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# Occupational career patterns over 30 years: predictors and outcomes

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## Abstract

**Background:** Investigating individuals' sequences of occupations and identifying suitable patterns is a complex task. Most research focuses on single time-points, single jobs and single transitions and only few longitudinal studies have investigated career paths over a long period of time. The aim of this study is to describe occupational career patterns (OCP) over a period of 30 years using longitudinal data from a representative sample of Swiss men and women. Based on a contextualist perspective of career development (Vondracek et al. Career development: a life-span developmental approach, 1986) potential antecedents such as characteristics of the family of origin and consequences of occupational career are examined.

**Methods:** The database is the Zurich Longitudinal Study "From School to Middle Adulthood" (ZLSE), which includes eleven surveys and covers the age span from 15 to 52 years. Our sample consists of 597 persons. The vocational activity was surveyed with the aid of a "life graph" and the occupational career patterns were categorized with the help of the "International Standard Classification of Occupations" (ISCO-08). In addition information about the family of origin, roles over the life course, highest degree of education, intelligence, satisfaction in different areas of life, income and working conditions were collected.

**Results:** Patterns of "upward mobility" and "fluctuating patterns" (upward and downward movements) were prevalent in the men's OCPs. For women, the "family pattern" with several interruptions and the "stability pattern" were most frequently observed. Men's and women's OCP were only weakly related to family of origin, but more strongly to their overall life career (e.g. multiple role constellations, such as family and investment in work and education). The results also show that the individual career development matters in terms of later career success and well-being.

**Conclusions:** The study confirms the overall assumption of more beneficial consequences (for both genders) for "upward mobility", followed by "fluctuating patterns", whereas changing patterns such as "downward" and "horizontal changes" show negative effects. In conclusion the study shows that for career counseling practice it is important to look into the future and talk about long-term perspectives.

**Keywords:** Career pattern, Job mobility, Longitudinal study, Personality, Social background, Educational level, Occupational status, Career success, Gender

## Background

The individual's career development has long been of interest to vocational research. However, it is a complex task to describe career/vocational paths. Since individuals can change jobs and occupations several times during their lifetimes, investigating the career represents a multi-faceted work activity. Donald Super made a substantial contribution to career research as early as the 1950s by focusing on the developmental properties of careers (Super 1957). The developmental aspects of careers have repeatedly been called for ever since (Savickas 2001; Vondracek and Hartung 2002). However, most research still focuses on single time-points, single jobs and single transitions (such as high school and college years), whereas life course investigations have been subject only to limited research (Scherer 2001). To date, only few longitudinal studies have investigated career paths over a long period of time.

Super defined career as the “combination of sequence of roles played by a person during the course of a lifetime” (1980, p. 282). According to this understanding, career development represents a long-term process, in which personality, interests and abilities are balanced with environmental incidents. Individuals and environments are subject to change, and therefore career patterns also reflect changes over the life span. Arthur and colleagues (1989) propose the following similar definition: “the evolving sequence of a person's work experience over time” (p. 9). The definition also shows that work experiences are always based on a subjective perspective and, hence, differ from person to person.

Occupational career patterns (OCP) may be of significant importance for organizations (since OCP may influence system maintenance; Barley 1989), as well as for society (because OCP are likely to influence the profile of communities; Wilensky 1961). The most important influence, however, concerns the individual. Occupational activity has an impact on life stage functioning as well as on the fulfillment of tasks in different life stages (Super 1957). Furthermore, studies have found that career patterns may play a role in terms of well-being (e.g. Jepsen and Choudhuri 2001). Therefore, empirical studies of OCP are very important in vocational and career guidance (Jepsen 1994; Savickas 1995). They create a basis for optimal OCP guidance based on well-founded knowledge—including the risks—of the various career patterns. For this reason, researchers are to identify OCP and factors involved in influencing decisions at numerous points in time (Osipow and Fitzgerald 1996).

The overall objective of the present study is to contribute to the knowledge of occupational career development. Previous research has highlighted the importance to investigate OCP separately for men and women (Burke and McKeen 1993). The data from the Zurich Longitudinal Study “From School to Middle Adulthood” (ZLSE) focuses on personal and occupational development between the ages of 15–52, and we intend to examine career paths over this extended period of time. This study concerns the cohort of the so-called “baby boom generation” (i.e. people born around 1963). The study's main goal is to identify and describe occupational career patterns as they developed over 36 years for a cohort of men and women now in their early fifties. Secondly, and based on a contextualist perspective of career development (Vondracek et al. 1986), we investigate potential antecedents of OCPs with a focus on the family of origin (Whiston and Keller 2004), different aspects of the life course (e.g. family, children), and intelligence. Thirdly, we intend to shed more light on the potential consequences of occupational

career development and examine how OCPs are connected with both quality of life (e.g. satisfaction) and job perceptions/conditions.

## **Theoretical background**

### **Occupational career patterns**

Three different ways of describing occupational careers play a prominent role in the literature (Huang and Sverke 2007). The first concerns orderliness of career development (orderly vs. disorderly), meaning that occupational transitions are socially constructed. For example, one job more or less naturally leads to another (Wilensky 1961). A second approach refers to direction (vertical vs. horizontal), where the focus is on the connection between occupational mobility and changes in occupational socioeconomic levels (Ng et al. 2005; Roberts et al. 2007; Schellenberg et al. 2015). A third approach refers to stability (stable vs. changing occupations) (Jepsen and Choudhuri 2001).

Needless to say, investigating individuals' sequences of occupations in order to identify suitable patterns is a complex task and different approaches have been applied. To identify different career patterns, we distinguish two approaches, namely a theoretically based categorization, and an empirically grounded typology.

First, an overview of the theoretical procedure is given to categorize OCP: Different authors describe various categories of career patterns. For instance, Miller and Form (1951) categorized men's patterns into initial, trial, and stable work periods and identified six occupational career patterns analyzing three timepoints over time. Stable and conventional careers were defined as secure patterns, whereas unstable, single trial, dis-established, and multiple trial sequence were classified as insecure patterns.

The dominant and traditional point of view on career paths in the twentieth century is exemplified by the career theory of Super (1957). The typology of Super differs between stability and change of the life course. He proposed different career patterns for men, such as "stable", "conventional" (changes in the initial career phase, but stable afterwards), "unstable" and "multiple trial". For women, he proposed further patterns such as "stable homemaking" (working until getting married), "double track" (working and family) or "interrupted career" (describing women who follow a career sequence of work-homemaking-work). Super (1980) proposed that career changes are not only normal but are psychologically beneficial in a climate of rapid social change.

