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RESEARCH ARTICLE

How have women's employment patterns during young adulthood changed in Chile? A cohort study

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The period of young adulthood is a decisive stage for women's employment pathways. Individual characteristics (such as marriage, parenting and education) and contextual factors (decommodification, defamilialisation and labour-market flexibility, for example) play a significant role in shaping work trajectories during these years. However, due to cultural, social and economic change, employment histories during young adulthood may vary significantly among women of different generations. This study analyses and compares long-term employment patterns during young adulthood (defined as ages 25 to 39) among two cohorts of women born around 1958 (N = 2,244) and 1969 (N = 2,231) in Chile, an under-studied country in life-course research. We analyse four major dimensions of female employment patterns across cohorts – (1) diversity, (2) prevalence, (3) dynamism and (4) socio-demographic characteristics – and propose four corresponding hypotheses. To test these hypotheses, we used data from Chile's Social Protection Survey – an exceptionally rich longitudinal survey – and employed sequence analysis to construct a typology of labour-force trajectories for each cohort. The results show some elements of continuity between cohorts' employment patterns, such as their diversity and socio-demographics, as well as important changes in their prevalence and dynamism. In the concluding section, we discuss the contributions of this in-depth single-country study for the field of life-course research, particularly to the cultural and policy implications of the current configuration of women's working lives.

Key words women • employment • cohort • life course • welfare state • sequence analysis • Chile

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Introduction

Life-course research has characterised female employment histories as typically not fitting the conventional occupational sequence of educational training, full-time jobs in continuous careers and then full access to retirement benefits (Levy and Widmer, 2013). Instead, a significant number of women who complete their educational training and move towards full-time work are pushed or pulled from the labour market as soon as they become mothers. Following this, they may occasionally return to paid work, but often in disadvantaged positions that impact their retirement timing and pension contributions (Widmer and Ritschard, 2009; Madero-Cabib and Fasang, 2016; Mortelmans and Frans, 2017).

Within the course of women's lives, the years of young adulthood – defined as the age span from 25 to 39 – is a highly decisive stage for their employment pathways. Life-course research has analysed various characteristics associated with this age range that significantly influence women's work trajectories, such as marriage, childbirth, and education (Drobnič et al. 1999). Existing scholarship has highlighted that women who marry during young adulthood and stay married are less likely to maintain a strong attachment to the labour market and are more likely to exit paid employment than those who remain single (Madero-Cabib and Fasang, 2016; Ponomarenko, 2016). Similarly, an earlier timing of a first child and a greater number of children can also impact women's work trajectories by weakening their permanence in paid work, delaying their entry to the labour force, or, in contrast, pushing women to seek paid work later in life, once they have completed their childcare responsibilities (Hynes and Clarkberg, 2005). Studying at university, however, can significantly increase attachment to the labour market and entry to a greater variety of career paths (Struffolino et al. 2016). Finally, recent studies have found that women who continue participating in the labour market after childbirth do not necessarily decrease their unpaid domestic workload, including childcare. Instead, women often experience social pressure to distribute their time between paid and unpaid work (Sullivan, 2013; Davia and Legazpe, 2014; Lyonette and Crompton, 2015).

Life-course research has also analysed how women's attachment to the labour force and work–family balance depend strongly on a country's welfare regime and macro-level characteristics (Pailhé et al. 2013; Worts et al. 2013). This includes the degree of *decommodification* in each country, that is, the reliance on the labour market to provide economic and social well-being (Cooke, 2014; McDonough et al. 2015; Ponomarenko, 2016). It also considers the degree of *defamilialisation* of each country, which is to say the extent to which the care workload is redistributed or, in other words, the comprehensiveness of family-related public policies, such

as childcare, parental leave and school-hour regimes (Danforth, 2014; Neilson and Stanfors, 2014; Grunow and Aisenbrey, 2016). It analyses the *gender norms* in local labour markets – the extent to which female employment is socially encouraged or how strong cultural beliefs promote specific types of jobs for mothers, for instance (Undurraga, 2011; Saxonberg, 2013; Gauthier et al. 2016). Finally, it includes the degree of *flexibility in the labour market* allowed for parents, such as flexible working hours, financial autonomy and non-standard work schedules (Ciccia and Bleijenbergh, 2014; Pollmann-Schult, 2016).

