observed variable indicators. These models are described in detail below.

Regarding the measurement model, the exogenous variables age and time of residence in Malaga were measured in years. Neither of these variables needs more than one indicator. The endogenous variables were measured using multiple indicators. As shown in Figure 2, the SOC is represented by 24 indicators corresponding to the items of the SCI-2 (Chavis et al., 2008). SWL is represented by five indicators corresponding to the items of the SWLS (Pavot & Diener, 1993). Table 1 shows the measurement model of the two endogenous latent variables. The results of the model were used to calculate the factorial loading scores. These scores were used to calculate the results of the structural model.

Figure 2 shows the path diagram of the structural model used to analyze the effect of age and time of residence in Malaga on the SWL of immigrants mediated by their SOC. This model shows the postulated direct effects of the exogenous variables on the SOC and SWL (arrows with continuous lines), the postulated indirect effects of the exogenous variables on the SWL (arrows with dashed lines)—which would reveal the mediating role of the SOC—and the direct effects of the SOC on SWL.

Table 1 shows that all 24 indicators of the SOC had high factorial loading scores, which in only one case was <0.50. All indicators had good scores (R^2), which can be interpreted as reliability indices. The five SWL indicators also had high scores (factorial loading > 0.60; reliability > 0.40). Global fit of the model was moderate (standardized root mean square residual = 0.05, goodness-of-fit index = 0.802, comparative fit index = 0.833).

Figure 3 shows the results of the structural model. It shows the direct and indirect relationships between the exogenous and endogenous variables. Statistically significant coefficients are indicated by 2 asterisks at a confidence level of 1% and by 1 asterisk at 5%.

A low positive correlation was found between age and time of residence in Malaga ($r = 0.244$). A significant positive correlation was found between the age of immigrants and their SOC ($\gamma = 0.086$), and between the time of residence in Malaga and their SOC ($\gamma = 0.158$). The two variables explain 4% of the variance of the SOC. An increase

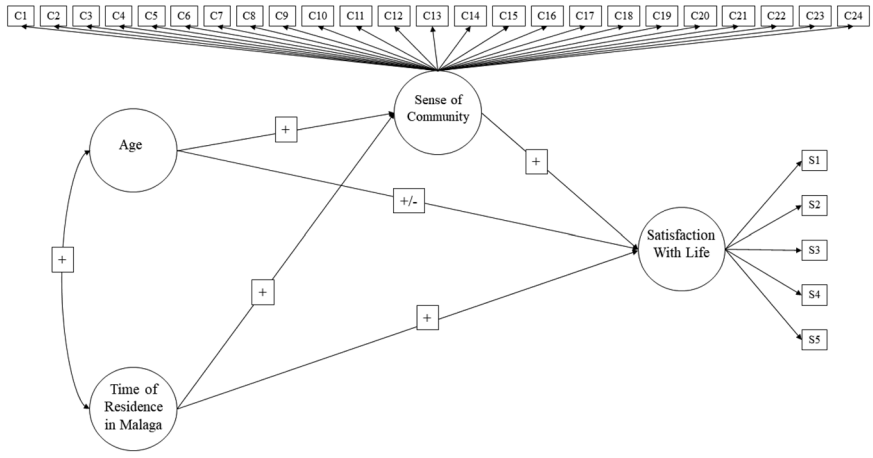

FIGURE 2 Path diagram of the theoretical model of the relationships between the exogenous variables age and time of residence in Malaga and the endogenous variables sense of community and satisfaction with life

in SOC was associated with an increase in age and time of residence in Malaga. However, an increase in age was associated with a decrease in SWL ($\gamma = -0.12$). Nevertheless, an increase in the time of residence in Malaga was associated with an increase in SWL ($\gamma = 0.14$). A high positive correlation was found between an increase in the SOC and SWL ($\beta = 0.281$). The effect of these three variables explains 11% of the variance of SWL. The indirect relationships (mediated by SOC) of the two exogenous variables also affected SWL. Figure 3 shows that the magnitude of this effect was small, although it was positive and significant in both cases. Although the mediating effect of the SOC was small, it implies that both variables increased SWL even in the case of age, which had a direct negative effect on SWL. Age had a direct negative effect on SWL; this effect decreases if the SOC is high. Immigrants experienced more SWL the longer they had been resident in Malaga and the greater their SOC.

