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The Persistence of Social Stratification? A Life Course Perspective on Poverty in Old-Age in Switzerland[1]

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1 Introduction

This paper focuses on poverty among the older population in one of the wealthiest countries in the world: Switzerland. These two elements, a focus on that specific life-stage represented by old-age on the one hand, and the geographical and institutional context of Switzerland on the other, provide the fundamental setting for this paper. For most people living in Switzerland, reaching the age of 65 signifies the entrance into retirement. When focusing on this particular population – the retired or "older" population – the effects of selection should be kept in mind: Due to the higher mortality of people in lower socioeconomic groups, this means studying a population of survivors, especially when considering the higher age-groups (Oris and Lerch 2009). Most importantly, reaching retirement also implies a shift in terms of income sources. Usually, a retired person's income no longer depends on work but turns towards other sources. In most cases, this entails a form of pension. With this shift, old-age poverty is different from that in the active population: Rather than a momentary life-situation, it can be regarded as a permanent, cumulative result for a person living in a particular country in a given historical period, during which this person has built financial reserves within the corresponding socioeconomic and institutional structures. Personal choices in one's biography and specific events – like stopping to work to take care of one's children, or a divorce, for instance – may have a strong impact on financial resources in retirement. A growing body of literature posits that today these trajectories and events might be the root causes for poverty (Vandecasteele 2011), thus opposing the traditional idea that poverty is the result

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of processes of social stratification. It reflects the view that in a postmodern world people's lives have become more "liquid" (Bauman 2013), meaning they have become less structured and predictable, less standardized, less protected by traditional institutions and that therefore, risk and uncertainty are believed to be the most influential aspects in today's western industrialized societies (Beck 1992).

The institutional setting of the Swiss welfare state is quite unique with its so-called three-pillar structure (see part 2.4 in the theoretical part of this paper for a detailed presentation). According to Bonoli and colleagues (2007) it is often cited as an example of a well-performing system among OECD countries. It is, however, also the result of a series of cohorts having spent most of their professional life in an economic upswing (Wanner and Gabadinho 2008). At the same time, there is evidence that the Swiss system also has its weaknesses. A number of studies document both the persistence and significance of old-age poverty in Switzerland. According to the Swiss constitution, the most central task that old-age social welfare and the pension system have to carry out is to prevent people from falling into poverty and to enable an existence in decent living conditions. That objective is not achieved. Estimates on current poverty rates among retired people are highly dependent on the data sources and methods used and range from 10% up to 20%. These numbers show that old-age poverty in Switzerland is a phenomenon that is by no means negligible and that an analysis of its underlying dynamics and causes needs to be a matter of importance on the political agenda. Given this context, this paper focuses on the root causes of poverty along the life course and in this respect, the findings in this paper could help to shed light on the functioning – or malfunctioning – of Western welfare states in general.

We are aware of the numerous objective and subjective dimensions which are associated with low levels of economic well-being and their interaction. Poverty, obviously, is a multidimensional phenomenon (Pilgram and Seifert 2009; Henke 2013). However, we do not consider this ongoing debate in our paper and employ a simple absolute poverty-line approach. We aim to test three theories that have been brought forward linking poverty and the life-course: Critical life period (corresponding closely to a traditional social stratification framework), accumulation of (dis)advantages, and biographization.

The structure of the paper is as follows: In the next section, these three theories are discussed, emphasizing their relevance for the older population and in the context of the Swiss institutional setting. In the second section we present our data and methods. Section three shows the results of six regression models, whereas each focuses on one hypothesis that is derived from the theoretical part. The fourth and final section concludes with a final discussion which focuses on policy implications of our findings, the limitations of our contribution and suggestions for further research.

2 The construction of poverty and the life course

2.1 Two frameworks for the conceptualization of poverty: Social stratification versus life events

A significant number of theories have been developed to explain income inequalities and they can be generally placed into two main frameworks: The social stratification framework emphasizing *social structures* on the one hand, and a more *event based* framework on the other hand. Traditionally, poverty research has been relying on a social stratification framework which has its roots in the Marxist tradition (as described in Giddens 1971).[2] It describes the global processes that maintain and reproduce a society with its institutions. Thus, it explains how inequalities, including poverty, are reproduced and reinforced (Grusky 2001). Recently, poverty research has seen a shift towards a new event-based framework that has been termed life course perspective (Vandecasteele 2011), biographization (Leisering and Leibfried 2001) or individualization (Whelan et al. 2002; Layte and Whelan 2003) of poverty. Proponents of this second framework posit that poverty can no longer be analyzed solely from a social stratification perspective but that it has become much more dependent on certain life events and transitions – such as having a child or a divorce, for instance. This approach is founded on the idea that vulnerability to life events or life-transitions increases with the process of modernization and the dissolution of traditional institutions such as the family (Bernardi et al. 2008) or traditional labor markets (Mills et al. 2006). Since these institutions have been crucial for the standardization of life courses (Kohli 2007), a number of authors argue that modern life-courses have become much more unstable, destandardized, individualized and generally characterized by a high degree of risk and uncertainty (Beck 1992). In such a context, some authors concluded that the risk of poverty is much more situated at the individual, rather than the structural level. For this reason the biographization hypothesis is often referred to as the "individualization thesis" (Layte and Whelan 2002, 213).

2.2 Mechanisms of poverty construction along the life course: Critical life period, cumulative (dis)advantages and biographization

To test the interrelation between the event-based framework and the stratification framework regarding poverty, we suggest that there are generally three mechanisms and correspondingly, three relevant bodies of literature. Their situation with regard to the first or the second of the aforementioned frameworks, however, is not always indisputable and they are in many respects more complementary than opposing.