Female employment histories may also vary significantly over time due to changes in cultural, social and economic dimensions, as well as transformations in gender norms. Therefore, another relevant aspect to consider when analysing the configuration of women's work histories is the cohort to which each woman belongs. As demonstrated in classical life-course studies, studying cohort changes can be a powerful tool for understanding social changes (Ryder, 1965; Giele and Elder, 1998). Previous studies have identified important life-course differences among women of different cohorts, highlighting an increased heterogeneity in the pathways of younger females. In recent decades, important changes like the flexibilisation of labour markets, greater access to tertiary education, the emergence of more comprehensive public childcare programmes, and increasingly egalitarian gender values have all pushed women from later cohorts towards less predictable (Worts et al. 2013), more diverse (McMunn et al. 2015), less homogeneous (Simonson et al. 2011) and more complex (Neilson and Stanfors, 2014) life histories than their older counterparts. This has, expectedly, also meant important changes in the work pathways of younger women, who, in contrast to previous generations, report greater labour-market participation and permanence, a greater presence in white-collar and traditionally male career paths (Smeaton, 2006; Percheski, 2008; Yu, 2009) and more dynamic work trajectories (Simonson et al. 2011).

We are interested in adding to this literature by exploring the young adulthood work histories of women of two different cohorts in Chile, a liberal-oriented country with a male-breadwinner culture that has recently undergone political and economic transformations and has been under-studied on this topic. As discussed in the conclusion, we believe Chile is an interesting case for cross-national research on women's labour paths because, among other reasons, it deviates from the norm in liberal-oriented nations, in which women frequently access the labour market through part-time or independent work (Madero-Cabib, 2015, 2017; McMunn et al. 2015; Lain, 2016).

In this study, we analyse and compare long-term employment patterns during young adulthood in two different cohorts of women born approximately ten years apart (around 1958 and 1969) regarding four major dimensions of these patterns: (1) their diversity; (2) their prevalence; (3) their dynamism; and (4) their socio-demographic characteristics correlates. We used data from Chile's Social Protection Survey (*Encuesta de Protección Social*), an exceptionally rich longitudinal survey, and employed sequence analysis to construct a typology of labour-force trajectories for each cohort.

The article is organised as follows. In the first section, we discuss recent longitudinal quantitative literature examining the labour-force participation of women during young adulthood in different welfare states. Next, we introduce key elements of the gendered work context in Chile in recent decades. We then present our four main research hypotheses, followed by a description of the dataset, samples, variables and

longitudinal methods employed in this study. In the results section, we show the typology of labour-force trajectories that characterise the main long-term employment patterns of women aged 25 to 39 across two different cohorts. Finally, we review the results with reference to, first, cross-national findings on women's working lives, and, second, the gendered work context in Chile by discussing productive and reproductive work in women's life courses.

Female work pathways in young adulthood across different welfare states

In this section, we discuss some key findings of life-course studies that have substantially contributed to understanding women's work pathways during young adulthood in countries with divergent welfare regimes.

Various researchers have recently published remarkable findings regarding the employment, marital and parental trajectories of women in the United States (US) and the United Kingdom (UK), two liberal-oriented countries (Worts et al. 2013; McDonough et al. 2015; McMunn et al. 2015). One of these studies (McDonough et al. 2015) analysed the employment and marital histories of American and British mothers aged 25 to 39. The authors concluded that, while both liberal welfare states have a high share (about 70%) of women active in the labour force during young adulthood, part-time work is a more common means of labour-market engagement for women in the UK than in the US. In another paper, this same group of scholars reaffirms that part-time employment in the UK is a frequent means of engagement in the labour market, even for later cohorts of women (McMunn et al. 2015).

A study on Spain analysed the employment, marital and motherhood histories of women from ages 16 to 35 (Davia and Legazpe, 2014). According to the authors, only about 50% of the research sample displayed a strong attachment to the labour force because – as in other Southern European countries – Spain's male-breadwinner culture has led to deficient coverage of public childcare services and poor access to flexible working patterns, which have, in turn, made it difficult for women to balance employment and family life.

Another study, focused on the former West Germany, examined the employment trajectories of heterosexual couples for 20 years after the birth of their youngest child (Langner, 2015). Couples analysed were those in which the woman was born between 1956 and 1965. The study showed that both partners remained permanently attached to the labour force in full-time jobs during the years analysed in only 3.1% of couples, and only 12.9% of women went back to work in full-time positions at some point after childbirth. The author concluded that this is a consequence of the low cultural and institutional support for mothers' paid employment in the former West Germany.