Wilensky (1961) categorized men's work histories into six patterns regarding orderliness and direction: orderly horizontal progression, orderly vertical progression, borderline orderly vertical progression, disorderly horizontal movement, disorderly vertical movement and one job for the entire work life. Kinnunen et al. (2005) pre-defined three categories of career patterns: unstable (varying in fields), changeable (involving activities such as training and parental leave) and stable (consistent in one field). They found that men tend to have stable careers, while women more often experience career changes. Jepsen and Choudhuri (2001) also found that relatively more women show changing career patterns. Women in traditionally female occupations were less likely to change occupations. They are overrepresented in jobs that are clerical, semi-professional or service-oriented, which often have limited upward mobility (Ng et al. 2007).

Ng et al. (2005) made a distinction between different kinds of changes: professional advancement, a descent down the job ladder, and a job change in which one remains

on the same hierarchical level. Moreover, they differentiated whether these changes take place within an organization or between various organizations. Ng and colleagues postulated that there are multiple types of job mobility: Regarding the occupational status, we can distinguish between upward, lateral and downward mobility. Further, we can focus on the position after a change (same or changed) and the employer (internal change or external change: change of the firm).

Instead of pre-determining possible patterns, OCPs can be identified by inspecting several selected time points of the occupational history and conducting empirical analysis. Jepsen and Choudhuri (2001) applied optimal matching analysis and cluster analysis to identify homogenous classes of individuals characterized by similar patterns of occupational sequences and identified men's and women's occupational categories at every 5-year interval over 25 years. They found five patterns, such as "upward mobility patterns", "stable patterns", "downward mobility patterns", "fluctuating patterns" and "others". They found that less than two-thirds of their sample experienced occupational change, and that men's occupational career pattern tended to be more stable than those of women.

However, all the mentioned strategies are merely coarse examinations of career patterns. For example, the theoretically based method to define career patterns is less based on data, and to identify OCPs by including occupations only at a limited number of time points makes results depend strictly on those time points inspected (Pollock et al. 2002). To address these problems, we use longitudinal data and examine occupational sequences over a period of 30 years. We categorize the career patterns with the help of the "International Standard Classification of Occupations" (ISCO; ILO 2012), which is a very well established instrument. The ISCO is basically a categorical system but does partially have a hierarchical structure based on educational level (for more details see "Career patterns" section). Therefore the categorization of "stable" "horizontal changes", "upward career", "downward career" and "fluctuating pattern" are the logical consequence to describe OCPs.

### **Predictors of occupational career patterns**

There are different possible explanations for occupational career patterns (Bender et al. 2000): on the one hand, there are contextual factors related to the family of origin (Schellenberg et al. 1984), and on the other hand, there are individual characteristics (e.g., gender, qualification, age) and motives (e.g., parenting).

Whiston and Keller (2004) distinguished between the impact of two types of family variables, namely family structure variables (e.g., parents' occupations) and family process variables (e.g., relations to parents). The authors found evidence to support the fact that children tend to enter similar occupational areas as their parents, and they often select occupations with similar socio-economic status (SES), as well. The SES is connected to educational and occupational attainment, even after controlling for cognitive abilities and occupational career aspiration (Roberts et al. 2007). Furthermore, relations with parents were found to be an important factor affecting career maturity and vocational identity (Whiston and Keller 2004). In several studies, participants indicated that their mothers, rather than their fathers, had a more significant influence on their career choice. However, there is limited knowledge concerning the influence of the family of

origin on career patterns over the life span. One of the few studies found that the origin affects earlier educational transitions more strongly than later ones (Breen and Jonsson 2005).

Fitzgerald et al. (1995) concluded that there is “dramatic evidence of the change in women’s life patterns, a change that has been called the most significant social phenomenon of the 20th century” (p. 78). A classic example is the comprehensive study of 10-year job histories of 498 women college graduates from the class of 1968 (Betz 1984). All but a few women worked outside the home, and 79% combined both homemaking and working outside the home. 29% showed no changes in occupation over the 10-year period and were classified as “fixed careers.” Although women’s and men’s labor force participation rates are becoming more similar (European Commission 2001), women typically have more complex interactions with the labor market (Lee 1994; Super 1957). Since women carry the major responsibility for children, they more often work part-time and experience more interruptions in their career patterns due to motherhood. This, in return, may have a negative influence on vocational advancement (“upward mobility”) (Huang and Sverke 2007). Jacoby (1999) found that childless women and men have similar mobility patterns and SES-levels. Full-time working mothers also have similar SES levels and an upward trend over time. In contrast, part-time working mothers showed decreased occupational SES levels. Other findings are that the frequency and length of career interruptions were important factors related to current earnings and occupational levels (Stewart and Greenhalgh 1984). It can be assumed that activities such as homemaking roles, part-time work, and career breaks, may have unfavorable consequences for occupational career development. Women often change their employment status over the course of their life and have quite varying schedules for childbirth (Lee 1994). Regardless, however, how such variations may affect occupational career patterns is largely unknown.

Breen and Jonsson (2005) found evidence for the fact that further education mediates a substantial part of the association between social origin and career outcomes (Breen and Jonsson 2005). Also, other findings show that investment in education is associated with upward occupational mobility and high occupational standing (Becker 1993). Further, it became evident that the higher the educational level, the less likely a person was to choose a stable career path.

In terms of individual factors, cognitive abilities are found to be possible antecedents for occupational career patterns, being associated with upward occupational mobility and high occupational standing (Deary et al. 2005; Spiess Huldi 2009). The intelligence of the employees is related to good performance at work; generally, people with above-average values in intelligence solve problems faster and more efficiently (Amelang and Bartussek 2001). Cognitive abilities also play an important role by having an effect on educational attainment. People with above-average intelligence values usually undertake further education more frequently (Buchmann and Sacchi 1995; Mayer 1991).

#### **Outcomes of occupational career patterns**

The developmental perspective postulates that the capability of mastering tasks at an early time point will influence how well one will cope with tasks in later stages (Super 1957). For this reason, a successful occupational career history is likely to have beneficial

consequences. Little empirical research has been conducted to investigate the long-term-effect of occupational career patterns. Vondracek et al. (1986) found that patterns of vocational identity in adolescence are associated with later psychological well-being.