2 To be precise, this statement refers more to the Anglo-Saxon tradition. In the French-speaking tradition with Paugam (1991) and Castel (1994), poverty is often studied in a more holistic fashion using concepts such as exclusion, emphasizing the multitude of implications of poverty – or, in these author's terms, *precariousness* – for example on social ties or on physical health.

A first body of literature emphasizes the importance of infancy and childhood as *critical life periods*. Epidemiologists, psychologists and sociologists demonstrated the importance of these phases and showed that they heavily affect the trajectories in adulthood (Smith 2003; Grossmann et al. 2006). Initial characteristics, acquired at birth or during the first period of socialization, have long-term impacts on the positions individuals might reach during their life. This theory is therefore practically overlapping with the social stratification idea and merely emphasizes the *temporal* significance of the earliest period in the life course. It explains intergenerational social reproduction of status (Grusky 2001; Nolan and Marx 2009). Evidence for this approach is given by Nolan and Marx in their contribution to the *Oxford Handbook of Economic Inequality:* "The types of individual or households seen as at particular risk [for poverty] include those with low levels of education and skills, the low paid, (…), people with disabilities, (…) ethnic minorities, migrants and refugees" (Nolan and Marx 2009, 326). These key groups identified by Nolan and Marx can be attributed to levels of education (i. e. human capital) that are acquired at the earliest stage of the life course and that, as a result, lead to different life paths and professional careers.

A second body of literature is given by the theory of cumulative (dis)advantages. It aims at explaining the interrelation between social status and its dynamics along the life course. Hence, it can be considered as a mechanism that explains social stratification dynamics and again, stresses the importance of the early life stages. Dannefer (2003) suggests that minor initial differences ultimately result in increased systematic inequalities between individuals due to processes of accumulation over the life course. According to this approach, heterogeneity is at its peak among the "young old" (Nelson and Dannefer 1992) but not necessarily among the "oldest old" because of the mortality selection that affects the frailest (Oris and Lerch 2009). The cumulative (dis)advantages approach became extremely popular during the last 10 or 15 years. However, "there is surprisingly little evidence for the cumulative process" and a "wide variety of model specifications remain completely untested" (Elder et al. in press, see also DiPrete and Eirich 2006; Ferraro 2011).

The third mechanism is the almost exclusively event-based conceptualization of poverty which has been described in the first part of this section as representing the counterpoint to the social stratification approach. For this body of literature, one of the key works is given by Leisering and Leibfried's (2001) publication in which they introduced the term "biographization" of poverty. In terms of connection with the life course, it can be said that there no longer exist discernible key periods, but that the risk of poverty is inherent all along the life course, since it relies on various poverty-triggering events (losing a job, divorce, losing a partner) that can occur in a highly varying manner.

It is unclear whether this biographization perspective fully applies to the situation of the older population. Above all, it is disputed whether most of the generations

who currently have reached the age of 65 and more have really been concerned by the processes of destandardization and individualization of their life courses – in fact, certain authors question these general tendencies altogether (Brückner and Mayer 2005). An assessment by Widmer and Ritschard (2009) showed that life courses in Switzerland remain quite traditional and standardized. Their comparison of birth cohorts revealed more subtle evolutions than dramatic changes.

Finally, it should be noted that for many authors (Layte and Whelan 2002; Vandecasteele 2011; Bak and Larsen 2014), the presented bodies of literature are not necessarily opposing but can be considered as complementary: It is imaginable that even in an uncertain, post-modern world the "traditional" dynamics of social stratification remain important while there is a rise of risk and vulnerability with the occurrence of specific life-events. Especially, the interactions between them can provide interesting insights. Working on Europe and old-age poverty, Vandecasteelle (2010; 2011) finds that childbirth has a higher poverty-triggering effect on lower social groups. In contrast, losing a job is a more universal risk for poverty and finally, in line with previous research, partnership dissolutions affect women more strongly than men. In the context of this article that looks at old-age poverty, such a framework combining these approaches is highly relevant since looking at this population cannot be disentangled from looking at individual's life courses and their influence on the situation in old-age (Cutler 2011). A meaningful application has to consider all three mechanisms as well as both, individual actions (agency) and social structures (Settersten and Gannon 2005).

2.3 Structural changes in the older population

One crucial element that is less taken into account in both the scientific and political debates is given by the fundamental historical transformations in the older population which are susceptible of modifying the dynamics of social reproduction and the patterns of poverty. As an illustration, in 1979, in the canton of Geneva and in Central Valais, 66.6% of the retired population (65–94) had a low level of education; in 2011 only 18.6% of the population remained with such a low human capital (Cavalli et al. 2013; Oris 2014). Furthermore, when the Swiss welfare state was established, divorce was almost non-existent. Its rise and with it the increase of lone parenthood created a growing concern for female poverty both in Switzerland (Falter 2009) and more globally in the Western world (Nolan and Marx 2009), but the debate remained centered on professionally active adults, not on the older population. In contrast, there has been much evidence identifying widows as being particularly prone to poverty in old-age (see for example Bonnet and Hourriez 2009) and they have been an issue on the political and scientific agenda in Switzerland in the 1990s (Lalive d'Epinay et al. 2000, 81). In summary, not only has the social structure of the older population changed with the arrival of new birth cohorts who

benefited from the extension and democratization of education in the second half of the 20th century, but with these changes have come new social realities.

