

Satisfaction with Retirement: A Qualitative Comparative Analysis with Social Network Analysis

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Abstract

Satisfaction with any aspect of life is not easy to defined, and sometimes, it is still a topic of discussion. That is especially relevant for more excluded populations like older people. This research looked into how relevant the social support networks (SSNs) of older people are for their satisfaction with retirement, specifically in the Chilean context. It will identify some sufficient and necessary conditions for older people to be satisfied with retirement. This research focuses on 30 life histories of older people in Santiago, Chile. They were asked about their histories and SSNs. The analysis applied used a Qualitative Comparative Analysis (QCA) with conditions from the Social Network Analysis (SNA). The results identify sufficient and necessary conditions to achieve satisfaction with retirement. It is highlighted some of the dimensions of SSNs and their reciprocities as relevant conditions for satisfaction with retirement.

Keywords

Mixed methods, Older people, Retirement, QCA, Social support networks.

Introduction

This research focus on older people from Santiago, Chile. This case possesses one of the first pension systems in the world constructed from a neoliberal approach and, at the same time, is one of the leading countries in the world in terms of inequality in economic distribution; this combination of characteristics gives it a particular relevance that justifies its choice of deployment in this study. Chile is an excellent case study for the aging population for three main reasons. First, it is one of the three Latin-American countries with the largest aging populations, the other two being Uruguay and Argentina. Of these, Chile is experiencing the most significant change rate, with the proportion of older people having grown significantly over the past 50 years (ECLAC, 2015; Marín et al., 2005; Pérez & Sierra, 2009). Second, Chile is a developing country with one of the highest levels of social inequality among the countries in

the Organisation for Economic Co-operation and Development (OECD), which enhances the presence of collective advantages and disadvantages over people's lives (OECD, 2018). Third, in 1973, Augusto Pinochet's military dictatorship created the current economic system led by a neoliberal approach (Sojo, 2014). In 1980, still under the dictatorship, the "Administradora Fondo de Pensiones" (AFP) pension system was launched. This consists of private management of funds, as each person has a retirement account containing mandatory savings of 10% of their salary. This system was the first state-endorsed privatized pension system globally and is recognized as having reinforced the country's baseline inequality in the long term (Wisensale, 2003).

This research looked at how relevant the social support networks (SSNs) of older people are for their satisfaction with retirement, specifically in the Chilean context. Some necessary and sufficient conditions will be identified, the fulfillment of which can be taken

as an indication that the retired employee is satisfied with their retirement. The assessment of whether, and to what extent, the retirees are satisfied with their retirement will be carried out wholly through the application of Qualitative Comparative Analysis (QCA), together with the accompaniment of conditions that are measured from the Social Network Analysis (SNA) used.

The QCA methodology allows us to combine a crisp and fuzzy set of conditions in this research. It evaluates the influence of all those conditions to achieve a specific outcome. Accordingly, the literature analysis section of this article evaluates various studies to identify the most commonly adopted definition to ensure that the same can be used as a foundation for the research efforts of the present study. Then, this research used a different strategy: We asked older people how retirement was for them, emphasizing on their experiences and emotions. Then, all those descriptions were inductively put together to create a scale with different levels of satisfaction accordingly with the life histories collected. Therefore, the outcome was calibrated with all the narratives. The satisfaction acquired values between 0 and 1 as a fuzzy set. Each case was assigned to one number according to their experiences.

Many conditions may influence older people to be more satisfied with retirement. In this article, we applied a QCA with conditions of their presence (concerning the gender, age, and presence of chronic disease), their childhood (concerning whether they worked before attaining 18 years of age or before finishing school), and their SSN (concerning the size or density of their networks). In total, the models evaluated 42 conditions to understand retirement satisfaction (Appendixes 1 and 2). The narrative data from the interviews were used to obtain information about each condition. For example, research established that being a widower could impact satisfaction negatively. Then, a condition (as a crisp set) concerning whether that person was a widower or not was added. Later on, the combination of those conditions was tested with the cases. From those analyses, there are identified four sufficient pathways to be satisfied with retirement. Therefore, there was an added value to each of those conditions (or independent variables). The information was collected completely inductively. If the older person did not answer some of those questions, the researcher asked them in another session. This strategy allows capturing the narrative behind each condition to complete the analysis, as it is a case-based methodological approach.

One of the main conclusions is that older people's satisfaction with their retirement is a multidimensional concept. Conditions of varying natures influence it, for example, conditions from their current situation, childhood, and relational conditions (as reciprocity of support or not having any negative ties). The literature review has recognized that satisfaction with retirement used to be measured from a macrolevel perspective and focused on standardized indicators. Those studies had no information from a microlevel perspective, and therefore, neither about the relationships of those people. This article highlights how those minor interactions of an SSN are essential to understanding the satisfaction with retirement.

Satisfaction with Retirement

This research aims to extend the existing knowledge about how older people deal with retirement and, more specifically, how their SSNs change throughout their lives until retirement, ultimately influencing their experiences with it. Not all those in the aging population experience their retirements in the same way, and so they do not necessarily have the same satisfaction levels. Therefore, it is necessary to identify the sufficient conditions required to ensure retirement satisfaction and understand how relevant older people's SSNs are to their retirement experiences. Therefore, this section will seek to extend what knowledge there is about satisfaction in retirement and the factors that may influence it.

Barfield and Morgan (1978) proposed measuring satisfaction levels in retirement by using a survey to gather older people's perspectives on their expectations, health conditions, and income. In Scherman's (1972) research, satisfaction levels were established in three different moments, adding a temporal approach, to an extent. O'Brien (1981) asked for people's overall life satisfaction, including activities, people, finances, and health conditions. Additional research in the same year proposed measuring different types of older people (organizer, holding on, rocking chair, and dissatisfied) according to their adjustment levels to retirement (Walker et al., 1981). More recently, Butrica and Schaner (2006) asked people directly: "What is your level of satisfaction with life during retirement?", as other studies did, too (Beck, 1982; Keng Mun Lee & Wing-kin Law, 2004; Michinov et al., 2008; Pinquart & Schindler, 2007; Reis & Pushkar Gold, 1993). Other research (van Solinge & Henkens, 2008) measured satisfaction levels with a wide scale of seven indicators, including the person's adjustment to retirement (time and difficulty), their enjoyment of retirement, improvement of the

situation, happiness, and retirement's suitability to the person. Potocnik et al. (2010) used questionnaires in which older people marked how much they enjoyed their retirement on a simple scale. Another form of measurement evaluated satisfaction levels by the amount of pension provided using a survey with a scale (de Bresser & Soest, 2015; Fouquereau et al., 2005). In general, studies of satisfaction levels in retirement have used a scale with values between 1 and 10 (for example) to measure them by directly questioning older people about them.

Existing research mainly attempts to understand satisfaction in retirement using those classical scales (Barfield & Morgan, 1978; O'Brien, 1981; Potocnik et al., 2010; Scherman, 1972). As a result, many studies have concentrated more on people's life satisfaction in a monetary parlance, that is to say, in terms of how much of a pension they receive, rather than enquiring in relation to their general satisfaction with retirement. For example, Calasanti's (1996) paper explores the relationship between gender and life satisfaction during retirement. However, in many cases, a direct question about "life satisfaction while retired" was asked rather than about "satisfaction with retirement," which can be understood as a separate concept (Fouquereau et al., 1999).

There could be many conditions that may influence people's satisfaction with the money they receive during retirement. One primary condition would be the pension system's amount of money they formally receive. However, a higher level of material aid could facilitate access to a better quality of resources in a person's everyday life and at the same time help them cope with other major life stressors (McCarty et al., 2019).

There are other conditions in an interviewee's current situation present in their everyday lives. First, living with other people during retirement could improve their satisfaction in general (Bowling et al., 1995; Kemperman et al., 2019; Park et al., 2019). Second, if an older person has at least one person who helps them with domestic tasks (from inside or outside the family), this positively impacts them (Park et al., 2019). Finally, working by choice has a positive impact compared to working because of the money needed to live (Butrica & Schaner, 2006; Calvo et al., 2017). Furthermore, it has been demonstrated that retirees who engage in more activities are more likely to be satisfied (Butrica & Schaner, 2006).

Research into the influence of chronic disease on a person's satisfaction has a long history. It was recently identified that some events from childhood, such as socioeconomic status, could affect cognitive function in the long term (Hoven et al., 2018; Liu &

Lachman, 2019). Accordingly, less cognitive decline is also related to less isolation from peers and more satisfied aging (Upenieks et al., 2018). Some research has established that better health conditions are essential to successful aging (Cornwell & Waite, 2009). Barfield and Morgan (1978) found that satisfaction with retirement was associated with health problems. Research has established that having health and financial issues could be compensated by social support, cognitive ability, and a significant level of autonomy (Hansson et al., 2019).