Similar analyses were conducted according to the following demographic characteristics of the immigrants: sex, geographical origin, command of the Spanish language, marital status, educational level, and employment status. Table 2 shows the results of the structural model for each of the sociodemographic characteristics. The first part of the table shows the results of the model by sex. The pattern of results by sex was similar. The direct relationship between age and SOC in men was lower than that in women. The main difference was that at similar ages the SOC in women was double that of men. The direct and indirect effect of age on SWL was practically the same in both sexes. The only notable influence of the time of residence in Malaga was its direct and indirect effect on SWL, which was slightly higher in men. The magnitude of the relationship between SOC and SWL was also greater in men than in women.

The second part of Table 2 shows the results of the model by the geographical origin of immigrants: Africa, Eastern Europe, Latin America, and Asia. The table shows that the variances explained by the model of exogenous variables were smaller in immigrants from Latin America and Asia. Although the four groups showed a similar pattern of relationships, the relationship varied in intensity. Age had a significant effect on the SOC in African and Latin American immigrants, but not in the other groups. As in the general model, age had a negative direct effect on SWL in all four groups, although this effect did not reach statistical significance in immigrants from Eastern Europe and was barely significant in those from Asia. Older immigrants from Africa and Latin America had less SWL. Again, as in the general model, age had a barely significant positive indirect effect on SWL in the four groups.

Time of residence in Malaga was associated with an increased SOC in all groups except in Asian immigrants. This exogenous variable was a good predictor of SWL in Africans, a poor predictor of SWL in Latin Americans, and did not reach statistical significance in the other two groups. Table 2 shows that time of residence in Malaga was

TABLE 1 Measurement model of the endogenous variables sense of community (SOC) and satisfaction with life (SWL)

Items	R^2	SOC	SWL
SOC			
C1. My important needs are fulfilled because I am part of this neighborhood	0.455	0.675	
C2. My neighbors and I value the same things	0.436	0.660	
C3. This neighborhood has been successful in meeting the needs of its residents	0.419	0.647	
C4. Being a member of this neighborhood makes me feel good	0.554	0.744	
C5. When I have a problem, I can talk to the neighbors	0.508	0.713	
C6. The people in this neighborhood have similar needs, priorities, and goals	0.368	0.607	
C7. I can trust the people of this neighborhood	0.491	0.701	
C8. I can recognize most of the residents in this neighborhood	0.297	0.545	
C9. Most of the residents in this neighborhood know me	0.285	0.533	
C10. This neighborhood has symbols and expressions such as signs and landmarks that people can recognize	0.235	0.485	
C11. I put a lot of time and effort into this neighborhood	0.497	0.705	
C12. Being a member of this community/neighborhood is a part of my identity	0.601	0.775	
C13. Feeling that I belong to this community/neighborhood is important to me	0.632	0.795	
C14. This community/neighborhood can influence other communities/neighborhoods	0.331	0.576	
C15. I care what other residents in the neighborhood think of me	0.330	0.575	
C16. I have an influence on how the neighborhood is	0.375	0.612	
C17. If there is a problem in this neighborhood, the members can solve it	0.371	0.609	
C18. This neighborhood has good leaders	0.402	0.634	
C19. It is very important for me to be part of this community/neighborhood	0.645	0.803	
C20. I spend a lot of time with other residents of the neighborhood and I really enjoy being with them	0.527	0.726	
C21. I hope to be part of this neighborhood for a long time	0.533	0.730	
C22. The residents of this neighborhood have shared important events together, such as holidays, celebrations, or disasters	0.414	0.643	
C23. I feel hopeful about the future of this neighborhood	0.507	0.712	
C24. The residents of this neighborhood care about each other	0.443	0.666	
SWL			
S1. In most things, my life is close to my ideal	0.705		0.839
S2. The conditions of my life are excellent	0.698		0.836
S3. I am satisfied with my life	0.805		0.897
S4. So far, I have achieved the things that are important to me in life	0.638		0.799
S5. If I were to be born again, I would like everything to be the same again in my life	0.464		0.681

associated with increased SWL in African immigrants. As expected, the SOC had a strong positive on SWL, although the coefficient was lower in the Latin American population.