Changed characteristics of the older population also have a significant impact on the institutions of old-age security in Switzerland. Driven, among other factors, by persistently high life-expectancies and low birth-rates, the structural changes in the aging population continue to put social welfare and pension regimes under pressure. Continuous adaptations of the current system have taken place to face the tensions between financial constraints and the fulfilling of social objectives. For example, the case of widows has been addressed in the 10th revision of the AVS[3], which has been accepted by a public voting in 1997 (Witschard 2006; Wanner and Fall 2012).

2.4 Old-age security institutions in Switzerland

The presented theoretical background has to be put into perspective, considering the context of Swiss institutions. In this part, the aim is to identify the mechanisms of accumulation and redistribution in a complex pension system with its three main components, governmental, professional, and private funds, which are usually referred to as the three pillars.

At its core is the first pillar, the AVS, the old-age and survivor's insurance. It is universal in that it provides every retired citizen who has spent his or her professional life in Switzerland with a basic pension varying from 1 200 CHF up to 2 450 CHF (in 2012). It is a system of solidarity between the rich and the poor in so far as people contribute a fix percentage of their income, whereas the resulting pension has a set upper limit. Without going into too much technical detail, it can be said that the amount of AVS pension is calculated based on the number of years over which a person has contributed to this system and the amount of the contribution (Bertozzi et al. 2005). The AVS pension is supposed to cover the "basic vital" living expenses and can thus be considered the main tool in poverty prevention – in fact, the amount of 2 450 CHF roughly corresponds to the poverty line in Switzerland.

To ensure a living standard that goes beyond basic needs, people have to rely on the second and/or third pillar. The second pillar is given by professional pension funds, is maintained by employers and is mandatory for all employed workers.[4] It is designed to complement the AVS and should permit people to maintain an adequate living standard, guaranteeing roughly 60% of the income before retirement. This pillar is based on the principle of "capitalization," meaning a sort of "mandatory saving." The amount of savings determines the amount of pension in old-age (Bertozzi et al. 2005). Hence, it is clearly a system that benefits higher paid positions, discriminates against low-paid workers and penalizes any sort of interruption of

3 The acronym AVS stands for «Assurance-vieillesse et survivants», which could be translated as "old-age and survivor's insurance." Survivors refers to widows and widowers.

4 With the exception of employed with a low level of activity. Also, independent workers contribute only on a voluntary basis.

formal work, for example in cases of family work, disability or unemployment. It was introduced as late as 1985, so that the interpretation suggested by the French sociologist Paugam (1991) is particularly fitting in this case: He posits that the oldest generations were more at risk of poverty, even if they had a complete professional career, simply due to the fact that the three-pillar system was only established in the middle of their professional life.

Finally, the third pillar depends purely on people's individual initiative and can include life insurances or other forms of financial investment (for a comprehensive overview over these sources see Pilgram and Seifert 2009).

Against the backdrop of this institutional framework, the first question to ask is how come there still remains a significant number of people who find themselves below the poverty line. Coherently with Paugam (1991) and Guggisberg et al. (2007), we suggest that this concerns people in higher age-groups who accumulated insufficient pensions and do not benefit from social welfare. In fact, if the amount of basic pension is compromised and the pension from other pillars is either non-existent or simply does not reach an amount that is beyond the absolute poverty line, an additional source of revenue exists called "complementary welfare" ("prestations complémentaires"). Basically, these are the equivalent of social welfare for the age of retirement. The maximum amount thereof enables to complement a minimal AVS pension towards its maximum of 2 450 CHF. per individual per month.[5] However, complementary welfare is not automatically available, and a person in need has to officially request such financial aid. This particularity offers another explanation for the persistence of old-age poverty. From a strictly institutional point of view the mere existence of poverty in old-age can be regarded as a failure of social security systems in Switzerland (Estes 1998; Estes 2011).

The institutional setting discriminates against lower social positions and diversions from "standard" work-trajectories. The mechanisms of capital accumulation, especially in the second and third pillars, clearly penalize specific social classes such as immigrants who did not pursue all of their professional careers in Switzerland. This is equally true for women who, especially in the older generations, often focused on informal work within the family. Hence, it is not a surprise that practically all studies on old-age poverty in Switzerland find women significantly more affected. The evidence found in Switzerland corresponds to the rest of Europe: Vlachantoni (2012) reviews the current literature on financial inequality and gender in older people and finds strong evidence for gender inequality all across the EU-27 countries. She posits that these differences result from "the combined effects of women's atypical life courses, which include interrupted employment records and periods of care provisions, and the fact that pension systems have generally been slow in mitigating 'diversion' from continuous and full-time working lives" (Vlachantoni 2012, 104). It has to be pointed out, that certain gender inequalities have been

5 For a comprehensive overview see http://www.ahv-iv.info.

addressed in the latest adaptation of the AVS system (10th AVS revision in 1997) which marked the introduction of mandatory contributions even for not formally active women, for example.

In light of this theoretical and institutional background, it appears crucial to create an in-depth assessment to determine the causes of poverty, especially with regard to their construction along the life course.