One key indicator for career success is career advancement, such as upward mobility. It is typically found that upward mobility (Lynch and Smith 2005)—as well as orderly careers (Osipow and Fitzgerald 1996) and stable careers (Smart and Peterson 1997)—are linked to beneficial consequences for the individuals, in comparison with disordered, less stable, and downward careers. Pollmann-Schult (2006) summarizes that job changes in the sense of “upward mobility” are frequently connected with higher salary and higher prestige levels. He pointed out that mobility processes cannot be assessed only by extrinsic characteristics, but that they must also be assessed by satisfaction with work, working conditions and connection with different areas of life (e.g. work and family). The author showed that individuals with “upward mobility” patterns showed more workload and less favorable working hours. On the other hand, people with “downward mobility” (in the sense of lower prestige and income level) had lighter workloads and better working hours, but also fewer promotion prospects. Jepsen and Choudhuri (2001) observed that people with changing occupational career patterns were more satisfied with their life courses and jobs in midlife than people with stable patterns. Furthermore, Kanchier and Unruh (1988) found that job changers were more satisfied with their position than nonchangers among managers in one large Canadian organization.

### Research questions and hypotheses

The main goal of the present study is to contribute to the understanding of occupational career development. Existing models in career development, typically based on the experiences of men, can probably also be applied to women. Our special focus, hence, is on women’s OCP. Our first aim is to identify and describe women’s and men’s OCP over a 30-years life span from the time they leave school to middle adulthood.

We ask the following questions:

1. How frequent are stable OCP and career patterns with occupational changes over the lifespan? Among people who have changing occupational patterns,
2. What kinds of occupational changes are most frequently observed?

Based on a conceptual perspective of career development, we investigate potential antecedents of occupational career patterns, and therein conditions and events linked to stable and changing occupational career patterns. Our focus lies on the family of origin and various roles over the course of life, such as family and motherhood. We also investigate cognitive abilities and their influence on occupational career patterns.

3. What roles do sociodemographic factors, such as social background, gender, educational level, and different life roles (e.g. motherhood) play in the course of the occupational career over 30 years?
4. What is the influence of intelligence on occupational career patterns?

Following the call in literature for more research on the long-term consequences of career development, we examine the influence of occupational career patterns on a variety of possible outcomes, such as career success (measured by later income),

quality of life (satisfaction in different life domains) and job perception (work motivation).

- Are there any differences in career patterns with regard to income, satisfaction in different life domains and job perception in middle adulthood?

To answer questions concerning antecedents and outcomes of occupational career patterns, we conduct our analysis separately for men and women.

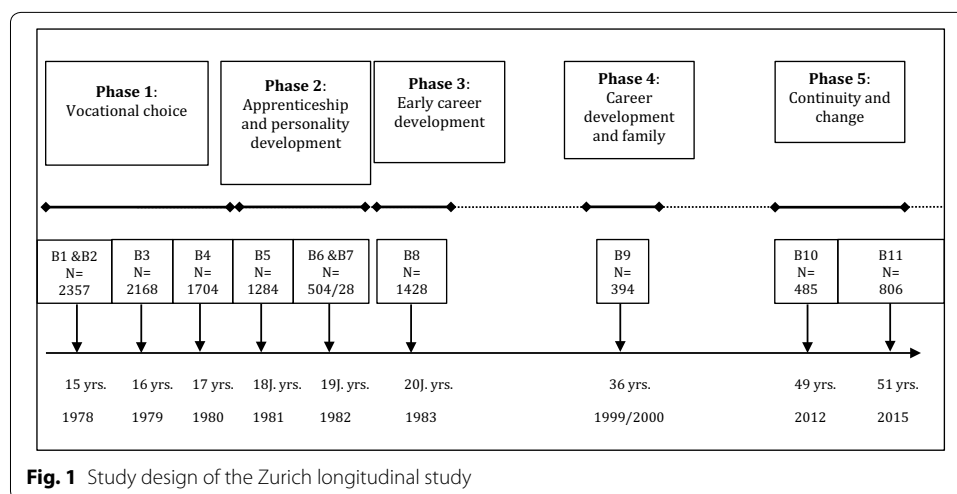
## Methods

### Study participants

The database is the Zurich Longitudinal Study “From School to Middle Adulthood” (ZLSE). This longitudinal study, to date, includes eleven surveys (B1 to B11; see Fig. 1) and covers the age span from 15 to 52 years (Schallberger and Spiess Huldi 2001; Schmaeh et al. 2015). The project was not planned as a life-long study but evolved from phase to phase. The first phase on “Vocational Choice” encompassed a broad collection of personality and environmental variables with a sample representative of 15-year old students of the German- and French-speaking parts of Switzerland. The current phase 5 “Continuity and Change” (surveys B10 and B11) is restricted to the German speaking part of Switzerland and encompasses 882 participants (for more detailed information see Schmaeh et al. 2015).

The 11th survey took place during summer 2015. The current study was carried out by the University of Applied Science of Special Needs Education (HfH) and the University of Basel, with financial support from the Swiss State Secretariat for Education, Research and Innovation (SERI).

In waves B10 and B11, the vocational activity was surveyed with the aid of a “life graph.” Within this, the type of occupation, the position, the employment grade, the start and end of the occupational phase were collected. The life graph portrays the whole time span from the end of the school (19 years) up to middle adulthood (52 years). For 602 persons, complete information about their occupational development from 19 up



to 52 years of age is available. Five persons had to be excluded because of long periods of illness or unemployment. Therefore, our sample consists of 597 persons.

Of the 597 persons, 320 (53.6%) are female. Regarding socioeconomic background, almost two-thirds (68.1%) come from the middle class, slightly more than one-fifth from the lower class (21.9%), and 10% from the upper class. Approximately 46% have visited a type of school with basic demands and 54% with higher demands. The distribution of the chosen sample can be compared with the initial random sample regarding gender and social class (for gender Binomial test:  $p = .400$ ; for social class,  $\chi^2$  goodness-of-fit test:  $p = .502$ ). A significant difference, however, is apparent regarding the type of school completed by the age of 15: in our subsample compared with the total random sample, it becomes evident that more persons had a school type with higher demands (Binomial test:  $p = .000$ ).

## Instruments

### *Career patterns*

The occupational career patterns were categorized with the help of the “International Standard Classification of Occupations” (ISCO), version ISCO-08. It was possible to categorize all the occupations without difficulty, including occupations in the past (1979, 1982, etc.). The ISCO-08 subdivides the occupations into major groups, sub-major groups, minor groups and unit groups. Those in occupational major groups are differentiated as (1) “managers”; (2) “professionals”; (3) “technicians and associate professionals”; (4) “clerical support workers”; (5) “service and sales workers”; (6) “skilled agricultural, forestry and fishery workers”; (7) “craft and related trade workers”; (8) “plant and machine operators and assemblers”; and (9) “elementary occupations.”