There has been an increasing amount of literature on the impact of having a partner alive during retirement. However, there is still no consensus on this topic (Cornwell et al., 2008; Cornwell & Laumann, 2011; Hatch & Bulcroft, 1992; Walters & Bartlett, 2009). In these studies, quite apart from there emerging adequate evidence that being a widower could create an opportunity to form new relationships, which would have a positive impact (not least in terms of ameliorating the psychological condition of those burdened by thoughts of self-perceived isolation), there is evidence that losing of a partner is a significant stressor in life, which in many cases could lead to depression. However, it is still a topic without a unique empirical result.

The age and gender of older people are critical conditions that affect their satisfaction in retirement (Russell, 1987; Seccombe & Lee, 1986). In their study, Calvo, Madero-Cabib, and Staudinger (2017) demonstrated that women with lower education levels had more part-time jobs and were more likely to be unemployed, leading to a low retirement pension. In the same study, the results show that the degree of destandardization differs according to a person's class over their life course.

Other characteristics that may influence an older person's satisfaction with their money are formed from past events. Studies have found that people who have children before they turn 18 may face more difficulties earlier on in life than others, which would cause inequalities in the future (Angelini et al., 2019). The same is true for those working during childhood (Government Office for Science, 2016). It has been established that whether or not someone finishes school can cause a difference to their lifestyle in later life (Angelini et al., 2019). In addition, a person's birthplace makes a difference to their trajectories; if it is in a capital city, they probably have good access to better education, health, and opportunities. Finally, it has been argued that people's parents may significantly impact them during childhood, with changes visible even during retirement (Palaci et al., 2017; Robertson-Rose, 2020). These past conditions

are not always incorporated into the same analysis, which will be explored in this paper.

According to the evidence, the experience of retirement varies from one individual to the next. As established, some conditions could increase older people's satisfaction with retirement. However, indicators of older people's SSNs have not yet been tested in line with these conditions, which, from the previous sections, seems to be an aspect that may influence their satisfaction. Therefore, this article will test whether specific measurements from SSNs (such as size, density, support dimension, and reciprocity) can increase satisfaction with retirement. The present study will conduct statistical analyses to ascertain the exact influence that specific SSN measurements might wield on a metric representing the retirement satisfaction, and its results could be used to elicit information about how older people deal with their retirements in association with their SSNs.

Methods

Data Collection

When compared to other OECD countries, a club of mostly rich countries, Chile appears to be a particularly unequal country. However, it would be convenient to place it in the broader Latin-American and international context. According to a World Bank report in 2016, Chile ranks 14th when the Gini coefficient is used to measure inequality. In addition, Chile is among the upper-middle or high-income countries in the region, while other highly unequal countries such as Honduras or Guatemala are also income-poor. It is also the economy that has grown the most in the region since the 1980s and some reforms such as "solidarity retirement" and educational reforms could have an impact on this situation. In this context, I studied a group of 30 older people living in Santiago, Chile. They were contacted between October 2019 and January 2020. Of this group, 10 lived in a higher-class district, 10 in a middle-class district, and 10 in a lower-class district. Furthermore, 15 were women, and 15 were men. Each interview applied was composed of three stages: First, the life history of the participant was enquired into, which sometimes involved more than one interview. Second, the participant was asked to identify the most important events of their life. These events numbered mostly in the range of three to eight, depending on the sharpness of recall of the individual interviewed. Third, for each of those events, the question was asked concerning the

SSN questionnaires. Finally, questions were asked concerning the SSN at the moment of the interview.

They were asked for their life histories and details of their SSNs over time. Accordingly, they identified the most important events of their lives, and I asked for information on their SSNs during each of these. In general, older people identified between three and eight events, plus their current networks. Their SSN was retrospective, and it considered material aid, intimate support, advice, physical assistance, feedback, positive interactions (Barrera, 1980), and negative interactions (Leffler et al., 1986; Offer & Fischer, 2018). This means that a survey was applied (following Barrera, 1980) with questions semi-standardized about each of these dimensions. These questions were asked twice, but in different dimensions: first, those dimensions of support that the ego received, and second, those that one's ego gave to others. Then, each dimension was collected in both directions. Studying older people to approach SSN gives us a deep understanding of them from a longitudinal perspective. Specifically, these actors allow us to gain information from many years of a person's life. These 30 cases constituted the primary sources of information for this article.

Data Analysis

As mentioned, this article looks at those necessary and sufficient conditions that ensure an older person is satisfied with the money they receive during retirement, specifically in the Chilean context. Therefore, the question is, how relevant are relational conditions to satisfaction with retirement? How appropriate is each dimension of social support? Is it essential also to consider the reciprocity of these ties? Again, the QCA applied is presented here (Olsen, 2012; Ragin, 2014[1987]; Schneider & Wagemann, 2012) to verify each condition's relevance to the outcome. This methodology used Boolean algebra to identify which variable could be considered a dependent variable's necessity and sufficiency.

QCA is a methodological strategy for analysis that compares cases from qualitative data. It was created by Ragin (2014 [1987]), who introduced it as a strategic approach beyond the binary distinction between quantitative and qualitative data. It aims to make a parallel comparison of cases with comparable elements, even if some characteristics are missing. He aimed to identify a tool that allowed researchers to systematically integrate in-case and cross-case analyses. This uses a Boolean approach, a subset of the general algebra of sets and logic. Furthermore, QCA combines a range of tools, as "it

examines cases; it uses categorical variables; it looks at different combinations of conditions (that is, cells of a multivariate cross-tabulation); it can be applied to categorical dependent variables; and it involves data reduction” (Ragin, 2014[1987], p. xi). It is an approach constructed from set theory, which uses a set instead of variables, as “Variables sort, rank, or array cases relative to one another, often based on the arithmetic mean. (...) A set, by contrast, is a grouping and is more case-oriented than a variable because sets entail membership criteria and have classificatory consequences.” (Ragin, 2014[1987], p. xxiv). Therefore, it is ideal for examining explicit connections between conditions and particular outcomes (Ragin, 2008).

Among social science research methods, QCA combines inductive and deductive processes in the same research (Bazeley, 2018). It does not use probability at all; instead, it uses data to measure the degree of membership or non-membership in the case of groupings in a set. In other words, this method is “used to examine patterns of joint membership in the vector space of all the conditions that define configurations in the qualitative data” (Olsen, 2012, p. 184). Here, a vector space is a multidimensional space with fuzzy set measures in every “corner,” and we can depict the data in a plane for two-dimensional space, a cube for three-dimensional space, and so on. The causal analysis integrates multiple causes and can consider eight, 10, or more dimensions. Another benefit of this strategy is that we can use many different types of variables, such as crisp sets, multi-values, and fuzzy sets. For this research, I used crisp and fuzzy sets. QCA is simultaneously a technique and a research approach and fits perfectly with studies involving 10–50 cases (Medina et al., 2017; Schneider & Wageman, 2012). Recent improvements in software allow thousands of cases to be used in QCA (Longest & Vaisey, 2008).

There were 42 conditions added into the model. This number of conditions was justified, first, with the theoretical framework, as there was found evidence of each one in relation with the outcome. Second, all the interviews were processed for other analyses (for the most part those involving a narrative element) employed in this research, thus enabling the formation of those categories whose incorporation into the QCA model would be crucial. As has been mentioned, QCA performs well with studies of 10–50 cases, and does not use a statistical approach. Therefore, the fact that the conditions were so many is related with a theoretical and qualitative decision, which does not influence the performance of its results.

Different conditions were tested for each variable (see Appendixes 1 and 2); in the first model, nine main conditions were tested in terms of the current situation of each person interviewed. The second was about testing the five temporal variables (explained later). Later, in the third model, variables of the SSN (in both directions) were introduced by type of support. In addition, the model was created using measurements from the SNA applied to each case. Finally, the QCA model’s analysis was conducted using the FsQCA and RStudio programs (Dusa, 2019).

Concerning the current situation of older people, some conditions were added. Among these conditions, one was to assess whether the individual concerned did or did not have a chronic disease. For coding this variable, the following protocol was followed: If the participant talked about their problems and worries concerning their health at the present, this was taken as a sign that they had a chronic disease, and accordingly, the participant was categorized as 1 (presence of a chronic disease). On the other hand, if this did not happen, the coding was done as 0, indicating absence. In other words, the subjective approach to each participant’s health status was measured. It is recognized that a further operationalization of this condition in particular would be needed for future research.

In this article, five temporal variables are used: whether or not the person was born in the capital, whether or not they completed school, whether or not they started working before turning 18 years of age, whether or not they had children before turning 18 years of age, and whether or not they had one or both parents alive and in contact with them during childhood. Therefore, all of these variables are related to the interviewee’s childhood.