3 Data and modeling strategy

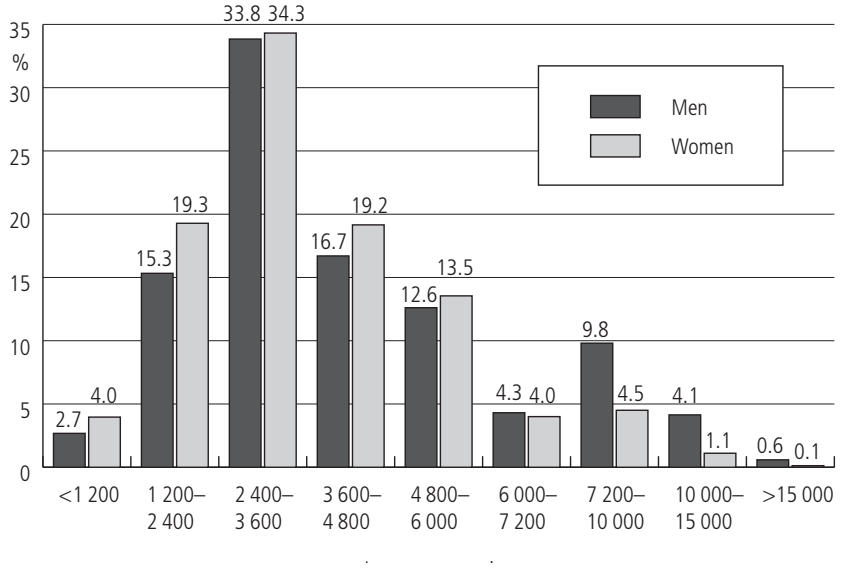
3.1 Dataset

This paper uses a dataset from an interdisciplinary survey on the living and health conditions of people aged 65 and older called Vivre-Leben-Vivere (VLV). It was carried out from May 2011 to March 2012 in five Swiss regions: Geneva, central Valais, Bern (Mittelland, Seeland, Oberland) both semi-cantons of Basel and Ticino (Ludwig et al. 2014; Oris 2014). Although not fully representative of Switzerland in a strict sense, this sample covers most of the Swiss Confederation's diversity in linguistic, cultural, political and socioeconomic terms. Specific to the VLV survey is its design as a stratified random sample, whereas stratification criteria were given by canton, sex and five-year age-groups to ensure sufficient respondents in all of the corresponding sub-populations. For our analyses we excluded people with cognitive and physical impairments who had been interviewed using a simplified version of the questionnaire (see Nicolet and Oris 2013) that did not include information on financial resources. The sample on which we perform our analyses consists of 3 080 individuals.

3.2 Poverty threshold

Our main variable of interest is self-rated monthly household income. This question consisted of a categorical scale in nine classes. Answers have been adjusted to household size using the "OECD modified" (Hagenaars et al. 1994) equivalence scales methodology. After this adjustment, the poverty threshold was set at 2 400 CHF per person. This amount corresponds to the maximum AVS pension or the amount that can be reached by supplementing incomplete first-pillar pensions with complementary welfare support. This threshold is supported by various other institutions. It is almost identical with the suggestions of 2 450 CHF by SKOS/CSIAS, the largest organization in the field of social welfare in Switzerland that each year issues their own calculations regarding poverty (SKOS and CSIAS 2013), as well as with the often used SILC (Statistics on Income and Living Conditions) definition of 60% of median income which was situated at around 2 500 CHF in 2012 (Guggisberg et al. 2012). Based on this threshold we established the binary variable poverty (poor vs. non-poor). A graphical representation of the initial distribution of income-classes

Figure 1 Distribution of incomes (adjusted to household size), 2011–2012



Note: The first two categories (< 1 200 and 1 200–2 400) make up the group of people who are in poverty.
Source: VLV data (see Ludwig et al. 2014).

can be found in Figure 1. All individuals that were situated in the first and second income classes (< 1 200, 1 200–2 400) were considered poor).

For our dataset, poverty rates are 17.9% for older men and 23.3% for women.[6] Our estimates thus are generally higher than what most other studies report. They are above the 13.3% rate cited by Nolan and Marx (2009) based on data for 2000 from the Luxemburg Income Study. To a lesser extent, the same applies to Guggisberg et al.'s (2012) findings of a 16.2% (based on SILC). Wanner and Gabadinho (2008), who analyzed fiscal data from Switzerland using a 60% median income level as a poverty threshold, find poverty rates between 9.9 and 15.4% which is equally lower than what we observe. However, our findings are fully consistent with OECD data from 2008, estimating poverty rates of around 18% to 21.6% that are cited in Pilgram and Seifert (2009, 8). These variations and incongruencies can generally be explained with the use of different data sources, temporal differences and poverty thresholds. It can thus be noted that poor people are not underrepresented in VLV, which is a positive finding given that surveys often fail to include the most vulner-

6 Since the VLV sample was stratified by five-year age groups from 65–69 until 90+, as well as by sex and cantons, we systematically use weights to create estimates concerning the whole population of 65+.

able (Nicolet and Oris 2013). This is crucial with regard to any interpretations on social policies drawn from our results.

We do take note of the fact that with this approach we follow the school of absolute-poverty definitions which is not undisputed. The alternative approaches of household-spending, relative poverty and material-deprivation, however, are not useful for our dataset, since the necessary variables that would enable to construct their corresponding indicators are missing. In defense of our approach it can be said that most studies that compare these indicators find high correlations among them (for an overview of these different concepts and methodologies, see Haveman 2001).

3.3 Modeling approach

Our theoretical framework proposes to study poverty opposing the social stratification framework with a biographization paradigm and testing three mechanisms of life course effects. On a technical level, we estimate several binomial logistic regressions (Cox and Snell 1989) to model the influence of covariate variables on our binary dependent variable which is poverty (living with less than 2400 CHF per month).

We start with a basic control model that includes only the variables of sample-stratification (sex, age and canton). In a second model, we aim to capture the effect of social stratification on poverty by using education as a proxy for social position (for a discussion on why education is a solid indicator thereof see Galobardes et al. 2006). Significant results for human capital as a predictor for poverty would therefore support the social stratification framework as well as the critical life period theory. We then created nested models testing for the effects of life-course variables, notably whether additional information captures and/or complements the initially observed educational gradient in poverty.