The data from the life graph were divided from 1982 (age 19) on into 5-year episodes. This resulted in seven points in time (1982, 1987, 1992, 1997, 2002, 2007 and 2012). The activity at July of each year was coded and the major occupational group extracted. If information about the occupation was missing at one point in time, the person was included in our sample nevertheless. Yet, if more than two points in time were missing, the person was excluded.

In order to understand the formed patterns, attention must be directed to the fact that ISCO is a classification system that does not show a general ordinal level. But some of the occupational groups clearly have a higher socioeconomic level than the others, such as occupational group 1, “managers”; group 2, “professionals” and, group 3, “technicians and associate professionals.” Contrarily, group 9, “elementary occupations,” subsumes the lowest paid jobs with low qualifications. Groups 4–8 are as a major group *sui generis* on the same level as far as status and required education are concerned. Based on these features, the following career patterns were formed:

1. *Stability* At each time point occupations have the same ISCO-08 major group.
2. *Horizontal changes* Only changes between major ISCO-groups 4, 5, 6, 7, 8 are allowed.
3. *Upward career* In this group, we integrate career patterns with an ascending occupational status over the occupational career. Minimally at one time point the persons



had an ascent (from 9 to all others; from 4–8 to 1, 2, 3; from 3 to 2 or 1; from 2 to 1) and no descent at any time.

4. *Downward career* Minimally, at one time point, the person had a descent (from all other to 9; from 1, 2, 3 to 4–8; from 1 to 2, 3; from 2 to 3) and no ascent at any time.
5. *Fluctuating pattern* This group contains career courses with at least one ascent and one descent.
6. *Family pattern* This group contains at least two points in time with interruptions because of family duties (care for children, relatives, household).

Breaks in occupational careers: short breaks (one point in time) because of motherhood or unemployment are allowed in OCP 1–5. Also one or several breaks for further education (or for other reasons like travelling) are allowed in all OCP.

### **Family of origin**

*Social class* The social class at the age of 15 years was operationalized through the three-stage indicator “highest educational level” and the occupational position of the father (or the single mother) (1 = lower class, 2 = middle class, 3 = upper class).

*Parenting style* The parenting style at the age 15 was surveyed with two questionnaires, regarding the mother and the father separately. The questionnaires were designed based on Cooper (1966) and consist of eight different statements, each to be rated either as “true” or “false”. Three subscales, namely “warmth”, “control” and “stimulation”, were included. The internal consistencies proved satisfactory (from .65 to .71). We decided to consider only the parenting style of the mother, because mothers played a significant role as a primary caregiver in the 60s and 70s.

### **Multiple roles over the life course**

*Number of children* The number of children was surveyed at the age of 52 with an open question.

*Level of employment* At the age of 52, the percentage of work in the current job was surveyed.

### **Highest degree of education**

The highest degree of education that a person acquired is based on the information in the life graph (or other parts of the survey). The following six categories are possible (Hättich et al. 2014): low or no further education; vocational education and training; advanced federal Professional Education and Training (PET) diploma; baccalaureate school (also teacher training); University of Applied Sciences and University/Federal Institute of Technology.

### **Intelligence**

At the age of 15, verbal intelligence, logical thinking and figural intelligence were measured (Schmale and Schmidtke 1966; Amthauer 1973) and merged to one value. Cronbach’s  $\alpha$  is 0.80.

### **Satisfaction**

Various aspects of satisfaction in different areas of life at the age of 52 were chosen: occupation, family, financial situation, health and life in general. Answers regarding satisfaction were given on an 11-point scale (from 0 = “not at all satisfied” to 10 = “fully satisfied”). Satisfaction with life in general was surveyed with the Satisfaction with Life Scale (Diener et al. 1985). It contains five items with a 7-point scale (from 1 = “not true at all” to 7 = “absolutely true”). The internal consistencies proved to be good (.88).

### **Income**

*Income* The gross salary indicated at the age of 52 was chosen. The salary has been adjusted according to 100% work activity.

### **Working conditions**

*Motivating potential of work* This dimension was surveyed at the age of 52 with a modified version of the Job Diagnostic Survey from Hackman and Oldham (1975, considering the modification see Häfeli et al. 1983). The scale consists of the four subscales “skill variety”, “task identity”, “autonomy” and “task significance” with three items each. The response format reached from 1 = “never” to 5 = “always”. The internal consistencies of the main scale proved to be good (.77).

## **Results**

### **Description of occupational career patterns**

A majority of 32.8% (196 persons) showed an “upward career pattern,” 21.9% (131 persons) a “stable career,” 17.8% (106 persons) a “fluctuating pattern,” 15.4% (92 persons) a career with several breaks of motherhood (“family pattern”), 8% (48) a career with horizontal changes and 4% (24) a “downward career.” As shown in Table 1, there was a significant association between career patterns and gender ( $\chi^2 = 148.16$ ;  $df = 5$ ;  $p = .000$ ). For women, the most frequent pattern was the “family pattern” (28.4%) followed by the “stable career pattern” (28.1%). They showed these two patterns as well as the “downward career” (5.6%) significantly more often than men. Men, however, showed an “upward career” (48.7%) most frequently, followed by a “fluctuating pattern” (21.7%). These two patterns and also the “pattern with horizontal changes” (12.3%) were significantly more frequent among men. The effect size was large (Cramers  $V = .498$ ).

Regarding the social class, there was an overall effect for men ( $\chi^2 = 16.46$ ;  $df = 8$ ;  $p = .036$ ): Those with a “stable career” came with a lower probability from the “upper class” and those with a “downward career” pattern came with a higher probability from the upper class—these result should be regarded with a certain caution because of the low sample size. For women there was no association of pattern with social class ( $\chi^2 = 14.02$ ;  $df = 10$ ;  $p = .172$ ).

### **Determinants of occupational career patterns**

In this study, we analyzed career patterns for men and women separately. For men, we assumed five different career patterns, because only one male shows the “family pattern,” which was frequently seen in women.