Following this research’s mixed methods approach, some conditions from SNA were incorporated. The person interviewed is the EGO; the people they mention are their ALTERS. The incorporation of social network measures as conditions of QCA is not new. It has been demonstrated as being useful for a better understanding of the influence of relationships in people’s lives (Hollstein & Wagemann, 2014). These conditions obtained from the SNA are: size, density, index of qualitative variation (IQV), efficiency, constrain, and reciprocity; as described below. More information concerning each of these is available in Appendix 2, in which the theoretical argument of each one, too, can be found.

Size of the Social Support Network

This concept refers to the number of alters in the ego's network. This study uses the size of the complete network (without the ego) by each type of support. This measure allows for a better understanding of the number of influential people who are active resources of possible help from the ego's perspective. The calculation of this measurement comprised the total number of alters that give or receive at least one support from the alters nominated.

Density

This measure refers to the density of a network without the ego. It is calculated by "the number of ties between alter divided by the number of possible ties" (Crossley et al., 2015, p. 82). It was calculated for the complete network and then again without including kin. Previous studies have shown that older people tend to have dense networks, a product of the time passed, making those relationships close. However, there is currently no consensus on this. The calculation to obtain the density involved using the undirected network. It multiplies the size (n) with the size minus 1 ($n-1$); afterward, the obtained result is divided by 2.

Index of Qualitative Variation

The IQV establishes the level of dispersion in an ego's network (Crossley et al., 2015). This research was constructed to measure the diversity of the dimensions of support received by the ego. In addition, it is a normalization of Blau's index, which is a valuable measure that enables comparison (Borgatti et al., 2013). In this study, the IQV was calculated by how many alters had characteristics specific to a particular group. In this case, there were six groups (one per dimension of support), and each group was formed of the people who gave the ego that dimension of support. Therefore, IQV shows how diverse the dimensions of support were that the ego received at the time of the interview.

Efficiency

This measure was proposed by Burt (1995) and is obtained using the size and average centrality of a network. Compared to the size, the network's efficiency gives us information about non-redundant contacts in a network; in other words, the efficiency level is measured by how many non-redundant contacts an ego has. In general, and from previous

studies of older people, no efficiency results were found. However, this measurement helps to establish more information about the structure of older people's networks, in this case. To calculate them, it is considered that in the effective size, ego is excluded from the measurements, and n is the total size of the network.

Constraint

According to Burt (2000), a constraint is about gaining a sense of the network's redundancy. In other words, it is the concentration of the ego's time in one connected network, considering the amount of time they invest in their alters and the amount of time their alters invest in one another. Everett and Borgatti's (2020) proposed calculation method was considered here. Therefore, high levels of constraint are expected to be found in lower-class districts compared to higher-class districts. His calculation is the summarization of how much constraint each alter delivers to ego.

Reciprocity

This measure establishes how many relationships in an ego's network are mutual. For this calculation, the total number of reciprocated ties was divided by the total number of ties (Borgatti et al., 2013). This was calculated for each supported network and normalized proportionally to the number of mutual ties in each specific network. The bigger number obtained as a result indicates that the networks are composed of a heightened number of reciprocated links. Reciprocity is measured with a division between the total number of mutual links in the network, and the total number of links.

Concerning the calibration of fuzzy sets' values, there were some methodological decisions taken that would be helpful to state here. First, the outcome was a fuzzy set constructed from the experience of each participant, for which the coding in detail is explained in the forthcoming subsection. This condition had a more qualitative approach for coding. Second, the majority of the measures used from the social networks approach were "naturally" coded as fuzzy. For example, the density has resulted in values between 0 and 1, and so it matches perfectly with the fuzzy frame. Third, just a couple of the conditions needs some transformation to have values among 0 and 1. Finally, there was taken into account a calibration process of these variables from a qualitative approach. It was applied with each condition, checking on the life histories of each

Table 1. Categorization of the outcome with QCA.

Value	Definition
0	Completely unsatisfied
0.1	Dissatisfied, critical, and without hope of improvement in the future
0.2	Dissatisfied and critical
0.3	Dissatisfied
0.4	Understands that has only a little amount of money, but is not dissatisfied
0.5	Indifferent
0.6	Knows that there are others in a worse situation
0.7	Satisfied
0.8	Satisfied and knows that he/she possesses more than others
0.9	Satisfied and knows that he/she earn more than others and can travel at any time
1	Very satisfied

QCA, qualitative comparative analysis.

participant to make sense of the results, and to calibrate them.

Creation of the Outcome for QCA

As has been said, the sample used was composed of 30 older people interviewed. During the interview, I asked all those forming part of the sample an approximation of the amount of money received by them each month, considering what they received from the state, the system of pensions, their relatives, a second house, and other options for periodical income generation. The amount of money was the summarization of what they used to receive each month, without caring about its origin. In general, their pension amount was diverse, from \$100,000 (£95 approximately) until >\$900,000 (£860 approximately). In Chile, the minimum wage was \$330,000 (£315 approximately with taxes previously reduced) at the moment of fieldwork.

After these questions, I asked about their satisfaction with their financial situation during retirement. In this way, I was not only asking for the amount of money received each month, but also about their opinion, feelings, and experiences about it. Sometimes older people mentioned about how they do not have enough money to afford buying new

clothes or even food; while others related that they had the opportunity to travel. I took those answers and categorized them accordingly from “Not satisfied with their retirement at all,” until “Very satisfied with their retirement.” In the end, I have the outcome used in QCA varied from 0 until 1. This way of measuring the outcome allows including their opinion about the amount of money received by them, their emotions, and expectations.

The outcome was how satisfied the person interviewed (the ego) was with their retirement. The outcome is categorized in Table 1.

Results

Outcome: Satisfaction with Retirement

The distribution of the answer about satisfaction with retirement among the people interviewed can be seen in Figure 1. Those living in a high-class district correspond to the cases from 1 to 10, in a middle-class district are from 11 to 20, and in a low-class district are from 21 to 30. This graph makes visible a difference in socioeconomic status among these participants: the first 10 cases are more satisfied than the last 10.

In the following paragraphs, I will give examples of how people reacted to questions concerning retirement satisfaction. Their situations were unique and diverse. They all had different lives and, therefore, different expectations. First, it is the case of Nicolás, an older man living in a low-class district. He was classified as a 0.1 on the scale of satisfaction with retirement. When I asked him about his retirement satisfaction, he told me how unfair his pension was. He does not have the opportunity to work anymore since the preceding year because of chronic disease, making him feel disappointed as he could not help more with money to his family. He was very critical about the current pensions system, saying that he is alive only because his grandchildren help him. Besides, he did not express any hope for some changes in the future. In a different part of the interview, he mentioned these things to describe his current situation, which he defines as “misery.” In his words:

“when I get retired, I was not happy with it at all, so I had to start working... it was a misery... my granddaughter and grandson pay a lot of my stuff, they are both working so they both pay for the food and the house ... I pay the water bill and the energy bill ... I pay like \$100.000 [as £95] ... and when I have something left, I cooperate paying

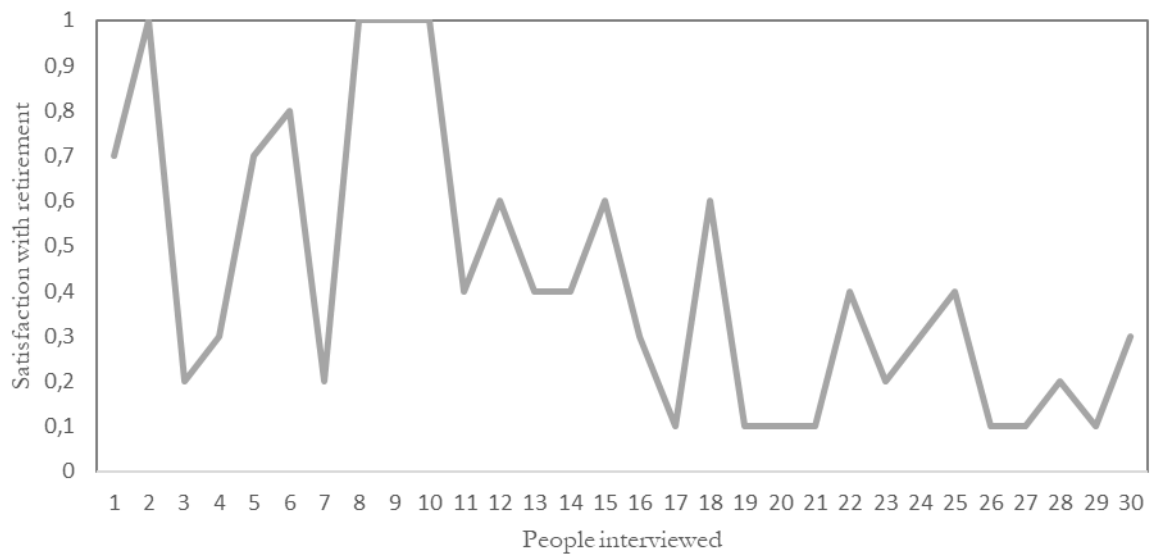


Figure 1: Level of satisfaction with retirement per person interviewed. Source: Fieldwork October 2019–January 2020 in Santiago, Chile.