Finally, in one of the few studies that have analysed employment pathways across the whole of women's working lives, Ponomarenko (2016) explored the effect of employment between ages 15 and 60 on subjective well-being in retirement for women and men after age 60 across 13 European countries with divergent welfare state characteristics. The paper outlined six representative employment pathways for women, distributed differently across European welfare states. We focus on three of these. The *full-time* pathway referred to women working in full-time jobs across the entire period of observation. One important aspect of this pathway is that 37% of

the women within it were from former communist countries, such as Poland and the Czech Republic, in which female labour-force participation was often encouraged. On the other hand, the *part-time* and *inactivity* pathways referred to groups of women who were in full-time positions in their early twenties, but changed their work status to part-time positions and inactivity, respectively, around age 25, remaining in these statuses until around age 60. In contrast to the *full-time* pathway, which was composed mainly of women from former communist countries, these pathways were typically followed by women from conservative welfare states, such as Germany, Switzerland and the Netherlands. According to the author, this is because these countries provide multiple institutional mechanisms that encourage men to be the household breadwinners and women to manage most domestic tasks.

The gendered work context in Chile

Chile is considered a successful example of a new open market economy and has been called 'the Chilean miracle' (Richards, 2013). However, the country still suffers substantial levels of social inequality (Han, 2012; Richards, 2013). These inequalities are not gender-neutral, and they manifest in the labour market in various ways: through stark differences in men's and women's participation rates, a gender pay gap, gender occupational segregation and overt gender discrimination at work (Undurraga and Barozet, 2015; Mora and Blanco, 2018; Undurraga, 2018, 2019).

The female labour-force participation rate (calculated on women aged 15+) in Chile has historically been low. From 1920 to 1982, it fluctuated between 20% and 25% (PNUD, 2010). In 1985, it was 28.7%; in 1995, it increased to 34.4%; and in 2002, it was 35.1% (Godoy et al. 2009). In 2007, it was 38.5%, while in 2018 it reached 48.7% (INE, 2018). Despite the dramatic increase during those last ten years, women's participation in the labour market is still low compared to that of men (70.5%), that of women in Latin America (Undurraga, 2013; ComunidadMujer, 2016), and that among Organisation for Economic Co-operation and Development (OECD) member countries (OECD, 2019). According to 2019's OECD data, Chile's 48.7% female labour-force participation is below the average of 61.0% among OECD countries and is only higher than those of Turkey (33.1%), South Africa (37.6%), Greece (45.5%) and Mexico (45.7%).

The changes in women's participation in the labour market in Chile may be related to the country's political, cultural and economic transformations. During Pinochet's dictatorship (1973–90), neo-liberal reforms were implemented (Undurraga, 2016). These included the privatisation of the major nationally owned companies and the implementation of a new social security system, along with liberal work reforms, such as labour flexibility, the liberalisation of employee dismissal, and collective bargaining restrictions (Acuña, 2008; Chuchryk, 1989). During the 1990s, Chile became politically and economically stable; it began to serve as the development model for the rest of Latin America (Sehnbruch, 2006); and, in January 2010, became a member of OECD.

Chile follows a 'male-breadwinner / female-home-carer' model (Undurraga, 2013), reproduced through cultural beliefs and gender norms, as well as social policies and programmes that reinforce women's role as the main providers of care, thereby reducing *defamilialisation* (Grunow and Aisenbrey, 2016). For instance, Chile's statutory parental leave for mothers is about six months, while that for fathers is five

days. Women may transfer a maximum of six weeks of this benefit to their male partners; however, according to official statistics, only 0.2% of parental leave in the last seven years was used by fathers (*Subsecretaría de Previsión Social*, 2018). Though companies with more than 20 female workers are required to provide – either directly or indirectly – nursery services to all children aged two or younger, working fathers are excluded from this benefit (Article 203 of the Labour Code: *Dirección del Trabajo*, 2018). Nevertheless, only 11.7% of firms in Chile report having hired 20 or more women (*Dirección del Trabajo,* 2016), meaning that a majority of working mothers with formal employment, as well as those in the informal economy, cannot access these childcare benefits. Additionally, although public provision of childcare has increased in the last decade, the country's coverage of childcare and preschool services for infants and children from birth to age two is only 19.2%, while the average among OECD countries is 34.4% (OECD, 2014). As elsewhere, private childcare is affordable only to more wealthy families in Chile (Arriagada and Todaro, 2012).