The next part of Table 2 shows the results according to educational level, which is divided into low (primary school), medium (secondary school/baccalaureate), and high (university). Age was associated with a higher effect of SOC as a function of an increase in educational level across all three levels. However, the direct and indirect effect

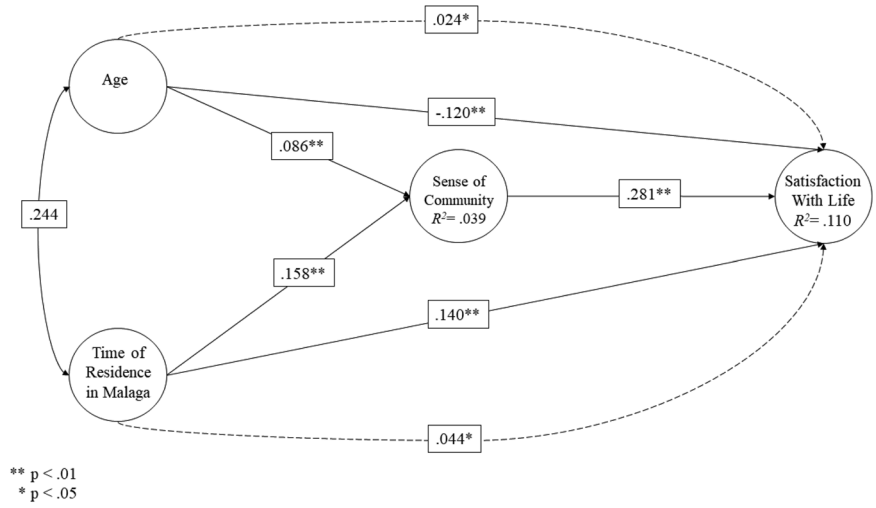

FIGURE 3 Results of the structural model with the direct and indirect standardized coefficients of the relationships between the exogenous and endogenous variables. Direct relationships are represented by arrows with continuous lines and indirect ones by arrows with dashed lines

of age on SWL was barely significant in all three educational levels. In contrast, time of residence was a good predictor of the SOC and SWL, which increased in inverse relation to educational level. Similarly, the SOC was a good predictor of SWL, which decreased in inverse relation to educational level.

The fourth part of Table 2 shows the results according to employment status (employed or unemployed). A direct and indirect association was found between age and being unemployed. Time of residence had a greater effect on the SOC and SWL when the individual was employed. Employment status had little effect on the association between the SOC and SWL.

The fifth part of Table 2 shows the results according to the partnership. No association was found between age and the SOC and SWL and being partnered, whereas an association was found between these variables and not being partnered. The effect of time of residence was stronger in immigrants with partners than in those without partners. In addition, the effect of the SOC on SWL was stronger in immigrants with partners than in those without partners.

The final part of Table 2 shows the results according to the command of the Spanish language (low-intermediate-level group and high-level group). Little difference was found between the two linguistic groups. Age was a better predictor of the SOC in the high-level group, and time of residence was a better predictor of the SOC in the low-intermediate-level group. These variables had little effect on SWL in both groups. However, a low-intermediate command of the Spanish language was associated with an increased effect of the SOC on SWL.

Finally, we investigated the moderating effects of sociodemographic characteristics on the association between time of residence and the SOC and SWL. Several moderation regression analyses were conducted on time of residence as an independent variable, the SOC and SWL as dependent variables, and demographic characteristics as moderating variables (Figure 4). The moderation regression analyses were conducted using Model 1 of the PROCESS macro designed for SPSS (Hayes, 2013).

Table 3 shows the results of the moderation regression analyses with SOC and SWL as dependent variables. The results include the interaction term between the time of residence and the corresponding moderating variable. All analyses used the centered scores of the independent and dependent variable. We first address the results referring to the SOC. Sex did not moderate the association between time of residence and the SOC, model $R^2 = 0.038$, $F(3.2205) = 29.38$, $p < 0.001$; change in R^2 due to interaction = 0.0000, $F = 0.09$, $p = 0.7628$.

Place of origin significantly moderated the association between time of residence and the SOC, $R^2 = 0.037$, $F(3.2239) = 29.29$, $p < 0.001$, although the increase in variance due to the interaction term was small