for a bread for dinner or breakfast ...” (Nicolás, low-class district, 89 years old, satisfaction with retirement of 0.1)

Another similar case is Patricio, who got a 0.1 in satisfaction with retirement. He lived in La Reina and was very critical and hopeless about any improvements in his future. He uses the same word to describe the pension he received, a “misery.” He said that his retirement had restricted his daily life because of his low pension. He described it as:

“a nonsense... and I received a misery, so... I received like \$150.000 [as £148 per month]... this is an abuse... and it is that all these revolts are also for all these things, like how they [the government] leave the old people retiring with the minimum... even though that I worked a lot when I was young” (Patricio, middle-class district, 75 years old, satisfaction with retirement of 0.1)

The situation was a little different with Patricia, who was categorized as a 0.4 on the outcome’s scale. She has lived in Quinta Normal almost her entire life and has worked since an early age. When I asked about her retirement, she answered indifferently to the topic. Patricia mentions that she has a “little amount of money” but is not dissatisfied. She said, “I was worried that my son has everything. Also, I never had necessities because I worked my whole life” (Patricia, low-class district, 62 years old, satisfaction with retirement of 0.4). She is not critical of her

retirement because, as she describes, she does not spend too much on clothes or holidays. Besides, she works informally, giving her enough for bills and food.

Other people interviewed were only able to survive because of their savings. That is the case of Elena, who has been living mainly from her savings in the bank. Her satisfaction with retirement on a fuzzy-set scale was 0.6. This situation does not allow her to go on vacation at any time of the year or to fancy restaurants; however, she has the money to pay the bills and meet the food requirements comfortably. As she comments below:

“I have savings, which I am trying to stretch like an elastic until I can... I have some savings in the bank... It is a little amount; however, I am a very methodic person to spend the money, I do not spend in useless things, only in useful ones. I leave only with what I need... at this stage of my life I do not go to buy new clothes at any time, no... you can wash the clothes, save it, and that’s it” (Elena, middle-class district, 86 years old, satisfaction with retirement of 0.6)

Another aspect included in the fuzzy-set scale of satisfaction with retirement was people’s expectations about it. Alvaro had lived over time with a significant amount of money, which made him live in a specific way. Alvaro continued working by choice at the moment I did the interview. He was an external consultant in a prestigious topic of his discipline. As in the other cases, he does not report any worries

about his necessities (food, health, and bills). He was more worried about his family's economic situation, whom he used to help monetarily. Therefore, he was classified as having a 1 on the satisfaction scale with retirement. As he would say:

"The contributions of the house in the beach, and from another apartment that I have for savings, the contributions had me exhausted. But in general, I am very good, without any problems. Also, I had living in the country with my two daughters, and one of them had some economic problems, and I help her..." (Alvaro, high-class district, 82 years old, satisfaction with retirement of 1)

All these cases had different expectations and emotions embedded into their experiences with retirement. Also, they live in different environments, with subjective and structural distinctions. However, the fact that questions was asked about their satisfaction with retirement tends to help us incorporate those emotions and expectations into the outcome.

Sufficient Pathways to Accomplish Satisfaction with Retirement

The main results of the QCA applied in this research identified sufficient pathways to achieve satisfaction with retirement, and others were classified as necessary. Those two concepts, sufficient and necessary, imply different meanings, impacting the interpretation of results. To clarify those, this article has used the definition of Ragin for those two:

"A cause is defined as necessary if it must be present for a certain outcome to occur. A cause is defined as sufficient if by itself it can produce a certain outcome. This distinction is meaningful only in the context of theoretical perspectives. No cause is necessary, for example, independent of a theory that specifies it as a relevant cause. Neither necessity nor sufficiency exists independently of theories that proposes causes." (Ragin, 2014[1987], p. 99).

In consonance with this logic, the forthcoming pages will present the results of those conditions that appear to be sufficient to achieve satisfaction with retirement in the case of Chile's retirees. After that, those conditions that appear necessary to achieve the same outcome are also presented. In that sense, all those conditions might be helpful in the determination of future public policies for Chile's aging population.

Table 2. Sufficient pathways for satisfaction with retirement.

No.	Variable name	Sufficient conditions Consistency
1	Amount of pension each month	0.797
2	Having a chronical disease (or not)	0.767
5	Working by choice (or not)	0.660
7	District in which they live during retirement	0.676
29	Size of SSN	0.617
30	Size of SSN with no kin	0.624
34	Efficiency of SSN	0.669
35	Reciprocity of material aid	0.629
36	Reciprocity of intimate interaction	0.620
39	Reciprocity of physical assistance	0.736

Note: For interpretation of a consistency: between 0.8–1.0 is high; 0.6–0.7 is modest; and the rest are low.

It is required to identify the meaning of consistency in QCA. Consistency indicates the extent to which the empirical data are used to coincide with the postulated subset relation. In general, it has been recommended that the stronger associations have a value at least >0.8 (hopefully up to 0.9), and a value between 0.6 and 0.8 would be modest (Kent, 2008). Then, in this research, both of these, the modest and higher values, are reported. Those conditions with a value <0.6 were left out of the estimation.

As has been indicated before, this article evaluated 42 conditions at the same time. The next subsection presents sufficient pathways to achieve retirement satisfaction in this context. All those sufficient conditions are provided in Table 2, and in the following pages, I will look closely into each of them. Also, I present those that are sufficient conditions alone, and then those as pathways.

All the conditions from Table 2 demonstrated a modest association with the outcome. Even though none of them is high, they are still relevant for this study's specific context. The first one is that receiving a pension closer to $>\$900,000$ would be sufficient to achieve the outcome. Another condition close to that is the district where the person lived during the

interview. In other words, living in a high-class district would be sufficient, making somehow visible high levels of inequalities in the country. This observation coincides with the literature that declared that high levels of inequality were prevalent in Chile, these being particularly visible in the unremarkable amounts of pensions that the retirees received, and the districts to which the retirees had access in which to locate their living quarters (PNUD, 2017).

The variable "Working" concerned the question of whether the person interviewed worked or not. Accordingly, the answers were working because they needed the money, or not working, or working by choice to keep themselves active. These findings show that working by choice would be sufficient to satisfy retirement.

Another variable about the current situation of the older people interviewed was their health. This variable was a crisp set, and then, there were two options: having a chronic disease or not. For the participants not having a chronic disease, this fact appears to be sufficient for bringing about an optimal degree of satisfaction in them with retirement. About this variable in particular, it is relevant to notice that many researchers had already found that health works as a main factor for wellbeing and satisfaction. Accordingly, this result is coherent, although, as has been recognized in the methods section, for future research it would be helpful to have a deep operationalization of this condition.

Next, we have those variables from the analysis applied to the SSNs. The size of the networks of older people seems to be related to their wellbeing (Bowling et al., 1995; Cornwell et al., 2008; Liu, 2019; Seeman & Berkman, 1988) and the probability of having an accident (Boyle et al., 2010). The findings in this article demonstrated something similar. This variable (size) had values between 0 and 19 or more people nominated in the network. The results show that having an SSN with 19 or more alters appears sufficient to achieve the outcome. Meanwhile, the same thing happens if we take out the kin relationships of ego, which reduced the maximum of alters nominated, having values among 0 and 10 or more. The finding would accordingly be that this variable is also sufficient.

One of the interviewees, Javiera, told me about her relationships. She used to have big groups of friends, although she had one best friend with whom she does everything. That friendship has been present for almost her whole life (since school), and they reciprocated each other with support, especially the intimate interaction. She explains to me:

"I am going to tell you something about friendship, because of the age, once you reach some age you do not get new friends... I am talking to you about real friendships...you can have thousands of people who you know, you can take a coffee with other friends, or friend of those friends, and maybe all of them are a lot... but you cannot explain what happens to me with my best friend, I said to her, "I have all these problems with this, and those other economic issues, and everything," and she will not ask "Why?," not at all... because she knows me and my whole trajectory, so we keep the conversation going" (Javiera, high-class district, 76 years old, older woman).