In model 3 we focused on migrants, testing the effect of being Swiss versus not being of Swiss-origin. According to the literature migrants must be more likely to be poor as a result of a variety of discriminatory mechanisms.

The fourth model focuses on "socio-professional capital." Here, we primarily tested the effect of professional trajectories. In fact, VLV included a module using a life event history calendar with which retrospective data on respondents' work, family, migration and health trajectories were collected (for a discussion on life event history calendars, see Morselli et al. forthcoming). As far as the work-trajectory is concerned, we consider three distinct states: Employed, inactive and retired. From those original state sequences we performed cluster analysis using the optimal matching algorithm (Abbott and Forrest 1986) to determine a meaningful typology of trajectories from the age of 15 until 65.[7] Since work trajectories can have very different meanings for women and men, we included interaction effects with sex (see

7 We used the R statistical software with the TraMineR and Traminer-Extras for sequence analysis, the weighted cluster package for the cluster analysis of state sequences (R Core Development Team 2005; Gabadinho et al. 2011; Ritschard et al. 2013; Studer 2013).

Budowski et al. 2002; Budowski and Suter 2002). For this model the hypothesis posits that a complete professional career must be protective against poverty; and inversely, individuals with an incomplete career should be particularly vulnerable. For Pilgram and Seifert (2009), differences in work-trajectories are one of the primary reasons for the over-representation of women and people with a migratory background among the poor. To a certain extent, significant results for professional trajectories would also signify indications of processes of cumulative disadvantages, meaning that specific work-trajectories could be regarded as pathways into poverty.

Addressing the effect of the social security system, we test an additional model which we refer to as "institutional capital." In this fifth model we focused on the various sources of incomes at the time of the VLV survey, in 2011/2012. In order to reduce the complexity and to obtain a clearer picture regarding income sources (originally measured by 11 items) we performed a cluster analysis to determine five types of income sources.

Finally, the last model has been centered around the problematic of family life and relates the most to the event-based poverty framework and the biographization hypotheses. This model includes a variable on the timing of the first child relative to its cohort, which we calculated by taking the average age at the time of birth of the first child for each 5-year age-group and then defined "early" childbirths as occurring at an earlier age than the average minus the variance and "late" for anything higher than the average plus the variance. Furthermore, the relationship history is modeled through binary variables indicating whether a person has experienced the death of a partner or a relationship dissolution (separation and/or divorce).

3.4 Missing data

As is often the case with survey questions on income (Börsch-Supan and Jürges 2005), our dataset presented a relatively high percentage of missing data in our dependent variable (15%). Performing a non-response analysis, we have found that non-responses to the question on monthly household incomes increased with age, most likely due the fact that several oldest-old did no longer manage their own finances, as well as more frequent missing data for people with a secondary or a high level of education compared to those with a low level. As already discussed in the section on poverty rates, we consequently expect no issues of under-reporting of poverty. However, besides the missing data in our dependent variable, there are between 10 and 50 missing cases for each of the covariates. This creates problems for the regression models in which incomplete cases are dropped (listwise deletion). The risk of sample biases in our analysis thus increases with the number of covariates in the model. Additionally, varying sample sizes can interfere with the interpretation of coefficients in generalized regression models (Mood 2010).

Given this situation, we used multiple imputations to address the problem of missing data in both, the dependent and independent variables. Although not

undisputed, multiple imputation is generally considered to be a solid method to deal with missing values, yielding robust results and providing much more clarity than the alternatives of either modeling missing values as a complementary factor and having it spread across the model, or running the risk of introducing selection bias by excluding missing observations from the analysis (Sterne et al. 2009). We imputed 100 datasets and used the rules described by King et al. (2001) to pool the results. We used the Amelia II package for R that is built upon the so-called EM algorithm (Dempster et al. 1977) and assumes that the data are missing at random (MAR), a model assumption which is very robust in a multitude of applications and even surpassing the performance of specialized models for categorical data (Honaker et al. 2011).

4 The life-course origins of old age poverty in Switzerland

4.1 A topography of old-age poverty

In the basic model that is shown in Table 1 three effects can be observed: With Geneva serving as baseline category, we find regional differences with two cantons, Ticino and Valais showing much higher odds for old-age poverty while Geneva, Basel and Bern are similar to Geneva. The age effect appears starting from 80 years of age upwards. The old-old are more susceptible to poverty than their peers who just entered retirement, showing a strong cohort effect. Gender difference is also confirmed with a 42% increase in the odds for poverty among women. These findings are in line with the literature and research evidence in Switzerland and in an international context, both of which were presented in the theoretical outline of this paper.

The second model shows an impressive impact of human capital (measured through education). Acquired in the earliest life stages, it still has an important impact on the risk of poverty in old-age decades later. Having higher education halves the odds of being poor in old-age, whereas having a lower education increases the odds two-fold compared to having an apprenticeship. The support for the social stratification hypothesis still increases when we compare the basic model to the second one, with a dramatic decrease in the Bayesian Information Criterion (BIC). These results reinforce one of our key hypotheses: The addition of education discards the age- and cohort effects found in the basic model and reduces both the significance and odds-ratio of gender. Hence, it can be said that the initially observed age- and cohort effects are most likely due to the structural changes in the composition of the population as previously discussed. Also, the social stratification hypothesis seems to apply: While there are less people with a low education in younger cohorts, the dynamics thereof for the risk of poverty – the "scarring effect" of having a low education – remain unchanged.