TABLE 2 Structural model according to sociodemographic characteristics

		Exogenous/endogenous				
		Age		Time		
Sociodemographic characteristics	Variables (endogenous)	*D*	*I*	*D*	*I*	SOC
Men (*n* = 1,050)	SOC/R^2 = 0.036	0.062**		0.165*		
	SWL/R^2 = 0.144	−0.124*	0.020 (*ns*)	0.159*	0.053**	0.332*
Women (*n* = 1,115)	SOC/R^2 = 0.047	0.115*		0.159*		
	SWL/R^2 = 0.083	−111*	0.028**	112*	0.039*	0.248*
Africa (*n* = 558)	SOC/R^2 = 0.056	0.096**		0.193*		
	SWL/R^2 = 0.206	−0.161*	0.030**	0.281*	0.061**	0.317*
Eastern Europe (*n* = 529)	SOC/R^2 = 0.053	0.058 (*ns*)		0.211*		
	SWL/R^2 = 0.108	−0.075 (*ns*)	0.018 (*ns*)	0.065 (*ns*)	0.065*	0.310*
Latin America (*n* = 616)	SOC/R^2 = 0.044	0.104*		0.152*		
	SWL/R^2 = 0.085	−0.154*	0.024 **	0.138*	0.035 **	0.233*
Asia (*n* = 491)	SOC/R^2 = 0.013	0.076 (*ns*)		0.069 (*ns*)		
	SWL/R^2 = 0.095	−0.095**	0.023 (*ns*)	0.049 (*ns*)	0.021 (*ns*)	0.297*
Low educational level (*n* = 637)	SOC/R^2 = 0.078	0.030 (*ns*)		0.270*		
	SWL/R^2 = 0.176	−0.053 (*ns*)	0.011 (*ns*)	0.160*	0.095*	0.353*
Intermediate educational level (*n* = 861)	SOC/R^2 = 0.032	0.107*		0.118*		
	SWL/R^2 = 0.119	−0.036 (*ns*)	0.031**	0.157*	0.035**	0.293*
High educational level (*n* = 670)	SOC/R^2 = 0.035	0.141*		0.093**		
	SWL/R^2 = 0.038	−0.091**	0.026**	0.019 (*ns*)	0.017**	0.186*
Employed (*n* = 1,161)	SOC/R^2 = 0.038	0.039 (*ns*)		0.180*		
	SWL/R^2 = 0.113	−0.020 (*ns*)	0.010 (*ns*)	0.165*	0.048**	0.266*
Unemployed (*n* = 1,012)	SOC/R^2 = 0.028	0.090*		0.129*		
	SWL/R^2 = 0.122	−0.200*	0.026 **	0.100*	0.037**	0.287*
Partnered (*n* = 929)	SOC/R^2 = 0.043	0.027 (*ns*)		0.197*		
	SWL/R^2 = 0.161	−0.036 (*ns*)	0.009 (*ns*)	0.183*	0.065*	0.329*
Nonpartnered (*n* = 1,208)	SOC/R^2 = 0.025	0.057**		0.140*		
	SWL/R^2 = 0.079	−0.129*	0.014 (*ns*)	0.087*	0.033**	0.237*
Low-intermediate Spanish (*n* = 732)	SOC/R^2 = 0.040	0.040 (*ns*)		0.181*		
	SWL/R^2 = 0.138	−0.072 (*ns*)	0.014 (*ns*)	0.091*	0.063*	0.350*
High-level Spanish (*n* = 1,479)	SOC/R^2 = 0.036	0.109*		0.129*		
	SWL/R^2 = 0.074	−0.089*	0.028**	0.076*	0.033**	0.253*

Note. *D*: direct coefficient; *I*: indirect coefficient; *ns*: nonsignificant; SOC: sense of community; SWL: satisfaction with life.
*$p < 0.01$.
**$p < 0.05$.

(change in R^2 due to interaction = 0.0014, $F = 3.31$, $p = 0.068$). Time of residence increased the SOC in African immigrants ($b = 0.0237$, $t = 5.69$, $p < 0.01$). This association was weaker in immigrants from Eastern Europe ($b = 0.0187$, $t = 2.93$, $p < 0.01$). In addition, the association was weaker and nonsignificant in Latin Americans ($b = 0.0136$, $t = 1.53$, $p = 0.12$) and in Asians ($b = 0.0085$, $t = 0.74$, $p = 0.45$).

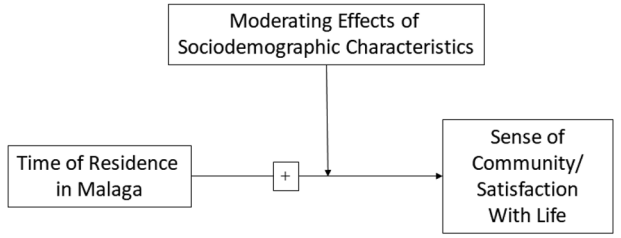

FIGURE 4 Diagram of the moderating effects of sociodemographic characteristics on the association between time of residence and the sense of community and satisfaction with life