Later on, in the interview, I asked how well her best friends know her family, to trace those links in the network. She answered that she knew all of them, and that they had all had been on the same holiday together a lot. After all these aspects had been covered, when I asked for the reciprocity for each dimension of support, Javiera immediately provided her answer very securely: everything reciprocated with her best friends. In this case, the best friend of Javiera would be a representation of what Lomnitz (1971) conceptualizes as *compadrazgo* in the Chilean context. A person who is so close to an ego appears to have a kin relationship with them. The reciprocity among them is natural and an essential part of the relationship, which they do not question. The immense depth and closeness of this relationship is brought out by the fact that Javiera said that she does not know what name to give it, because it is something more significant than simply being friends.

An analysis of the data matrix was applied with fuzzy-set membership scores, using all the conditions mentioned before. Table 2 contains its results, with sufficient paths and case distribution. As indicated before, it appeared that the consistency would be >0.8 . There is only one exception for A, which was close enough (0.76) to be included. In addition, the cases covered by each membership set are also identified in Table 3. Before all this analysis, each fuzzy set condition was calibrated using the tool incorporated to compute it in fsQCA software. Also, the solution was >0.8 in consistency, as recommended by Legewie (2013).

In Table 3 is used the next symbology for each condition:

- A: Having a chronic disease during his/her life.
- B: Working by choice during retirement.
- C: Living in a high-class district during retirement.
- D: Having a big size of their personal network.
- E: Having a high efficiency of their personal network.
- O: Achieving the outcome, which is satisfaction with retirement.

Table 3. Sufficient paths to being satisfied with retirement.

	D*E	A*~B*~C*~D	~A*B*C*~D	~A*B*~D*~E
Consistency	0.930	0.995	0.916	0.955
Covered cases*	4, 11, 16	9, 8, 10	30, 25, 22, 28, 21	3, 22
Solution coverage	0.460	0.396	0.501	0.501
Solution consistency	0.930	0.995	0.920	0.920

Notes: *These are the cases with membership in the sufficient path bigger than 0.5.

From Table 3, we have four configurations of pathways to achieve satisfaction with retirement:

The first one is as follows: having a bigger size on their personal network (D) AND higher efficiency in it (E), made a sufficient path for satisfaction with retirement.

$$D \cap E \Rightarrow O$$

The second path is having a chronic disease (A), AND working by necessity (B), AND living in the low-class district (C), AND having a little personal network (D).

$$A \cap \sim B \cap \sim C \cap \sim D \Rightarrow O$$

Next, the third pathway is composed of not having a chronic disease (A), AND working by choice (B), AND living in the high-class district (C), AND having a little personal network (D).

$$\sim A \cap B \cap C \cap \sim D \Rightarrow O$$

Finally, the fourth pathway was not having a chronic disease (A), AND working by choice (B), AND having a little personal network (D), AND a lower level of efficiency in their network (E).

$$\sim A \cap B \cap \sim D \cap \sim E \Rightarrow O$$

The fact that the network size is relevant is coherent with the literature. The first pathway considers having a more extensive personal network (more than 11 alters) as a condition to achieve satisfaction with retirement. However, that is in combination with having a higher level of efficiency, which, as mentioned, measured the amount of time and resources that ego had to invest to reach anybody in the network. In the last pathway, having a small personal network is related to a lower efficiency level, contrary to the first pathway.

Not having a chronic disease was a condition appearing to be sufficient for achieving the outcome. However, looking closer into the covered cases provides a clearer picture into how this condition could create difficulties in the long term. For example, in the case of Josefina (low-class district, 95 years old, satisfaction with retirement: 0.2), she and her husband had had chronic diseases throughout their lives. During the interview, she recognized that economic problems were always associated with paying bills in the health care system, primarily those pertaining to tests and medications. She tells me:

“So when this started (retirement), after so much illness in my life, I could not afford the remedies well, and my family helped me, plus brothers, but after my brothers disappeared, the nephews are not the same, then there my daughter, I had never bothered her, I told her to save her and I know, but sometimes, I would give her money and not bother her to say “I need help around the house,” nothing, because we managed well, and... but then I started to get anxious (...) now I am working only to afford those medications and tests” (Josefina, low-class district, 95 years old, satisfaction with retirement: 0.2)

In general, the conditions of “working by choice” and “high-class district” are associated. The second pathway seems a good example of what had been defined in this article as a “trajectory of constraint,” while the third pathway is nearer to “trajectories of opportunities.”

Necessary Conditions for Accomplish Satisfaction with Retirement

Other conditions appear to be necessary conditions for achieving satisfaction with retirement. As indicated, this refers to conditions that must exist to obtain a particular outcome, although they are not

Table 4. Necessary conditions for satisfaction with retirement I.

No.	Variable name	Coverage	Consistency
3	Living with someone else	0.408	0.835
4	Someone helping with domestic tasks	0.435	0.890
8	Age	0.558	0.756

Note: For interpretation, a consistency between 0.8–1.0 is high; 0.6–0.7 is modest; and the rest are low. Bold values shown a high level of consistency.

Table 5. Necessary conditions for satisfaction with retirement II.

No.	Variable name	Coverage	Consistency
11	Completion of school education	0.510	0.803
13	Not having had children prior to 18 years of age	0.474	0.858
14	Having had both parents in childhood	0.469	0.937

Note: For interpretation, a consistency between 0.8–1.0 is high; 0.6–0.7 is modest; and the rest are low. Bold values shown a high level of consistency.

necessarily sufficient to achieve it. So then, there were 21 conditions identified as necessary. Next, I will take a close look at each one and explain the associated results.

The conditions measured are living with someone else, having someone who helps in the domestic tasks, the person's age, whether schooling has been completed or not, not having children prior to 18 years of age, having had both parents in childhood, and all the support that ego has received and given; plus, density, IQV, and constrains. In Appendix 1 are all the conditions incorporated into the QCA (Table 4).

The first three conditions are an aspect of the daily life of older people. Among these three, the first two have a high association as necessary conditions: living with at least one person and having at least one person who helps with the domestic daily tasks. This makes sense, as the first could make older people feel less isolated and ensure a greater availability of support, both psychological and physical, for them. Besides, the second condition is a practical help that would be of immense assistance to older people in discharging their basic day-to-day tasks and functions, and consequently, the availability of such an assistance would imbue them with positivity day after day.

The third condition is a modest association: having a lesser age. This condition largely takes values between 0 and 1. However, among those

characterized by a 0 value, there was a 60-year-old who was the youngest among the participants, and similarly among those characterized by a 1 value, there was an individual aged >95 years, who was the oldest in the sample. Then, this condition may also be associated with the health quality of the older person (Table 5).

Five conditions were added concerning the past of the older people interviewed to see if they still have some effect on their present. It appears that some of them are highly associated with necessities. Specifically, three of them seem to be necessary to achieve the outcome: having completed a school education, not having had children prior to 18 years of age (in Chile, 18 years represents the age of attaining majority), and having had both parents alive and present during their childhood. On the other hand, satisfaction of either of the following two conditions did not appear necessary: being born in the capital and commencing employment after 18 years of age. Interestingly, these long-term conditions appear to be relevant even today (Table 6).

Each support that ego received from others was measured, and some of them appear to be necessary for their SSN. The most important one could be not receiving any negative interaction and making sense of the literature. Nevertheless, on the other hand, those ties create tension in their networks and daily life (see Patricio's case in the forthcoming pages).

Table 6. Necessary conditions for satisfaction with retirement III.

No.	Variable name	Coverage	Consistency
16	Ego received intimate interaction	0.497	0.756
18	Ego received feedback	0.503	0.677
19	Ego received physical assistance	0.565	0.748
20	Ego received positive interaction	0.542	0.661
21	Ego has not received negative interaction	0.437	0.843

Note: For interpretation, a consistency between 0.8–1.0 is high; 0.6–0.7 is modest; and the rest are low. Bold values shown a high level of consistency.

Table 7. Necessary conditions for satisfaction with retirement IV.

No.	Variable name	Coverage	Consistency
22	Ego gives material aid	0.568	0.724
23	Ego gives intimate interaction	0.429	0.638
25	Ego gives feedback	0.476	0.630
26	Ego gives physical assistance	0.556	0.622
27	Ego gives positive interaction	0.526	0.646
28	Ego does not give negative interaction	0.411	0.874

Note: For interpretation, a consistency between 0.8–1.0 is high; 0.6–0.7 is modest; and the rest are low. Bold values shown a high level of consistency.

Besides, receiving intimate interactions, feedback, physical assistance, and positive interaction seem necessary for the outcome. Interestingly, receiving material aid appears neither as sufficient and nor essential, which makes me wonder if the older people interviewed value their relationship more than the pragmatic money they have during retirement (Table 7).