Table 1 Results from binomial logistic regression models (dependent variable: old age poverty; Exp [ß])

Model	1	2	3	4	5	6
Women	1.42***	1.2	1.19	1.15	0.97	1.2
Canton (ref. Geneva)						
Valais	2.01***	1.77***	2.13***	1.77***	1.95***	1.75***
Bern	1.12	1.05	1.26	1.04	1.30	1.05
Basel	0.88	0.9	1.01	0.9	1.30	0.91
Ticino	2.41***	2.02***	2.14***	1.98***	2.03***	2.05***
Age-group (ref. 65–69)						
70–74	1.27	1.21	1.16	1.22	1.22	1.21
75–79	1.21	1.11	1.07	1.1	1.06	1.11
80–84	1.34	1.2	1.22	1.19	1.09	1.22
85–89	1.52**	1.27	1.3	1.26	1.06	1.31
90+	1.45*	1.27	1.31	1.26	0.96	1.3
Education (ref. Apprenticeship)						
Low education		2.13***	2.01***	2.14***	1.79***	2.1***
High education		0.53***	0.5***	0.53***	0.58***	0.54***
Not-Swiss origin (ref. Swiss-origin)			1.9***			
Work trajectory (ref. Full-employment)						
Missing & early retirement				1.08		
Quasi full-employment				0.93		
Start and stop				1.22		
Stop and retake				1.07		
Retirement timing (ref. Legal age)						
Early				0.51***		
Late				1.08		
Income source clusters (ref. 3 pillars)						
3 pillars + work					3.00***	
AVS + soc. Welfare + other					9.97***	
2 pillars					2.51	
AVS + savings					4.95**	
Timing of first child (ref. Norm)						
Early						1.34*
Late						1.18
No child						0.95
Aikaike Information Criterion (AIC)	3 244	3 105.1	3 075	3 108	2 848	3 107.4
Bayesian Information Criterion (BIC)	3 310	3 183.5	3 159.5	3 204.6	2 951	3 216
Intercept	0.14***	0.19***	0.16***	0.2***	0.05***	0.18***

Source: VLV data (see Ludwig et al. 2014), own calculations.

The third model shows that older people with a non-Swiss origin have a higher risk for poverty, which corresponds to the findings of other studies that show that older migrants are indeed often at a disadvantage (Bolzman 2011).

4.2 The impact of socio-professional trajectories

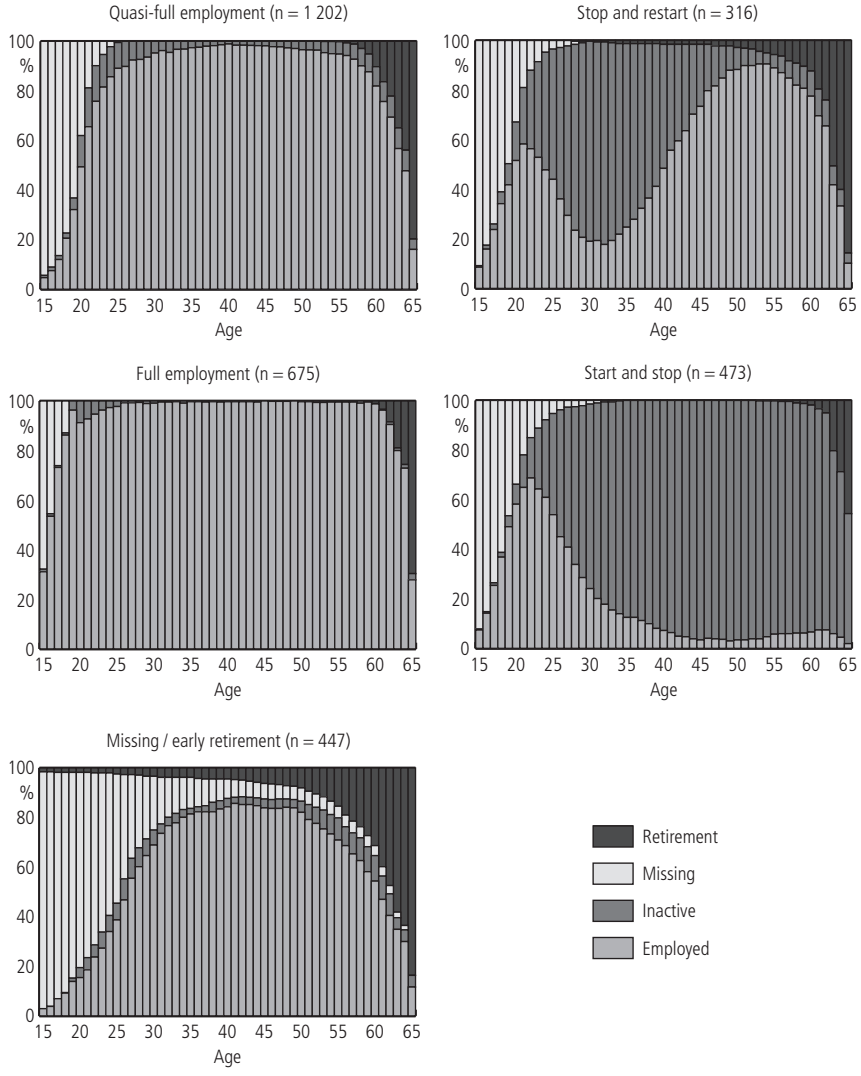
In the fourth model we test the accumulation processes resulting from a person's work trajectory. This required the creation of a meaningful typology of work-trajectories that is shown in Figure 2 before presenting the results of the regression models.