Educational level significantly moderated the association between time of residence and the SOC, and reached the highest level of significance of all the sociodemographic variables, model $R^2 = 0.039$, $F(3.2211) = 30.14$, $p < 0.001$ and change in R^2 due to the interaction = 0.0020, $F = 4.56$, $p = 0.032$. Figure 5 shows the form of this

TABLE 3 Results of the regression analysis with the interaction term between the time of residence and demographic characteristics and their effect on the sense of community and satisfaction with life

	Sense of community				Satisfaction with life			
	b	*SE*	*t*	*p*	*b*	*SE*	*t*	*p*
Constant	−0.0028	0.0201	−0.1414	0.8875	−0.0005	0.0199	−0.0250	.9801
Sex	−0.0369	0.0402	−0.9178	0.3588	−0.1089	0.0399	−2.7282	.0064
Time of residence	0.0293	0.0032	9.2831	0.0000	0.0241	0.0031	7.7016	.0000
Time of residence × Sex	−0.0019	0.0063	−0.3018	0.7628	0.0017	0.0062	0.2661	.7902
Constant	−0.0068	0.0200	−0.3385	0.7350	−0.0059	0.0197	−0.3001	.7641
Place of origin	−0.0037	0.0182	−0.2028	0.8393	0.0609	0.0180	3.3863	.0007
Time of residence	0.0288	0.0031	9.2010	0.0000	0.0256	0.0031	8.2692	.0000
Time of residence × Origin	−0.0051	0.0028	−1.8219	0.0686	−0.0066	0.0027	−2.3949	.0167
Constant	−0.0041	0.0201	−0.2021	0.8398	0.0013	0.0192	0.0699	.9443
Educational level	0.0098	0.0259	0.3764	0.7066	0.2998	0.0248	12.0746	.0000
Time of residence	0.0296	0.0032	9.3233	0.0000	0.0240	0.0030	7.8894	.0000
Time of residence × Educational level	−0.0084	0.0039	−2.1357	0.0328	−0.0157	0.0038	−4.1684	.0000
Constant	−0.0107	0.0202	−0.5319	0.5948	−0.0053	0.0200	−0.2630	.7926
Employment status	0.1562	0.0405	3.8614	0.0001	−0.0029	0.0401	−0.0710	.9434
Time of residence	0.0276	0.0032	8.6998	0.0000	0.0257	0.0031	8.1676	.0000
Time of residence × Employment status	0.0049	0.0063	0.7803	0.4353	0.0130	0.0063	2.0747	.0381
Constant	0.0013	0.0202	0.0651	0.9481	0.0001	0.0200	0.0040	.9968
Partnership	0.1492	0.0408	3.6558	0.0003	−0.1306	0.0404	−3.2322	.0012
Time of residence	0.0272	0.0032	8.5459	0.0000	0.0245	0.0032	7.7927	.0000
Time of residence × Partnership	0.0029	0.0063	0.4616	0.6444	0.0141	0.0063	2.2471	.0247
Constant	0.0037	0.0205	0.1827	0.8550	0.0095	0.0200	0.4758	.6343
Command of Spanish Language	−0.0214	0.0442	−0.4848	0.6279	0.3580	0.0431	8.3155	.0000
Time of residence	0.0291	0.0032	9.0309	0.0000	0.0184	0.0031	5.8580	.0000
Time of residence × Command of Spanish	−0.0111	0.0070	−1.5782	0.1147	−0.0140	0.0068	−2.0534	.0401

Note. SE: standard error.

interaction by educational level. A low level of education increased the effect of time of residence on the SOC. A significant effect was found across all three levels of education.

Employment status did not moderate the association between time of residence and the SOC, model $R^2 = 0.043$, $F(3.2214) = 33.54$, $p < 0.001$; R^2 due to interaction = 0.0003, $p = 0.435$. Similar results were found for partnership, $R^2 = 0.042$, $F(3.2181) = 31.99$, $p < 0.001$; R^2 due to interaction = 0.0001, $p = 0.644$, and for command of the Spanish language, although in this case the interaction was greater ($p < 0.114$).

We now address the results referring to SWL. Similar to results on the SOC, sex did not moderate the association between time of residence and the SWL, $R^2 = 0.036$, $F(3.2205) = 23.19$, $p < 0.001$; R^2 due to interaction = 0.0001, $p = 0.790$, but place of origin was a moderator of the association, $R^2 = 0.036$, $F(3.2239) = 27.97$, $p < 0.001$; R^2 due to the interaction = 0.0025, $p = 0.016$. This variable had its strongest effect in African immigrants ($b = 0.0190$, $t = 4.61$, $p < 0.01$); that is, Africans had the highest SWL in relation to the time of residence in Malaga. The effect of this variable was less in Eastern European immigrants ($b = 0.0124$, $t = 1.97$, $p = 0.048$), and it did not reach statistical significance in Latin American and Asian immigrants.