As mentioned in the literature review, the studies about the aging population networks had concentrated on what they received rather than what they gave. In that sense, incorporating those in the analysis is an innovation; however, some conditions appear necessary for the outcome. Especially in the case of two: First, that the ego does not negatively affect their alters. Second, the ego provides material aid to at least one person in his/her SSN. The latter is only relevant when the ego gives it, as it did not appear applicable the other way round.

The negative ties in the SSN are a powerful experience for any person. The results indicated that not having any negative links, from ego and/or alter, is central to the interview. Even though the

person has a lot of different types of social support in their network, the experience of having one negative appears to shadow all of them. That could be seen in the case of Patricio. Every time he got the opportunity to complete the interview, he went back to talk about his relationship with his daughter. In his own words, it would be described as follows:

“and my daughter no... she only thinks on spending and spending money... it makes me angry... she treats me so bad... she said one day “I don’t love you,” and with bad words... she is a whore.... and other days she said to me “father” (with a sweet voice) ... and if I want to say no, but it is difficult for me, because she gets mad with me [...] she used to tell me a lot of bad words... she makes me cry and laugh with the things that she said” (Patricio, middle-class district, 75 years old, satisfaction with retirement of 0.1)

His SSN shows the presence of other types of support. For example, he recognized having a good group of friends with whom he used to have feedback and fun moments, playing a “domino” game with some

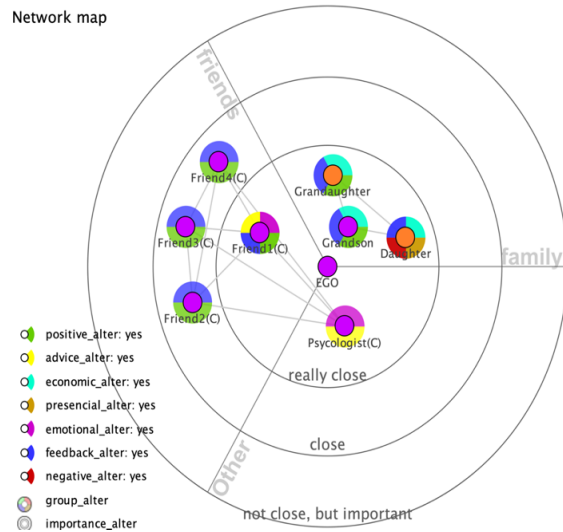


Figure 2A: social support that Patricio derives from his alters.

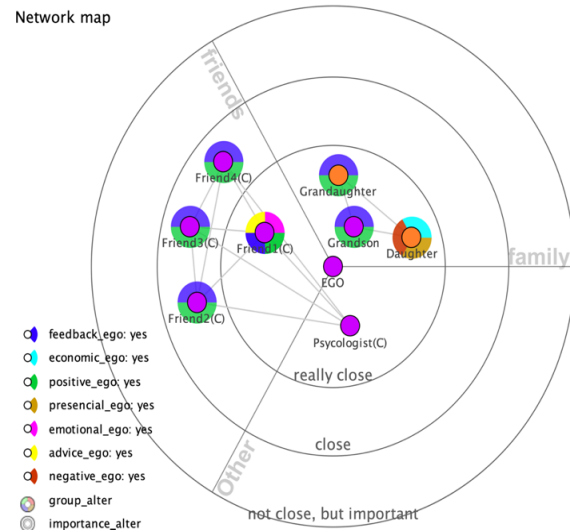


Figure 2B: social support that Patricio provide to his alters.

Figure 2: Patricio's SSN. SSN, social support network.

Table 8. Necessary conditions for satisfaction with retirement V.

No.	Variable name	Coverage	Consistency
31	Density SSN	0.518	0.740
32	Density SSN no kin	0.451	0.613
33	IQV SSN	0.493	0.803
42	Constrain SSN	0.533	0.786

Note: For interpretation, a consistency between 0.8–1.0 is high; 0.6–0.7 is modest; and the rest are low. Bold values shown a high level of consistency.

IQV, Index of Qualitative Variation; SSNs, social support networks.

of them. To illustrate, Figures 2A and 2B demonstrate, respectively, the social support Patricio derives from his alters and that which he provides to them. It could be appreciated that the negative ties as a number are tiny; however, taking into account the narratives behind these, there is so much more information that can be obtained for analysis (Table 8).

The last four conditions are measures calculated using the SNA literature. Density takes values between 0 and 1; then, closer to 1 means a denser network. In this case, it appears that having a denser SSN is necessary for satisfaction with retirement. That association is more substantial, especially when density is calculated incorporating the kin relationships, although the calculation not incorporating the same still seems necessary. A

higher IQV and having high constraints on their SSNs appear to be necessary for retirement satisfaction.

Discussion

Gender was one condition that appeared to be neither sufficient nor necessary. A classic study by Antonucci and Akiyama (1987) found critical differences in the way older individuals experienced their SSNs, which were ascertained to be a function of the gender of the person. In this article, there were no differences by gender, although gender variances were found in the frame of the same research (Ortiz, 2021; Ortiz & Bellotti, 2021).

Efficiency is a measure created by Burt (1995, 2000) to better understand a network's structure. In

that sense, this concept shows the relative impact that ego could obtain from his/her SSN (McCarthy et al., 2019). It appears that this efficiency in the network is sufficient for the outcome. Furthermore, a good understanding of the precise impact that the ego's SSN creates on it, as well as the degree and longevity of this impact, would be helpful in identifying the relevance of the ego's relationships in contributing toward the older's satisfaction with this period of life.

Another modest sufficiency relationship was the reciprocity of material aid and intimate interaction. Reciprocity has been studied in some social network research investigating the social support structures of older people, and such research elements have ascertained that the same are highly relevant for them (Antonucci & Akiyama, 1987). Besides, a modest sufficiency relationship was found between the outcome and the reciprocity of having physical assistance. This last type of support had not been considered too much in social support studies of older people; however, it used to be studied deeply in qualitative research. González (2018) had established the importance of care and help with everyday tasks for people in general, but especially for the aging population.

Reciprocity involves trust in another person and a closer relationship than others (Torche & Valenzuela, 2011). Those reciprocity conditions are crucial for this research, mainly because they are related to the Global South literature. Lomnitz (1971) already identified the relevance of Chile's people to reciprocity. In that sense, the fact that reciprocity of material aid, intimate interaction, and physical assistance are sufficient conditions agrees with what has already been stated by Lomnitz.

A higher IQV appears to be necessary for retirement satisfaction. This measured the level of dispersion in the ego network (Crossley et al., 2015). In this case, it calculates the diversity of dimensions present in the network. Therefore, a higher IQV in this context means that ego received, from at least one person, all the six different support dimensions (without considering their negative interactions). Supposing that we comprehend the SSN as a multidimensional concept (Song et al., 2011), these results would, in such a scenario, make sense, as they highlight the relevance of having all the diversity of dimensions existing in the support networks.

Finally, having high constraints on the older people's SSNs seems relevant too. This last condition means that an SSN with fewer structural holes would be necessary to reach retirement satisfaction. In that sense, the ego had to invest less time and energy to gain relationships that gave the impression of

being beneficial. Accordingly, Cornwell et al. (2009) established that older people are very well connected by extensive, kin-centered, and dense networks, allowing them to have better access to resources that would enable them to cope with everyday life. Also, there is evidence that having a well-connected network and social participation affected loneliness positively (Kemperman et al., 2019; Tomas et al., 2019). So then, the findings here tend to suggest the same.

Conclusions

As a brief summarization, it could be said that some conditions are sufficient, and others are necessary to achieve satisfaction with retirement. It seems that the following are sufficient conditions: having one of the highest amounts of pensions of the sample (closer to >\$900,000), not having a chronic disease (during the majority of their lives), working by choice during retirement (not a necessity), and living in a high-class district (at the moment of the interview). Concerning SSNs, it seems like having a bigger size (with or without kin relationships) is an efficient and contributes toward reciprocity of material aid, intimate interaction, and physical assistance. Besides, as one of the main results, four sufficiency pathways have been identified to achieve satisfaction with retirement. All of them are coherent. The necessary conditions are more; they all could be divided into everyday life, some from their past, and composition and structure of their SSNs.

There is a pattern that appears while looking into those conditions that are sufficient, in contrast with those that are necessary. The first ones were mainly related to socioeconomic and residential conditions; meanwhile, those conditions concerning social support and daily personal life were more present as necessary. These results could not only open up the possibilities for many different hypotheses in this specific avenue of research, but also enable their comparison with other, similar ones employed in parallel studies dealing with the same topic. For example, it could be hypothesized that there is a segmentation based on the availability of economic resources. It could be also identifiable that support resources work as a real alternative to the lack of economic resources; this may be useful when it comes to considering the formulation design that needs to be adopted for public policies.