In addition to its low levels of female employment, traditional gendered work culture and low degrees of defamilialisation, the Chilean labour market is characterised by a tendency towards full-time employment and a lack of flexible work alternatives. Work policies and labour rights mainly refer to full-time, standard employment (the legal full-time working week became 45 hours in 2005, down from 48 hours) and do not consider non-standard forms of work, such as part-time jobs or self-employment, which may offer more possibilities for both men and women to develop careers.

Finally, this gendered work context affects not only the labour-force participation of women, but also the formality of the labour market. In the 1980s, neo-liberal policies included a pension reform that introduced a defined-contribution individual retirement account (IRA) scheme, entirely replacing a public-defined benefit pay-as-you-go (PAYG) scheme. Promoters of this reform assumed that, as pension income would depend exclusively on workers' contributions (in the Chilean IRA system, neither the employer nor the state contribute to personal pension accounts), this would encourage workers to contribute to their pension funds on a regular basis (Orszag and Stiglitz, 2001). Policy makers also assumed that the IRA pension system would encourage stable and formal employment to contribute continuously to earnings-related pensions (Callund, 1999; Corsetti and Schmidt-Hebbel, 1995). Thus, one of the purposes of the IRA pension system was to increase formal employment, often understood in Chile as employees in full-time positions contributing to their pension accounts (Corsetti and Schmidt-Hebbel, 1995). However, as previous literature has shown (Ginn et al. 2001), when IRA pension schemes exist in countries with strong male-breadwinner cultures (such as Chile), individuals who have active and continuous participation in the labour market (mostly men) tend to occupy formal jobs. A discontinuous attachment to paid work, often due to family and household related tasks (primarily among women), restricts access to formal employment.

Research hypotheses

We analyse and compare employment patterns during young adulthood in two different cohorts of women born approximately ten years apart (around 1958 and 1969). Based on the international and national literature we have discussed, we present four corresponding research hypotheses.

H1 – *Diversity*: Employment patterns will be more diverse among the later cohort.
H2 – *Prevalence*: Employment patterns reflecting a continuous attachment to the labour market will be more prevalent among the later cohort, while patterns reflecting greater inactivity and a weaker attachment to the labour market will be more prevalent among the earlier cohort.
H3 – *Dynamism*: Employment patterns among the later cohort will be more dynamic than among the earlier cohort; that is, patterns among younger women will include more transitions in work statuses within a pathway.
H4 – *Socio-demographics*: Among both cohorts, women in employment patterns reflecting a continuous attachment to the labour market will have, on average, more years of education, fewer children, a later age at first childbirth and first marriage, and a lower marriage rate than women whose employment patterns reflect inactivity and a weaker attachment to the labour market. This difference, however, will be stronger among the earlier cohort.

Data, variables and methods

Data

For the analysis, we used data from the Chilean Social Protection Survey, the largest (five waves) and oldest (since 2002) longitudinal survey carried out in Chile (see the Supplementary Material (Madero-Cabib et al. 2019: 1) for an in-depth explanation of the waves, response rates, refusal rates and weighted factors of this survey). Each of the five waves of the Social Protection Survey included a module focused on retrospective work histories, requesting self-reported labour-force participation information from 1980 to 2015, including periods of employment, unemployment, and inactivity (see the Supplementary Material (Madero-Cabib et al. 2019: 4) for further explanation of the retrospective work histories modules). From these five work history modules, we created a data set focused on the labour-force participation of each individual between 1980 and 2015. The starting age of the work histories varies widely within the survey sample, depending on how old respondents were in 1980. For example, respondents reported information from the age of 20 (if they were 20 years old in 1980), others from the age of 38 or 55, and so on.

In this research, we focus on two cohorts of women who reported their working histories during young adulthood; that is from their 25th birthday to their 40th birthday (ages 25–39). The observation period begins at age 25 because official statistics in Chile consider 'young people' those aged between 15 and 24 years old, and 25 is the average age in which the population with higher education enter the labour market (INE, 2017), which might be considered a key milestone to define the transition to young adulthood.