Of all the demographic variables, the educational level had the strongest moderating effect on time of residence and SWL, $R^2 = 0.096$, $F(3.2211) = 78.81$, $p < 0.001$; R^2 due to interaction = 0.0071, $p < 0.001$. Figure 6 presents the form of this interaction by educational level. It shows that as educational level increased, the time of residence had less effect on SWL.

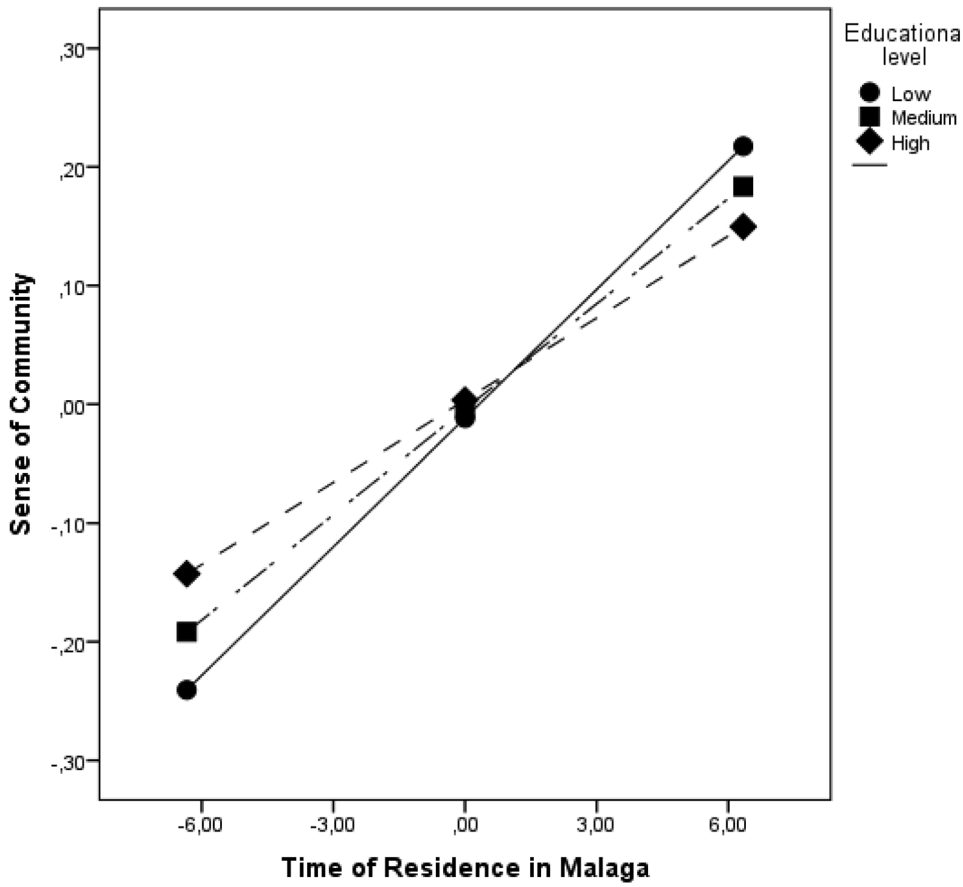

FIGURE 5 Visual representation of the conditional effect of time of residence on the sense of community by educational level

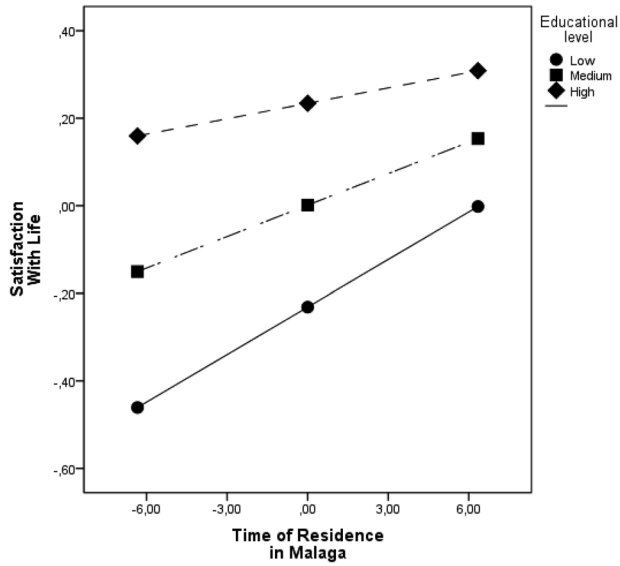

FIGURE 6 Visual representation of the conditional effect of time of residence on satisfaction with life by educational level