The spectrum of conditions that could be taken into account is enormous. Accordingly, this study's limitation would be that it is concentrated in the conditions selected here. However, many others

could be added. For example, future research could evaluate specific conditions accordingly with different types of chronic disease. Besides, this condition could be mediated by other different conditions, requiring research to concentrate only on the health of older people's lives.

To conclude, this article highlighted the understanding of satisfaction with retirement as a multidimensional notion. In other words, it has been established that, with regard to the case of older people in Santiago, Chile, the different conditions studied within the present research demonstrate significance at the moment of defining their satisfaction with retirement. Among these conditions, some concerned the current situation of the older people, while others pertained to the older people's childhood and other relational aspects. As mentioned before, this concept of satisfaction with retirement has been measured from a macrolevel perspective and accordingly with the amount of money they received as a pension. Thus, we may conclude that the present study has advanced the knowledge in the field in terms of broadening the idea of satisfaction with retirement, as it has been demonstrated how relevant other aspects of this idea are: conditions of daily life during retirement, aspects of childhood, and relational conditions of the older people's SSNs.

For future research aiming to make an advancement on the knowledge pertaining to these aspects, there are certain areas that may be interesting to first take up for exploration. First, the relevance of the neighborhood in relation to the SSN is an area largely studied by many researchers from the network's community. Second, a comparison with other contexts from the region, or further away, would render it possible and necessary to achieve better public policies focused in and around this topic – especially considering that this method of QCA is suitable for comparing organizations, countries, and policies.

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Conflict of Interest

The authors declare none.

Ethical Approval

This research was approved by the Ethics Committee of The University of Manchester, in October 2019.

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Appendix 1: Codification of the Conditions in QCA

AMOUNTMONTH (Fuzzy)	Amount of money (in Chilean peso) that EGO received each month	0: Absence of money; 0.1: \$0–\$99,999; 0.2: \$100,000–\$199,999; 0.3: \$200,000–\$299,999; 0.4: \$300,000–\$399,999; 0.5: \$400,000–\$499,999; 0.6: \$500,000–\$599,999; 0.7: \$600,000–\$699,999; 0.8: \$700,000–\$799,999; 0.9: \$800,000–\$899,999; 1.0: >\$900,000.
HEALTH (Crisp)	Whether the participant has a chronic disease now	0: Have a chronic disease; 1: Does not have a chronic disease
HOUSE (Crisp)	Whether the participant lives with someone or not	0: Living alone; 1: Not living alone
DOMESTIC (Crisp)	Whether the participant has at least one person who helps him/her with domestic tasks	0: Nobody to do domestic work; 1: Have someone to do domestic work
WORKNOW (Fuzzy)	Whether the participant works or not	0: Currently working, but not for choice; 0.6: Not working; 1: Currently working, but for choice
PARTNER (Crisp)	Whether the participant has his/her partner alive	0: Partner not alive; 1: Partner alive
DISTRICT (Fuzzy)	Where the participant lives	0.1: Quinta Normal (low class); 0.6: La Reina (middle class); 1: Vitacura (high class)
AGE (Fuzzy)	Age of the participant	0: <60 years; 0.1: 60–63 years; 0.2: 64–67 years; 0.3: 68–71 years; 0.4: 72–75 years; 0.5: 76–79 years; 0.6: 80–83 years; 0.7: 84–87 years; 0.8: 88–91 years; 0.9: 92–95 years; 1: >95 years
GENDER (Crisp)	Gender of the participant	0: Woman; 1: Man
BIRTH (Crisp)	Where the participant was born, whether in the capital or not	0: Not born in the capital; 1: Born in the capital
SCHOOL (Crisp)	Whether the participant has completed schooling	0: Not finished schooling; 1: Finished schooling
WORKCHILD (Crisp)	Whether the participant started working before attaining 18 years of age	0: Started working before have 18 years old; 1: started working after have 18 years old
CHILDREN (Crisp)	Whether the participant had children prior to attaining 18 years of age	0: Had children before 18 years of age; 1: Have not had children prior to 18 years of age
PARENTS (Fuzzy)	Whether the participant had both or one parent alive and in contact with him/her, during their childhood	0: Did not have both parents; 0.6: Had only one parent alive in childhood; 1: Had both parents alive in childhood
SSEGO1 (Fuzzy)	Number of people who give material aids to ego	0: No one; 0.3: One person; 0.7: Two people; 1: Three or more people
SSEGO2 (Fuzzy)	Number of people who give intimate interaction to ego	0: No one; 0.3: One person; 0.7: Two people; 1: Three or more people
SSEGO3 (Fuzzy)	Number of people who give advice to ego	0: No one; 0.3: One person; 0.7: Two people; 1: Three or more people
SSEGO4 (Fuzzy)	Number of people who give feedback to ego	0: No one; 0.1: One person; 0.2: Two people; 0.3: Three people; 0.4: Four people; 0.5: Five people; 0.6: Six people; 0.7: Seven people; 0.8: Eight people; 0.9: Nine people; 1: ≥10 people
SSEGO5 (Fuzzy)	Number of people who give physical assistance to ego	0: No one; 0.3: One person; 0.7: Two people; 1: Three or more people

SSEGO6 (Fuzzy)	Number of people who give positive interaction to ego	0: No one; 0.1: One person; 0.2: Two people; 0.3: Three people; 0.4: Four people; 0.5: Five people; 0.6: Six people; 0.7: Seven people; 0.8: Eight people; 0.9: Nine people; 1: ≥ 10 people
SSEGO7 (Fuzzy)	Number of people who give negative interaction to ego	0: Three or more people; 0.3: Two people; 0.7: One person; 1: No one
SSALTER1 (Fuzzy)	Number of people who give material aids to ego	0: No one; 0.3: One person; 0.7: Two people; 1: Three or more people
SSALTER2 (Fuzzy)	Number of people who give intimate interaction to alter	0: No one; 0.3: One person; 0.7: Two people; 1: Three or more people
SSALTER3 (Fuzzy)	Number of people who give advice to alter	0: No one; 0.3: One person; 0.7: Two people; 1: Three or more people
SSALTER4 (Fuzzy)	Number of people who give feedback to alter	0: No one; 0.1: One person; 0.2: Two people; 0.3: Three people; 0.4: Four people; 0.5: Five people; 0.6: Six people; 0.7: Seven people; 0.8: Eight people; 0.9: Nine people; 1: ≥ 10 people
SSALTER5 (Fuzzy)	Number of people who give physical assistance to alter	0: No one; 0.3: One person; 0.7: Two people; 1: Three or more people
SSALTER6 (Fuzzy)	Number of people who give positive interaction to alter	0: No one; 0.1: One person; 0.2: Two people; 0.3: Three people; 0.4: Four people; 0.5: Five people; 0.6: Six people; 0.7: Seven people; 0.8: Eight people; 0.9: Nine people; 1: ≥ 10 people
SSALTER7 (Fuzzy)	Number of people who give negative interaction to alter	0: Three or more people; 0.3: Two people; 0.7: One person; 1: No one
SIZE	Number of alters in the network	0: 0; 0.1: 1 or 2; 0.2: 3 or 4; 0.3: 5 or 6; 0.4: 7 or 8; 0.5: 9 or 10; 0.6: 11 or 12; 0.7: 13 or 14; 0.8: 15 or 16; 0.9: 17 or 18; 1: ≥ 19
SIZENOKIN	Total number of alters having no kin in the network	0: 0; 0.1: 1; 0.2: 2; 0.3: 3; 0.4: 4; 0.5: 5; 0.6: 6; 0.7: 7; 0.8: 8; 0.9: 9; 1: ≥ 10
DENSITY	Social network measure of the density of the complete network	This measure takes values between 0 and 1.
DENSITYNOKIN	Social network measure of the density of the network without kin	This measure takes values between 0 and 1.
IQV (Fuzzy)	Social network measure of heterogeneity in the diversity of the types of support received by ego	This measure takes values between 0 and 1.
EFFICENCY	Social network measure of the efficiency of the network	This measure takes values between 0 and 1.
Mutuality1	Social network measure of the reciprocity of the material aids network	This measure takes values between 0 and 1, by min-max normalization. The minimum value here was 0 and the maximum was 4.
Mutuality2	Social network measure of the reciprocity of the intimate interaction network	This measure takes values between 0 and 1, by min-max normalization. The minimum value here was 0 and the maximum was 6.
Mutuality3	Social network measure of the reciprocity of the advice network	This measure takes values between 0 and 1, by min-max normalization. The minimum value here was 0 and the maximum was 3.
Mutuality4	Social network measure of the reciprocity of the feedback network	This measure takes values between 0 and 1, by min-max normalization. The minimum value here was 0 and the maximum was 12.