In the Social Protection Survey there were 4,475 women who reported their working histories across ages 25–39. The average birth year of these women is 1964, with a standard deviation of 6.59, while the median birth year is 1963. For our analyses we split these 4,475 women into two samples according to those who were born in 1964 or after, and those who born in 1963 or before. These two samples represent the two cohorts in our study. The earlier cohort comprises 2,244 women, and its average birth year is 1958 (standard deviation of 3.1), while the later comprises 2,231 women, and its average birth year is 1969 (standard deviation of 4.0).

As Figure 1 illustrates, the starting observation years for the earlier and the later cohorts were approximately 1983 and 1994, respectively, while the ending observation years were approximately 1998 and 2009, respectively. At the bottom of this figure, we refer to main economic and political events in Chile that might have impacted the social context faced by the women under study.

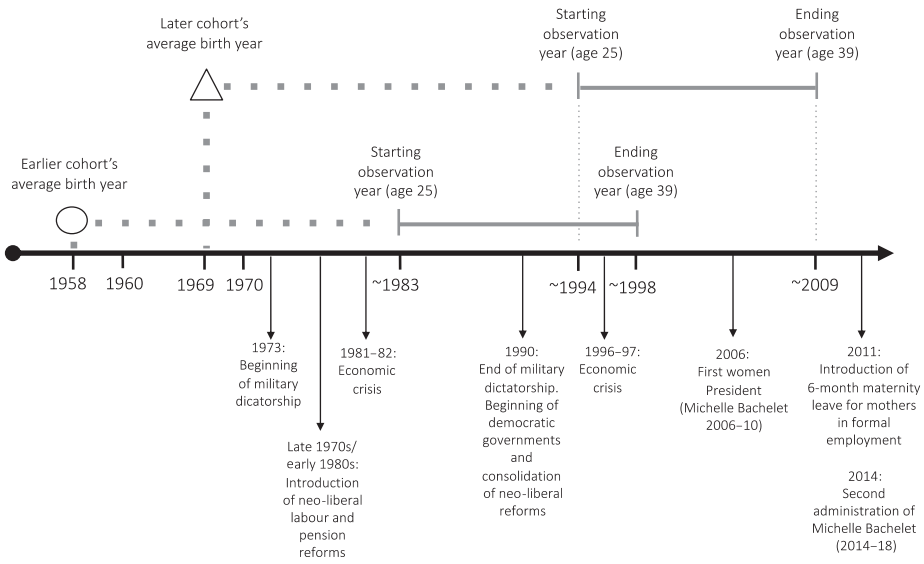
Regarding missing data, we tolerated cases with a maximum of 15% of missing values in any monthly observation during the 15 years of analysis. Only 0.09% of cases in the earlier cohort and 0.4% of cases in the later cohort had this proportion of missing values, so they came within the tolerated sample. To check that this criterion for missing values did not affect our results, we performed the main analyses of this research excluding from both cohorts cases containing missing values in any monthly observation and compared the results with the results presented in this research, in which missing values were treated as an additional category of analysis. The results remained stable across both samples (see the Supplementary Material (Madero-Cabib et al. 2019: 5)).

Variables

Based on the literature, our analysis of employment patterns among both cohorts included four central aspects of labour-market participation and employment formality:

1 Whether women worked (paid work) or did not work (including inactive and unemployed).
2 Whether women worked in a full-time position (more than 30 hours per week) or a part-time position (30 hours or less per week).
3 Whether women worked as employees or were self-employed.
4 Whether women contributed or did not contribute to a pension fund.

Figure 1: Observation years of working lives in both cohorts (top) and main economic and political events in Chile (bottom)



While including additional employment characteristics in the analysis (for example: industry sector, occupation or income level) would have been technically possible, it would have created too many work status possibilities, complicating the results and raising their complexity to an unnecessary extent.

For the analysis, we combined the four aspects listed above to create nine mutually exclusive work statuses, each indicating the labour-force position of an individual in a given month:

1 Full-time employee contributing to pension (*FT employee contributions*)
2 Full-time employee not contributing to pension (*FT employee no contributions*)
3 Full-time self-employed contributing to pension (*FT self-employed contributions*)
4 Full-time self-employed not contributing to pension (*FT self-employed no contributions*)
5 Part-time employee contributing to pension (*PT employee contributions*)
6 Part-time employee not contributing to pension (*PT employee no contributions*)
7 Part-time self-employed contributing to pension (*PT self-employed contributions*)
8 Part-time self-employed not contributing to pension (*PT self-employed no contributions*)
9 Not employed

Additionally, to provide further insight on the socio-demographic characteristics of different women's employment patterns, we also considered the following indicators: year of birth, education level (primary, secondary, tertiary), number of children (zero, one, two, three or more), age at first childbirth, marital status (married or partnered, divorced or separated, widow, single) and age at first marriage.