The cluster analysis of work-life trajectories finds five distinct clusters. Figure 2 shows the state distribution plots for each, i. e. for every time unit *t* the (stacked) distribution of states in which people were situated at that point in time. The clusters "Full employment" and "Quasi full-employment" regroup people whose professional life was generally characterized by high levels of employment and who experienced none or only short episodes (for those in "quasi full-employment") of inactivity. The second and fourth clusters (situated on the right of Figure 2) represent two trajectories which are clearly more frequent among women. A binomial regression analysis modeling membership for each of those two clusters with the stratification variable from the first model as covariates shows that women are 1.5 times more likely to be in the second and twice more likely to be in the fourth cluster, compared to men (results not shown). The second cluster "Stop and restart" shows a higher frequency of unemployment between mid-twenties and mid-thirties, corresponding to what most likely is a break from the formal labor market to focus on family and other informal activities. The fourth cluster "Start and stop" contains people who began their work-lives by working but from their mid-twenties onwards retired from the labor market and remained formally inactive up until the age of retirement. Finally, there is a fifth and final cluster that is characterized by individuals with a higher frequency of missing data and with a tendency to early retirement. The identified categories of this typology are in line with previous work on the topic (Levy et al. 2007).

The results for the fifth model – constructed as an extension of the second human capital model – show, once again, education as a consistently strong predictor of old-age poverty. Surprisingly, we find that the work trajectories have no impact on poverty, neither do they have any effect on education. We also tested the interaction between work trajectory clusters and sex but we found no significant relationship. The accumulation hypothesis is clearly not supported, as being poor in old-age seems to be largely determined by other factors than a person's work trajectory.[8]

8 We would like to point that we also tested the hypothesis of social mobility with an indicator comparing a person's first with its last profession but we found no significant results and thus omitted this factor in the model.

Figure 2 Clusters or work-life trajectories



Source: VLV Data (see Ludwig et al. 2014).

4.3 Institutional capital: Sources of income of the older population in the Swiss welfare system

The results for the clustering of income sources reveal five distinct groups that can be characterized as follows: Firstly, there is a cluster that represents the three pillar model where people benefit from AVS, pension funds as well as revenues from a third pillar. From a social policy perspective this combination is often described as "optimal." However, it only represents 20% of the people. The largest cluster is the "two-pillar" group which captures people that rely solely on AVS, i. e. the first pillar, and pension funds, i. e. the second pillar. This group makes up around 33% of the VLV respondents. The third group, representing 9%, includes those who, for the most part, do benefit from three pillars but indicated in the questionnaire that they still work. Fourthly, there is a cluster (10%) in which people seemingly do not benefit from a second pillar, but purely rely on AVS and private savings. Finally, the fifth cluster consists of a fair proportion (28%) of persons who declared that they do receive incomes from the AVS but indicated that they also rely on governmental complementary welfare and a multitude of other sources of welfare (family, institutions, churches).

The institutional resources model (model 5) seeks to test the hypotheses of how income sources, reflecting the individual position in the Swiss welfare regime, affect the odds of being poor. Here, it must be emphasized that the interpretation of the cluster's impact on poverty differs from the previous models, which were concerned with life-course *mechanisms*. As explained in the theoretical part, the configuration of income sources in old-age is a cumulative result of a person living in Switzerland and contributing – or not – to the Swiss pension system during his or her professional life, but it also depends on other life events that are not measured in this analysis such as using the second pillar for the acquisition of real estate or out-migration at the retirement age – in the latter case, it is actually possible to access the totality of the second pillar at once. In this sense, this variable can be regarded as a synthesized measure of complex Swiss life courses.

As far as the results are concerned, similarly as before, education has a strong influence in the same order as in the previous models. The groups of income sources described above show strong results: While the 3-pillar cluster serves as the baseline category, the first cluster that contains retired people who still work shows three times the odds of being poor when compared with the former. Even more striking is the odds ratio of 9.97 for the cluster where people rely on complementary welfare and other forms of social or institutional welfare. The cluster "AVS + savings" shows an equally high odds-ratio of 4.95, signifying five times the risk of poverty for this group compared to the optimal three pillar baseline. This cluster contains self-employed individuals who do not have a second-pillar due to the non-mandatory regulatory framework or who have seemingly used their second pillar to buy real-estate property, a specificity which is allowed under Swiss law. In fact, a

simple logistic regression modeling belonging to this cluster (versus not belonging to it) showed that there are significantly more self-employed people in this cluster (an odds ratio of around 3.3) as well as significantly more homeowners with a highly significant odds-ratio of 2.48.[9]

4.4 Family events: A biographization of poverty?

The final model is the family event model. Here, we tested the core of our hypothesis which is whether we can observe a biographization of poverty according to which certain life events trigger poverty, rather than social position. Our results, however, do not fully reflect this strong assumption. We tested the effects of the events of losing a partner or breaking up a relationship and we were not able to detect any significant effects. The only slight increase in the odds-ratio could be found in the early timing of the first child, in which case the result of 1.34 suggests a weak but significant impact of this life event that happened much earlier in life. However, unlike what certain authors claim, the addition of these life events do not in any way influence the impact of human capital and thus cannot disqualify the social stratification framework.

5 Final discussion

In this paper we set out to explore the life-course construction of old-age poverty in Switzerland and its underlying dynamics, including the unequal distribution across sex and age groups, with women and the "oldest-old" being much cited disadvantaged key-groups. We considered two main frameworks given by social stratification, emphasizing social structures on the one hand, and an event-based biographical approach on the other hand. Furthermore, we tested three main mechanisms with regard to the life course that are often opposed in the literature but that finally present several overlaps: critical life period and cumulative (dis)advantages (both stressing the importance of the earliest life stages) and biographization or individualization.