Mutuality5	Social network measure of the reciprocity of the physical assistance network	This measure takes values between 0 and 1, by min–max normalization. The minimum value here was 0 and the maximum was 6.
Mutuality6	Social network measure of the reciprocity of the positive interaction network	This measure takes values between 0 and 1, by min–max normalization. The minimum value here was 0 and the maximum was 11.
Mutuality7	Social network measure of the reciprocity of the negative interaction network	This measure takes values between 0 and 1, by min–max normalization. The minimum value here was 0 and the maximum was 3.
Constrainnor	Social network measure of the aggregate constraints of the network	This measure takes values between 0 and 1.

IQV, index of qualitative variation; QCA, qualitative comparative analysis.

Appendix 2: Conditions used in each model of QCA

Section	Conditions	Models				
		1	2	3	4	5
Dependent variable	SATISFPENSION (Fuzzy)	X	X	X	X	X
Conditions from the present situation of the people interviewed	AMOUNTMONTH (Fuzzy)	X				X
	HEALTH (Crisp)	X				X
	HOUSE (Crisp)	X				X
	DOMESTIC (Crisp)	X				X
	WORKNOW (Fuzzy)	X				X
	PARTNER (Crisp)	X				X
	DISTRICT (Fuzzy)	X				X
	AGE (Fuzzy)	X				X
	GENDER (Crisp)	X				X
Conditions from the past of the people interviewed	BIRTH (Crisp)		X			X
	SCHOOL (Crisp)		X			X
	WORKCHILD (Crisp)		X			X
	CHILDREN (Crisp)		X			X
	PARENTS (Fuzzy)		X			X
Conditions from the SNA – relational approach	SSEGO1 (Fuzzy)			X		X
	SSEGO2 (Fuzzy)			X		X
	SSEGO3 (Fuzzy)			X		X
	SSEGO4 (Fuzzy)			X		X
	SSEGO5 (Fuzzy)			X		X
	SSEGO6 (Fuzzy)			X		X
	SSEGO7 (Fuzzy)			X		X
	SSALTER1 (Fuzzy)			X		X

Section	Conditions	Models				
		1	2	3	4	5
Conditions from the SNA – relational approach	SSALTER2 (Fuzzy)			X		X
	SSALTER3 (Fuzzy)			X		X
	SSALTER4 (Fuzzy)			X		X
	SSALTER5 (Fuzzy)			X		X
	SSALTER6 (Fuzzy)			X		X
	SSALTER7 (Fuzzy)			X		X
	DENSITY				X	X
	DENSITYNONKIN				X	X
	IQV (Fuzzy)				X	X
	EFFICENCY				X	X
	RECIPROCITY1				X	X
	RECIPROCITY2				X	X
	RECIPROCITY3				X	X
	RECIPROCITY4				X	X
	RECIPROCITY5				X	X
	RECIPROCITY6				X	X
	RECIPROCITY7				X	X
	Constrainnor				X	X

IQV, index of qualitative variation; QCA, qualitative comparative analysis; SNA, social network analysis.

Appendix 3: Conditions of the Social Network Analysis

Size of the Social Support Network

This concept refers to the number of alters in the ego's network. This study uses the size of the complete network (without the ego) by each type of support. This measure allows for a better understanding of the number of influential people who are active resources of possible help from the ego's perspective. The model was formed with and without kin relationships, considering the relevance of family obligations (Szinovacz et al., 2001). In line with the literature, the size could refer to the extent of the person's network. An extensive network could be interpreted as the person being well-connected in society. Cornwell et al. (2009) found that an aging population is generally characterized by extensive networks, which suggests well-connectedness. On the other hand, Lubbers et al. (2020) mentioned that having an extensive network is not necessarily related to the level of support received. Furthermore, there has been an extended discussion about how people in poverty tend to have smaller networks, which could be interpreted as having less access to resources (Campbell et al., 1986; Marques, 2017). The calculation of this measurement was the total number of alters that has given or received at least one support from the alters nominated.

Density

This measure refers to the density of a network without the ego. It is calculated by "the number of ties between alter divided by the number of possible ties" (Crossley et al., 2015, p. 82). It was calculated for the complete network and then again without including kin. Previous studies have shown that older people tend to have dense networks, a product of the time passed, making those relationships close. However, there is currently no

consensus on this. Cornwell et al. (2008) argued that older people have large, dense networks. Research into networks in the context of poverty has shown that people from a lower class tend to rely on dense networks concentrated around the family. However, more recent research has found that this is not always the case (Lubbers et al., 2020). The calculation to obtain density consisted of using the undirected network. Its multiples the size (n) with the size minus 1 ($n-1$); afterward the obtained result is divided by 2. In other words: $n(n-1)/2$.

Index of Qualitative Variation

The IQV establishes the level of dispersion in an ego's network (Crossley et al., 2015). This research was constructed to measure the diversity of the dimensions of support received by the ego. In addition, it is a normalization of Blau's index, which is a valuable measure that enables comparison (Borgatti et al., 2013). Lubbers et al. (2020) mentioned that having a diverse support network could mean accessing different resources. In this study, the IQV was calculated based on how many alters had characteristics specific to a particular group. In this case, there were six groups (one per dimension of support), and each group was formed of the people who gave the ego that dimension of support. Therefore, IQV shows how diverse the dimensions of support were that the ego received at the time of the interview. Thus, its calculation is made from the Blau index (H):

$$H = 1 - (P_1)^2 - (P_2)^2 - \dots - (P_r)^2$$

$$IQV = H/(1-1/r)$$

It should be considered that (P_1) is the proportion of alters in group 1, while (P_2) is the proportion of alters in group 2; and P_r is the proportion in group r according to the number of categories considered in the variables of composition. The definition of the types of relationships depends on the researchers, and therefore it is necessary to explain them clearly. The r -value is equal to the number of types of ties in the network, such as "close friends" or "classmates."

Efficiency

This measure was proposed by Burt (1995) and is obtained using the size and average centrality of a network. Compared to the size, the network's efficiency gives us information about non-redundant contacts in a network; in other words, the efficiency level is measured by how many non-redundant contacts an ego has. Having more non-redundant contacts is interpreted by the same author as the ego having more access to new information and maybe new resources to gain support from, which could be the same as having more support. In other words, it indicates the "relative impact that [an] ego can obtain from his or her network" (McCarty et al., 2019, p. 169). To calculate this measure, Burt measures the level of redundancy in the network, estimating to which extent alter A is redundant with the other alters. This research was carried out without including the ego, to understand the structure of the networks analyzed. In general, and from previous studies of older people, no efficiency results were found. However, this measurement helps to establish more information about the structure of older people's networks, in this case. Again, there is little agreement on their networks' average size and density, and so it is worth measuring the efficiency as another indicator of size. In computing these indicators, it is considered that in the determination of effective size ego is excluded from the measurements, and n is the total size of the network; then:

$$\text{Effective size} = n - (\text{average centrality of alters without ego})$$

$$\text{Efficiency} = (\text{effective size})/n$$

Constraint

According to Burt (2000), a constraint is about gaining a sense of the network's redundancy. In other words, it is the concentration of the ego's time in one connected network, considering the amount of time they invest in their alters and the amount of time their alters invest in one another. Everett and Borgatti's (2020)

proposed calculation method was considered here. In the 1990s, Espinoza (1999) studied a similar case, as this study focuses only on poor neighborhoods in Chile. In his research, he recognized that networks with highly connected alters helped exchange of resources faster, producing a short-term solution to the context of an economy of survival. This result is something that has been found in other contexts, especially in Latin-American countries. Furthermore, there is evidence that this kind of network improved access to resources and social participation and helped combat loneliness (Cornwell et al., 2009; Kemperman et al., 2019). Therefore, high levels of constraint are expected to be found in lower-class districts compared to higher-class districts. His calculation is the summarization of how much constraint each alter delivers to the ego.

Reciprocity

This measure establishes how many relationships in an ego's network are mutual. For this calculation, the total number of reciprocated ties were divided by the total number of ties (Borgatti et al., 2013). This was calculated for each supported network and normalized proportionally to the number of mutual ties in each specific network. As outlined in the literature on the Global South described in the literature review, reciprocity is crucial to understanding Chilean people's personal networks. This relevance of the reciprocity ties has been also found in the case of older people (Antonucci & Akiyama, 1987). For example, Lomnitz (1977) mentioned that a high level of "confianza" or trust between ego and those alters creates reciprocity. Similarly, Torche and Valenzuela (2011) highlighted the same and added that these ties include shared memories. Therefore, reciprocity in the support network is expected to prove crucial for the participants of this study. We may thus understand that the larger the number of results, the greater the number of reciprocated links constituting the network. Reciprocity is measured with a division between the total number of mutual links in the network, and the total number of links.