Employment status significantly moderated the association between time of residence and SWL, model $R^2 = 0.031$, $F(3.2214) = 23.58$, $p < 0.001$; change in R^2 due to interaction = 0.0019, $p = 0.038$, although this effect was weaker than that of educational level. The effect of time of residence on SWL was greater in employed immigrants ($b = 0.0317$, $t = 7.27$, $p < 0.01$), than in unemployed immigrants ($b = 0.0187$, $t = 4.11$, $p < 0.01$). A similar effect was found for the variable partnership, model $R^2 = 0.033$, $F(3.2181) = 25.17$, $p < 0.001$; change in R^2 due to interaction = 0.0022, $p = 0.024$. The effect of time of residence on SWL was greater in partnered immigrants ($b = 0.0325$, $t = 7.23$, $p < 0.01$) than in nonpartnered immigrants ($b = 0.0184$, $t = 4.19$, $p < 0.01$). Although smaller, a similar effect was found for the variable command of the Spanish language, model $R^2 = 0.061$, $F(3.2259) = 25.17$, $p < 0.001$; change in R^2 due to interaction = 0.0018, $p = 0.040$. Time of residence had a greater effect on SWL in immigrants who had less command of the language ($b = 0.0277$, $t = 4.84$, $p < 0.01$), whereas its effect was less in those with a better command of the language ($b = 0.0137$, $t = 3.66$, $p < 0.01$).

4 | DISCUSSION

Consistent with the results obtained in a previous study on the migratory process (Moscato, Novara, Hombrados-Mendieta, Romano, & Lavanco, 2014), a strong positive association was found between increased SOC and SWL. It was also found that immigrants experienced more SWL as a function of increased time of residence in Malaga and increased SOC.

The results show that age, and particularly years of residence, were positively associated with the SOC (Chipuer & Pretty, 1999; Prezza et al., 2001). Similarly, a positive association was found between age-typical development and increased time of residence (Michel et al., 2012). Also, the increased age was associated with less SWL, whereas increased time of residence in Malaga was associated with greater SWL. These results are in line those reported in the literature, which has shown that an increase in time of residence in a city was associated with an increase in several dimensions of psychological and social well-being (Cueto et al., 2016). In contrast, a negative association was found between increased age and SWL, social integration, and identification with the host culture (Cheung et al., 2011; Martinovic et al., 2009).

This study shows the relevance of analyzing the differential role of SOC according to the exogenous variables used. The SOC plays two roles as an intermediate variable. First, it acts as a mediating variable between time of residence in Malaga and SWL, by increasing SWL. Second, it acts as a buffering variable of the negative effects of immigration on the association between age and SWL. The two roles of the SOC are differentiated by the exogenous variables (time of residence in Malaga vs. age). The study confirmed that the development of a SOC in the host setting functions as a protective factor and an enhancer of SWL in immigrants. The study also confirmed the role of the SOC in maintaining the level of SWL. This aspect is of particular relevance, because immigrants typically experience decreased levels of SWL as a consequence of the negative effects of the migration process (Kutek, Turnbull, & Fairweather-Schmidt, 2011). Therefore, we draw attention to the capacity of the SOC to buffer the negative effects associated with the process of social adaptation of immigrants, and its fundamental role in the integration and life satisfaction of this collective (Hombrados-Mendieta et al., 2013). This association between the SOC and SWL confirms the relevance of strengthening the SOC of immigrants within the host setting (Mak, Cheung, & Law, 2009).

Regarding sociodemographic characteristics, at similar ages, the SOC in women was double that of men, time of residence in Malaga had a slightly stronger influence on SWL in men than in women, and sex did not moderate the effect of time of residence on the SOC and SWL. The results of this study on the influence of gender are not conclusive, which is line with results reported in the literature (Amit, 2010).