Our results, based on the VLV survey, disqualify the second framework and strongly support the first, suggesting that after all, social stratification seems to be the predominant dynamic in the older population when it comes to poverty, with the early life stages playing a crucial role. Hence, we confirm the findings by Levy et al. (1997) who showed considerable evidence for inequalities in Switzerland and we share their conclusion regarding the persisting influence of processes of social stratification reproducing and reinforcing them.

9 The specific models contained the sample-stratification criteria (sex, canton, age-group), whereas we then added a person's first job for the first model and whether a person indicated to owning his or her housing in the second model.

Gender differences are largely captured through educational differences. Similarly, the higher frequency of poverty among the oldest-old is completely captured by human capital. This is clearly related to historical trends, to the quantitative but also qualitative extension of the educational system that, in Switzerland as well as abroad, was observed during the 20th century, especially from the 1950s onwards. In younger cohorts, people – women in particular – tend to have higher education and people with low education grow more and more scarce. However, for the individuals who did not benefit from those general improvements, the long-term impact is significant. These findings for the cohort effects also imply that in the short-term we can expect old-age poverty to decrease due simply to the fact that cohorts with predominantly lower education are continuously replaced with better educated ones.

While various studies, theories and institutional arrangements assume a strong link between professional trajectories and old-age poverty, we could not find this relationship in our dataset. It appears that the number of years of contribution to the pension system does not play a significant role. On one hand, this could be seen as a testament that the Swiss institutional system with its measures to prevent poverty (AVS and complementary welfare above all) seems to be working sufficiently so as not to penalize non-standardized work-trajectories. However, these results do not have to signify just good news. The continuing strong impact of education throughout all models could also lead to an inversed interpretation where the conclusion is much more problematic: Regardless of a person's work-trajectory, the mere fact of not having an education creates a life-long disadvantage that even with a complete and standard work trajectory, one is still more prone to financial hardship in old-age. The pathway into poverty seems largely determined at the beginning of a person's life and principally relies on having an education or not. We believe that addressing the dynamics regarding educational differences, which then will go on to create significant social inequalities in the long-run, will be one of the key challenges for policy-makers today as well as in the mid-term.

Moreover, our results do confirm that the measures introduced in the last revision of the AVS system that aimed at eliminating inequalities seem to be working adequately, a finding which is supported with the absence of a significant relationship for the events of having lost a partner or having experienced a relationship dissolution. In the mid-1990s, widowhood was still important in explaining low levels of incomes among women compared to men (Lalive d'Epinay et al. 2000b), but our results based on the VLV survey confirm the analyses by Wanner and Fall (2012), suggesting that the adaptations included in the 10th revision of AVS have been successful. Similarly, 15 or 20 years ago the expected rise of divorce as a civil status in the older generations was seen as a threat, especially for women. However, while marriage dissolution in later life is often associated with significant psychological distress (Höpflinger et al. 2013), our findings suggest that it does not necessarily imply a deterioration of economic well-being. The only life course event which

we found to have a weak poverty-triggering effect was that of childbirth timing. This confirms findings by Vandecasteele (2011) but probably requires a different interpretation, since for the older population this information refers to an event happened at least four decades earlier.

The question that remains is why life course events seem to have practically no effect. In fact, as Vandecasteele (2010; 2011) points out, the new biographical paradigm has grown in importance against the background of destandardization and individualization of the life course in modern societies. It can thus be questioned whether those mutations of the life course could be considered *prerequisites* in order to detect any influence of critical events over social stratification processes. Should this argument hold true, it would be an explanation of the absence of such a relationship in our dataset, given that the studied generations can be considered to be the parents of the often cited baby-boomer generation and globally, had quite "traditional" life courses (Widmer and Ritschard 2009). The gender differences we observe in the clusters of work-trajectories support this interpretation.

The influence of an early transition into parenthood – we cannot emphasize enough that this is an event that, for our target population of people aged 65 and older, is most often situated over forty years ago – could be interpreted in terms of causality in that it often implied abandoning education and starting work in low skilled positions.[10] More generally, it is important to remember that the stratification theory includes a cumulative disadvantage perspective since low qualifications imply low professional career prospects.

The analyses on the sources of income first show a high diversity within the five clusters, and second, demonstrated strong relations with poverty, the individual position in a complex welfare system being a very strong determinant of poverty. Naturally, our indicator refers to the current position with regard to income sources but clearly, the latter is the result of dynamics inscribed in the past life courses. To some extent, we have therefore also found limits of what can be done with a strictly binary approach emphasizing being poor versus not being poor. We see strong potential for future analyses starting from the five clusters as target variable and to determine to what extent social origin, work trajectories and critical events have an influence on being situated in one specific cluster. This is equally important from a social policy point of view and again, could contribute to the determination of "pathways into vulnerability." Particularly the role of the second pillar for poverty – or, to be precise, the absence of it among people who were self-employed and among homeowners – is a particularly pressing matter. Since the first writing of this paper, this issue has emerged on the political agenda and has been discussed in the media.

10 This type of association is often discussed in the research on "underclass" that stresses the accumulation of disadvantages during the critical life periods because of the concentration of families of low status in destitute and/or segregated environments ("ghettos").

We remain hopeful that further research will help to shed light on even more immediate actions to improve the living conditions of those twenty percent of older people who, despite living in such a wealthy country as Switzerland, still have to remain in a situation of poverty.

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