**Table 1 Frequency distribution of career patterns by gender and parental social status/ gender**

	Stability (%) (n = 131)	Horizontal changes (%) (n = 48)	Upward career (%) (n = 196)	Downward career (%) (n = 24)	Fluctuating pattern (%) (n = 106)	Family pat- tern (%) (n = 92)
Gender						
Women	28.1 <sup>a</sup>	4.4 <sup>a</sup>	19.1 <sup>a</sup>	5.6 <sup>a</sup>	14.4 <sup>a</sup>	28.4 <sup>a</sup>
Men	14.8 <sup>a</sup>	12.3 <sup>a</sup>	48.7 <sup>a</sup>	2.2 <sup>a</sup>	21.7 <sup>a</sup>	0.4 <sup>a</sup>
Social class						
Men						
Lower class	16.4	14.5	47.3	1.8	20.0	0
Middle class	17.0	13.6	47.2	1.1	20.5	0.6
Upper class	0 <sup>a</sup>	0	58.6	6.9 <sup>a</sup>	34.5	0
Women						
Lower class	19.1	8.8	27.9	4.4	14.7	25.0
Middle class	29.6	3.9	17.0	7.3	14.6	27.7
Upper class	33.3	0	22.2	0	7.4	37.0

<sup>a</sup> Significant adjusted residuals

The association between the different *job groups* (ISCO) at age 19 and the career patterns showed for men: Compared with other groups “professionals” had less likely an “upward career pattern” (20.0%) and more likely one of “stability” (33.3%). “Stability” was more common in “clerical support workers” (40%). “Craft and related trade workers” less likely had a stability pattern (20.1%) (Table 2;  $\chi^2 = 63.88$ ;  $df = 30$ ;  $p = .000$ ).

**Table 2 Association between career pattern and ISCO-08 major group at age 19, men**

	Stability (%) (n = 38)	Horizontal changes (%) (n = 30)	Upward pat- tern (%) (N = 125)	Downward pattern (%) (N = 6)	Fluctuating pattern (%) (N = 58)	N
Professionals	33.3 <sup>a</sup>	0.0	20.0 <sup>a</sup>	6.7	40.0	15
Technicians and associate professionals	13.1	0.0 <sup>a</sup>	52.5	3.3	31.1	61
Clerical support workers	40.0 <sup>a</sup>	0.0	40.0	0.0	13.3	15
Service and sales workers	15.4	15.4	53.8	0.0	15.4	13
Skilled agricul- tural, forestry and fishery workers	21.4	35.7 <sup>a</sup>	28.6	0.0	14.3	14
Craft and related trades workers	10.1 <sup>a</sup>	16.7 <sup>a</sup>	52.2	2.2	18.8	138
Elementary occupations	0.0	0.0	50.0	0.0	50.0	2

<sup>a</sup> Significant adjusted residuals

For women (Table 3,  $\chi^2 = 87.83$ ;  $df = 35$ ;  $p = .000$ ), “professionals” were more likely in the OCP “stability” (65.7%) and less likely in “family pattern” (11.4%). “Technicians and associate professionals” were more common in “downward pattern” (11.1%) and less common in “upward career” (12.0%). “Service and sales workers” had a higher probability for an “upward career” (26.1%) and a lower one for “stability” (18.5%). “Fluctuating patterns” were found among two-thirds of “skilled agricultural, forestry and fishery workers” (66.7%). Of all “Craft and related trade workers”, none could have been put in the “stability” group (0.0%). However, this analysis should be considered with caution since certain groups were not independent from one another, and there could have been floor and ceiling effects.

The highest *level of education* was significantly associated with OCP, this holds true for both men and women. For men (Table 4;  $\chi^2 = 45.16$ ;  $df = 20$ ;  $p = .001$ ), the pattern “stability” was found much more frequently among individuals with vocational education. They also had a higher probability for “horizontal changes”, but a lower probability for an “upward career” and “fluctuating patterns”. Those who had graduated with a baccalaureate degree more often showed “fluctuating patterns”. Men with advanced federal PET diploma or with University of Applied Science more often showed an “upward career”.

Regarding women, “upward” and “downward careers” were more frequent among those with vocational education (Table 5;  $\chi^2 = 69.41$ ;  $df = 30$ ;  $p = .000$ ). An “upward career” was more frequent among women with an advanced federal PET degree. The “family pattern” was more frequent among women with low or no further education, and “stability” was more frequent among women with Baccalaureate School/Teacher

**Table 3 Association between career pattern and ISCO-08 major group at age 19, women**

	Stability (%) (n = 86)	Horizontal changes (%) (n = 14)	Upward pattern (%) (n = 57)	Downward pattern (%) (n = 16)	Fluctuating pattern (%) (n = 43)	Family pattern (%) (n = 82)	N
Professionals	65.7 <sup>a</sup>	0.0	5.7 <sup>a</sup>	2.9	14.3	11.4 <sup>a</sup>	35
Technicians and associ- ate profes- sionals	35.2	0.0 <sup>a</sup>	12.0 <sup>a</sup>	11.1 <sup>a</sup>	14.8	26.9	108
Clerical support workers	15.8	7.9	26.3	0.0	13.2	36.8	38
Service and sales work- ers	18.5 <sup>a</sup>	8.7 <sup>a</sup>	26.1 <sup>a</sup>	2.2	14.1	30.4	92
Skilled agricultural, forestry and fishery workers	33.3	0.0	0.0	0.0	66.7 <sup>a</sup>	0.0	3
Craft and related trades workers	0.0 <sup>a</sup>	20.0 <sup>a</sup>	33.3	6.7	13.3	26.7	15
Elementary occupa- tions	16.7	0.0	50.0	0.0	0.0	33.3	7

<sup>a</sup> Significant adjusted residuals

**Table 4 Frequency distribution of career pattern by highest education level, MEN**

	Stability (%) (n = 41)	Horizontal changes (%) (n = 34)	Upward career (%) (n = 134)	Downward career (%) (n = 6)	Fluctuating pattern (%) (n = 60)	N
Low or no further education	20.0	20.0	20.0	0	40.0	5
Vocational education	19.6 <sup>a</sup>	19.6 <sup>a</sup>	41.2 <sup>a</sup>	3.3	15.7 <sup>a</sup>	153
Advanced federal PET diploma	7.1	5.4	60.7 <sup>a</sup>	0	26.8	56
Baccalaureate School/Teacher training	0	0	40.0	0	60.0 <sup>a</sup>	5
University of Applied Science	7.1	0 <sup>a</sup>	40.0 <sup>a</sup>	6.7	26.2	42
University/Federal Institute of Technology	20.0	0	40.0	6.7	33.3	15