In African and Latin American immigrants, older age was associated with less SWL. Increased time of residence in Malaga was associated with increased SOC and SWL in both groups, but this effect was stronger in African immigrants than in Latin American immigrants. However, it had no effect in Asian immigrants. The literature suggests that collectivist cultures, such as Latin American and African ones, are better integrated and perceive more support in host countries than individualistic cultures, such as African American ones (Shavitt et al., 2016). Over time, Africans have acquired a SOC with their host country that has increased their perceived SWL more than that of other ethnic groups. It has been found that ethnicity has a significantly stronger effect on the process of social integration than any other sociodemographic characteristic, including knowledge of the native language (Martinovic et al., 2009). Ethnic origin and the importance given to the SOC by both natives and immigrants in each social context have significant implications for the integration process in immigrants. According to Bathum and Baumann (2007), societies of origin and host societies can be characterized as sociocentric or egocentric. Thus, the development of the SOC in a specific group of immigrants may be enhanced or inhibited according to cultural affinity between the two societies. A possible explanation for the previous results regarding the higher SOC and SWL of Latin Americans and Africans may reside in the combination of the cultural idiosyncrasies that favor integration and the characteristics of the societies of origin of different immigrant groups. It is relevant to study cultural differentiation in different immigrant groups according to their place of origin rather than according to the migration process as whole, to develop specific intervention strategies that promote the SOC.

Regarding the level of education of the immigrants, the results show that as the level of education increased the SOC had less effect on SWL (Amit, 2010). Educational level was the most significant mediating variable between the time of residence and the SOC and SWL. A low educational level increased the effect of time of residence on the SOC and a high educational level decreased the effect of time of residence on SWL. This result could be explained by a lack of job satisfaction: That is, the immigrants may have had to accept employment in occupations below their level of education with a consequent loss of job satisfaction, which would have hindered the development of the SOC and SWL.

No association was found between employment status and the SOC, but an association was found between this variable and SWL. SWL was greater in employed immigrants than in unemployed immigrants. Thus, incorporation in the labor market could be a means to feel fulfilled and therefore more personally satisfied, rather than it being a means to establish a network that enhances the SOC. These results are in line with the results of previous research suggesting that social integration and SWL in immigrants are strongly associated with insertion in the labor market (Herrero et al., 2011). Having a partner had no effect on the SOC, but it did have an effect on SWL. Thus, being

partnered may act as a protective factor of emotional health, which is a key factor in SWL (Hao & Johnson, 2000), rather than as a facilitator of social bonds.

Although few differences were found according to the level of command of the Spanish language, age was a better predictor of the SOC in immigrants with a greater command of the language, whereas time of residence was a better predictor of the SOC in those with less command of the language. It was also found that immigrants with less command of the language had greater SWL over time. These results suggest that in the integration process cultural affinity between immigrants and the host society may play a more decisive role (Martinovic et al., 2009) than the command of the native language (Amit & Bar-lev, 2015). The results also show that, in the short term, older people with less command of the native language experience difficulties in achieving a high level of SOC; however, in the long term, this lack is compensated by other factors such as the creation of social support structures.

4.1 | Limitations and future directions

This study has some limitations. It has a cross-sectional design, and thus it would be of interest to investigate the development of the study variables in the immigrant population over time. It would also be relevant to conduct a cross-cultural study of the developed model to gain further understanding of the process by which immigrants are integrated in different settings. The results of such research, together with the findings of the present study, could be used to continue developing strategies to prevent social conflict, improve quality of life, and facilitate intercultural coexistence.

4.2 | Conclusion

The results have theoretical as well as practical implications. The present study adds to the theoretical conceptualization of SOC in immigrants the relevance of analyzing the differential role of SOC according to the exogenous variables used. The time dimension is a key factor in the development of SOC. In conclusion, the major contribution of this study was provided further insight into the association between the time construct and the SOC and SWL in immigrants by analyzing the moderating role of a group of sociodemographic variables which had been studied independently of each other in previous studies. The findings may be of assistance in designing public policies based on improving the SOC and SWL of immigrants such that they achieve greater well-being taking into account sociodemographic differences. Some of these interventions should be aimed at facilitating the participation of the immigrant population in the activities developed in their community to increase their sense of belonging (Itzhaky, Zanbar, Levy, & Schwartz, 2015). This approach could include interventions to facilitate the permanent education of the immigrant population as a way to strengthen their relationship with the host community (Entigar, 2017), and interventions that take into account the needs of immigrants based on sociodemographic characteristics, such as age (Bravo & Santos-Gónzalez, 2017; Trejos-Herrera, Bahamón, Alarcón-Vásquez, Vélez, & Vinaccia, 2018) and residence time (Wong, Correa, Robinson, & Lu, 2017).

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