<sup>a</sup> Significant adjusted residuals

**Table 5 Frequency distribution of career pattern by highest education level, women**

	Stability (%) (n = 90)	Horizontal changes (%) (n = 14)	Upward career (%) (n = 61)	Downward career (%) (n = 18)	Fluctuating pattern (%) (n = 45)	Family pattern (%) (n = 89)	N
Low or no further education	15.0	10.0	10.0	0	5.0	60.0 <sup>a</sup>	20
Vocational education	26.3	5.6	15.0 <sup>a</sup>	8.0 <sup>a</sup>	13.6	31.5	213
Advanced federal PET diploma	10.0	0	60.0 <sup>a</sup>	0	20.0	10.0	20
Baccalaureate School/Teacher training	59.3 <sup>a</sup>	0	14.8	0	11.1	14.8	27
University of Applied Science	33.3	0	33.3	3.7	18.5	11.1 <sup>a</sup>	27
University/Federal Institute of Technology	40.0	0	20.0	0	30.0	10.0	10

<sup>a</sup> Significant adjusted residuals

training. For both genders, a University/federal Institute of Technology degree had no significant association with career patterns.

Tables 6 and 7 show the results of the influence that various antecedents had on men's and women's different career patterns. We considered three aspects, namely parenting style of the mother in the adolescence, intelligence, and number of children.

Referring to *perceived control of the mother*, men whose mothers had shown little control and had permitted a high degree of autonomy were overrepresented in the career pattern "upward career" (2.57) and "fluctuating pattern" (2.75), in comparison with the pattern "horizontal changes" (4.03) ( $F = 1.13$ ;  $p < .05$ ). There were no significant

**Table 6 Differences in antecedents between occupational career patterns: means, univariate F tests, and post hoc comparison, men**

	Stability (1)	Horizontal changes (2)	Upward career (3)	Downward career (4)	Fluctuating pattern (5)	ANOVA		Post-hoc comparison
						F	$\eta^2$	
Parenting style								
Mother control	2.74	4.03	2.57	3.33	2.75	1.13*	.051	3, 5 < 2
Mother stimulation	3.26	2.79	2.64	3.5	3.12	1.29	.019	
Mother warmth	6.29	5.88	6.2	4.66	6.15	0.32	.017	
Intelligence	5.15	4.06	5.65	5.33	6.02	5.3**	.075	3, 5 > 2
Life roles								
Number of children	1.52	1.88	1.79	1.50	1.67	0.56	.008	

Post-hoc-test (equal variances: Bonferroni post hoc tests, unequal variances: Dunnett-T3)

\*  $p < .05$ , \*\*  $p < .01$

**Table 7 Differences in antecedents between occupational career patterns: means, univariate F tests, and post hoc comparison, women**

	Stability (1)	Hori- zontal changes (2)	Up-ward career (3)	Down- ward career (4)	Fluctuat- ing pat- tern (5)	Family pattern (6)	ANOVA		Post-hoc comparison
							F	$\eta^2$	
Parenting style									
Mother control	2.27	3.43	2.89	1.67	2.76	2.45	2.14	.033	
Mother stimulation	3.54	3.43	3.03	3.5	2.72	3.02	1.45	.023	
Mother warmth	6.48	6.36	6.38	6.39	5.96	6.46	0.47	.007	
Intelligence	5.6	4.43	4.95	5.44	5.30	4.92	2.0	.032	
Life roles									
Number of children	1.60	1.86	1.16	1.94	1.35	2.62	14.59**	.188	6 > 1, 3, 5

Post-hoc-test (equal variances: Bonferroni post hoc tests, unequal variances: Dunnett-T3)

\*\*  $p < .01$

differences between the OCP of men in terms of the parenting dimensions “stimulation” and “warmth”. Regarding women, there were no significant differences in terms of parenting style.

In terms of *intelligence*, significant differences were found between men’s career patterns ( $F = 5.30$ ;  $p < .01$ ): Highly intelligent men were overrepresented in the career pattern “upward career” (5.33) and “fluctuating pattern” (6.02), in comparison with the pattern “horizontal changes” (4.06). Referring to women, there were no differences.

There were no significant differences between the various career patterns and the *number of children* for men, but for women ( $F = 14.59$ ;  $p < .01$ ). Women with the OCPs

“family pattern” had more children (2.62) than women with the patterns “stability” (1.6), “upward career” (1.16) and “fluctuating pattern” (1.35).

### Consequences

Regarding outcomes, the career pattern determined the gross *income* in Swiss Francs (CHF) per year (Tables 8, 9;  $F = 5.82$ ;  $p < .01$  for men and  $F = 7.06$ ;  $p < .01$  for women). For the men, the group “upward career” (CHF 120,000) had a significantly higher median income than the group “horizontal changes” (CHF 79,000). Furthermore the group “fluctuating pattern” (CHF 109,286) earned significantly more than the group “stability” (CHF 80,000) and “horizontal changes” (CHF 79,000). Referring to women, the group “upward career” (CHF 97,500) had a significant higher income than all other groups.

With regard to the different *areas of satisfaction in life*, no associations were found for men. Regarding women, there were significant differences in overall satisfaction with life ( $F = 3.19$ ;  $p < .05$ ) and with family ( $F = 2.99$ ;  $p < .05$ ). Women with an “upward career” were more satisfied with their life (4.83) than women with a “fluctuating pattern” (4.16), and those with a “family pattern” were more satisfied with their family (9.25) than women with a “stable career pattern” (8.37). Regarding *the motivating potential of the current job*, there were differences between the OCP ( $F = 2.95$ ;  $p < .05$  for men and  $F = 3.02$ ;  $p < .05$  for women). Persons with an “upward career” showed more motivating potential in their work than persons with the “horizontal change pattern”, independently of gender (3.93 and 3.98, respectively). Lastly, there were some differences in *level of employment* ( $F = 3.59$ ;  $p < .05$  for men and  $F = 4.74$ ;  $p < .01$  for women). Men with “upward careers” had a higher level of employment (98.2) than men with “stable

**Table 8 Consequences between different occupational career patterns: means, univariate F tests and post hoc comparison, men**

	Stability (1)	Horizontal changes (2)	Upward career (3)	Downward career (4)	Fluctuating pattern (5)	ANOVA		Post-hoc comparison
						F	$\eta^2$	
Income (median)	80.000	79.000	120.000	78.000	109.286	5.82**	.091	5 > 1, 2; 3 > 2
Satisfaction with life scale	4.49	4.07	4.42	3.40	4.32	2.86	.043	
Satisfaction with ...								
Job	8.49	7.71	7.90	6.67	7.85	1.83	.026	
Family	8.36	8.09	8.53	7.83	9.74	0.75	.011	
Financial situation	7.44	6.68	7.69	6.33	7.73	2.25	.032	
Health	7.63	7.00	7.52	5.83	7.07	1.74	.025	
Work								
Motiv. potential	3.73	3.61	3.93	3.82	3.87	2.95*	.050	3 > 2
Level of employ- ment	91.94	98.28	98.24	91.67	93.98	3.59*	.055	3 > 1

Post-hoc-test (equal variances: Bonferroni post hoc tests, unequal variances: Dunnett-T3)

\*  $p < .05$ , \*\*  $p < .01$

**Table 9 Consequences between different occupational career patterns: means, univariate F tests and post hoc comparison, women**

	Stability (1)	Hori- zontal changes (2)	Up-ward career (3)	Down- ward career (4)	Fluctuat- ing pat- tern (5)	Family Pattern (6)	ANOVA		Post-hoc com-parison
							F	$\eta^2$	
Income (median)	85.357	50.000	97.500	69.500	70.000	63.750	7.06**	.136	3 > 1, 2, 4, 5, 6
Satisfaction with life scale	4.43	4.63	4.83	4.16	4.16	4.59	3.19*	.052	3 > 5
Satisfaction with ...									
Job	8.07	7.43	8.32	7.67	8.20	8.05	0.82	.013	
Family	8.37	9.07	8.69	8.83	8.56	9.25	2.99*	.047	6 > 1
Financial situation	7.36	7.50	7.98	6.89	6.93	7.60	1.34	.021	
Health	7.28	7.57	7.85	6.89	7.37	7.97	1.82	.028	
Work									
Motivat. potential	3.85	3.47	3.98	3.67	3.82	3.75	3.02*	.058	3 > 2
Level of employ- ment	70.18	69.64	78.87	61.36	70.49	58.23	4.74**	.084	6 < 1, 3

Post-hoc-test (equal variances: Bonferroni post hoc tests, unequal variances: Dunnett-T3)

\*  $p < .05$ , \*\*  $< .01$

careers" (91.9). Women with "family patterns" worked less (58.2) than women with "stable courses" (70.2) and "upward careers" (78.9).

## Discussion

### Findings and conclusions

Longitudinal research designs, studies investigating longer career development beyond school years and young adulthood, and studies focusing on women's career development are still rare. Various authors have considered the importance of investigating the developmental perspective on vocational behavior (e.g. Jepsen and Choudhuri 2001; Savickas 2001; Vondracek and Hartung 2002; Schulenberg and Schoon 2012). The main goal of the present study was to describe occupational career patterns using 30 years of data from a representative sample of men and women from the German speaking part of Switzerland, and, in addition, to examine potential antecedents and consequences.

We found that women's and men's OCPs were different. In terms of stability and change, patterns of "upward mobility" and "fluctuating patterns" were prevalent in men's OCPs. On the other hand, the "family pattern" with several interruptions and the "stable pattern" were prevalent in women's OCPs. Few persons (but particularly women) experienced downward mobility in their careers. Women stay in the same occupation/position more frequently and move forward to leading positions more rarely. Women have more unfavorable patterns, such as moving downward, compared with men.

In the present study, we also found an important dependency between OCP and occupational categories. For both genders, the "stable pattern" is more common for "professionals" at age 19. On the other hand, women who started their career in the category "service and sales workers" are more likely found in the pattern "upward career".



According to our data, people with “upward careers” had often started their careers by doing an apprenticeship (e.g., in industrial or commercial occupations) and later were promoted to a managing position (e.g. leading his/her own company). Leemann and Keck (2005) found that young women are entering vocational education more frequently for personal service jobs, while young men more often select industrial-technical occupations. This gender-specific distribution is also called “horizontal gender segregation” (Charles 2005). Some occupational fields (e.g. teachers—“professionals”) have less occupational mobility than other fields (Leemann and Keck 2005).

On the whole, our results show that in today’s professional careers, linear career courses (such as “stable courses”) or reaching a higher-status position (“upward careers”) are still common, but modern career models with several occupational changes (“fluctuating patterns”) have probably become more frequent recently. In accordance with this result, the career pattern “protean career” describes changes as a new element of today’s career patterns (Hall 2004). On the other hand, the present study contains a specific cohort in a specific economic and sociohistorical context: Women from the former generation were probably more often housewives than women from more recent generations.

Previous research on careers suggests that occupational development is a process of interaction between the individuals and his/her environment, especially the family-system (Vondracek et al. 1986; Whiston and Keller 2004). The impact of family of origin on vocational behavior has repeatedly been asserted. In many studies, social background and also educational level have proven to be central determinants of the vocational and the career patterns. Especially in Switzerland, with a system of early selection decisions, these influences have frequently been confirmed, at least for the start of the career (Becker 2013; SKFB 2014). The present study investigated the influence of the family on the long-term career development profiles.

We found that social class had only a significant impact on OCPs of men. The quality of relationship to the parent during childhood and adolescence, and the parenting style may be of importance for future vocational behavior (Whiston and Keller 2004). The present study could support this assertion, but not for all OCPs, and only in men’s career patterns: The mother’s parenting style control vs. autonomy has an impact on the career patterns “upward career” and “fluctuating pattern”. In accordance with this result, Whiston and Keller (2004) found that a career development (e.g. occupational aspiration) involves an open and supportive interaction with the parents, where there is mutual respect and encouraged autonomy.

Regarding the individual factors, we found a relationship between intelligence and the career patterns “upward career” and “fluctuating pattern”, but only for men. In accordance with the literature, results from longitudinal studies show that intelligence in youth and adulthood had an impact on the occupational status over the life span (Deary et al. 2005; Judge et al. 1999; Weinert and Hany 2000). Highly intelligent people usually commit to more further education and take more managing functions (Spiess Huldi 2009).

The antecedents of youth (SES, relationship to the parents and intelligence) seem to influence only the OCP of men. For women, the relation between OCPs and individual life roles is stronger than the association with these early factors. We found similar results for social status (Häfeli et al. 2015).

Furthermore, our study shows that OCPs are associated with the way individuals develop multiple role-activities over the life-span. It was found that high occupational standing and “upward mobility” were associated with a life style characterized by higher job involvement, higher work percentage, and limited family role responsibilities (only for women). Furthermore, it was found that upward mobility was associated with high investment in education (overrepresented among persons with advanced federal PET diploma and PET College Degree/University of Applied Science). Part-time working and OCPs with long career interruptions due to childcare (“family pattern”) were related to lower occupational standings with low or no further education. Women with a higher number of children were overrepresented in “family patterns”.

The results show that OCPs are related to life roles and, hence, implies the importance of career guidance agencies especially for women’s career development (Hakim 2000). The results of the present study also show that the relation between OCP’s and individual life roles is stronger than that with the family of origin. This is in line with other studies suggesting that careers are becoming more and more diversified and that this can be attributed to high personal agency and decreasing influence of social constraints (Hakim 2000; Heinz 2003).

Lastly, we investigated some potential consequences of OCPs. The results show that the individual career development matters in terms of later career success and well-being/quality of life. Our study confirms the general assumption of more beneficial consequences for “upward mobility” (Smart and Peterson 1997; Huang and Sverke 2007) and “stable careers” (Lynch and Smith 2005), in comparison with “downward mobility” and “horizontal changes”. In particular, the pattern “upward mobility” is the most successful one when regarding later income. An exception is the “fluctuating pattern”, that also reveals to have beneficial consequences regarding income. This pattern is prominent among men. According to Baruch (2004), linear career courses, which are defined by achieving a higher status in a position, will be outdated more and more by modern career models. Sullivan and Baruch (2009) describe, among others, “the boundary-less” and “the protean career” as new, modern career patterns. Herein, individuals are regarded as being flexible and free; they are always ready to learn something new, and they look for inner satisfaction.

Regarding the satisfaction we found differences in some of the OCP’s, but only in the career courses of women. Different career patterns seem to fit different groups of women: Family-oriented women are more satisfied with their families than other groups, career-oriented women are more satisfied with their lives and their job than some other groups.

Furthermore, we found women and men in upward mobility pattern to perceive their work situation as more motivating, in comparison to most other OCPs, which is consistent with previous research. For example, Parasuraman and Simmers (2001) show that, in comparison with organizational employees, self-employed persons (with leadership functions and the “upward career” pattern) perceived higher autonomy and time flexibility at work, and had higher job involvement and job satisfaction. Huang and Sverke (2007) found that persons with upward mobility reported to perceive their job as more stressful (e.g. more role conflict), and to have larger conflicts between work and family domains; these women had to sacrifice family role commitments in order to advance their occupational careers.

### Conclusions for the practice

Our study followed career patterns over 30 years and we took nine time points into consideration. We suggest that for career counseling, it is important to look into the future and talk about longer perspectives. The study has revealed several implications for career guidance, policy and counseling:

First, counseling of men and women should be designed partially differently. Women less often show patterns of the “upward career” type compared to men. The reasons for that are—especially in occupations preferred by women—fewer opportunities for advancement are possible, or that there is only an incomplete training and continuing education and training system available (Häfeli et al. 2015). By now, this has probably been improved thanks to the new vocational training act (BBG), the organization and structure of Universities of Applied Sciences (tertiary level A) and the continuing development of higher vocational education and training (tertiary level B). It remains unclear, what effects a higher educational level and an increased labour market participation by women with children have on the younger generation. Career guidance should be provided beyond the school years to help young women and men make unobstructed transitions.

Secondly, regarding upward mobility, the educational level plays an important role: For advancement in the occupational career, further education over the life span is a basic resource. Especially the education type “Higher Vocational Training” or “University of Applied Science” is a good basis for professional advancement. Career guidance should help people to look beyond their apprenticeships. Therefore, training is needed, as Lee and colleagues (2009) emphasize: Continuous further training and professional education helps to find one’s way in today’s non-traditional career patterns.

Thirdly, we found evidence for the assumption that mobility in different directions (upward and downward in turn) is more widespread in today’s careers. Gottfredson (1977) postulates that redirection is common until the late 30 s but not thereafter. Regarding our results, this may have changed, and this, in turn, may have an impact on the career counseling (e.g., job changes). Instead of counseling clients to go through normative occupational paths, it is important to consider individuals’ overall life-role development, where occupational development is located as one part (Jepsen 1994; Savickas 1995; Super 1980).

### Strengths and limitations of the study and implications for future research

As for all research, the results of the present study may have been influenced by some potential limitations. The presented survey contains a specific cohort in a specific economic and sociohistorical context: Our sample represents Swiss citizens from the German-speaking part of Switzerland, and, therefore, caution should be paid in generalizing the results. In order to ascertain whether the results are also valid for other cohorts, comparisons with younger and older cohorts ought to be made (Lyons et al. 2012). This way, it would be possible to make a distinction among period-, cohort- and life-history effects. It would be interesting to find out how the educational reforms on the tertiary level (see “Findings and conclusions” section), the continuing increased educational level of the population, and the increase of the gainful employment of women influence the careers of younger cohorts.

A second limitation concerns the sample size. Although the whole sample was of substantial size, some of the cells in the tables were small, leading to low statistical power to find significant differences when smaller groups were compared. However, we were more interested in the general effects and overall trends (and separately for women and men), thus making this limitation negligible.

A third limitation contains the categorization of the occupational career patterns. For the categorization of the OCPs, seven points in time over a period of 30 years were considered. What specifically happened between the prevailing successive points of time with regard to the occupation was not taken into consideration in this study. The categorization of the career patterns was carried out with the ISCO-08 classification. By doing this, only the occupational main group was considered. Stability in terms of the occupational main group does not mean that the job had not been changed. There is also the problem of the ceiling effect: The higher the occupation is rated, the smaller the probability of advancement. The ISCO classification describes occupational classes; however, it places more emphasis on evaluating the educational level and the occupational status.

Despite these limitations, this study clearly shows which career patterns women and men generally show up to middle adulthood. It also sheds light on explanatory factors, i.e. that the family background has an impact on occupational career development as well as the personal life situation. Referring to potential outcomes, we found upward mobility and stability to enable more beneficial consequences than some changing patterns (downward career and horizontal changes)—even when a period of more than 30 years is investigated.

#### Authors' contributions

CS, AH and AK collected the data, entered it, analyzed it together and drafted the manuscript. CS, AH, AK and KH reviewed it and approved the final version. All authors read and approved the final manuscript.

#### Acknowledgements

This publication arose from the joint research project "Continuity and change: Interaction of personality and occupation up to the age of 52 years", funded by the Swiss State Secretariat for Education, Research and Innovation.

#### Competing interests

The authors declare that they have no competing interests.

Received: 14 November 2015 Accepted: 17 November 2016

Published online: 25 November 2016

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