Methods

To evaluate the four dimensions of employment patterns (*diversity*, *prevalence*, *dynamism* and *socio-demographics*) in each cohort of women, we constructed types of labour-force trajectories using sequence analysis. This longitudinal statistical tool first aims to create sequencing data: that is, wide-format datasets in which each row corresponds to an individual's sequence of work statuses and columns represent different time points in which work statuses are experienced (in this research, successive months during a 15-year period). Second, sequence analysis aims to identify similarities and differences between all possible pairs of individual sequences, taking into account variations in work statuses, their timing within the period of interest and their chronological order. Comparing similarities and differences between every pair of individual sequences yields a *distance matrix* that summarises the modifications (substitution and/or insertion/deletion) needed to change one sequence into another. To calculate these distances, we employed optimal matching analysis (OMA), specifically setting constant the substitution costs at 2 and the indel costs at 1 (MacIndoe and Abbott, 2004).

After creating the distance matrix, we developed a hierarchical cluster analysis that we applied to the matrix. This allowed us to group similar individual sequences within clusters: that is, sequences of similar types of work statuses experienced at similar points of time in the respondent's life and in a similar chronographic order. We used the Ward method (Ward, 1963) to agglomerate individual sequences and the average silhouette width (ASW) index to identify the most robust number of clusters to adequately

summarise the variety of employment patterns. An ASW index score closer to 1 on a scale of 0 to 1 indicates a higher level of robustness (Kaufman and Rousseeuw, 1990). Each cluster of aggregated sequences created represents a different type of labour-force trajectory, with each trajectory summarising a particular employment pattern.

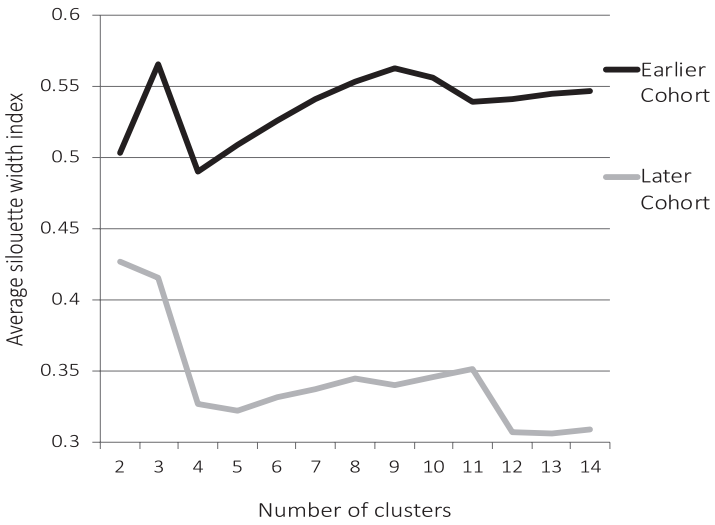
Hypothesis 1 (on the diversity of employment patterns across cohorts) was evaluated by comparing the created types of labour-force trajectories between the later and earlier cohorts. For Hypothesis 2 (on the prevalence of employment patterns across cohorts), we compared rates of similar types of labour trajectories in the later and earlier cohorts. To evaluate the dynamism of employment patterns in both cohorts (Hypothesis 3), we analysed the internal heterogeneity of similar types of labour trajectories in the later and earlier cohorts. To accomplish this, we examined the entropy, complexity and turbulence indexes. These three indicators reflect the extent to which trajectory types are heterogeneous at every time point in an observation period (between ages 25 and 39). Lower values (closer to 0) indicate low heterogeneity, and higher values indicate high heterogeneity (see the Supplementary Material (Madero-Cabib et al. 2019: 8) for an in-depth explanation of these indicators). Finally, to evaluate Hypothesis 4 (on the socio-demographics of employment patterns across cohorts), we examined the proportions of women with different educational levels, number of children, marital statuses, and ages at first childbirth and marriage for similar types of labour trajectories in the later and earlier cohorts.

All statistical analyses were performed in R (R Core Team, 2018), using the add-on TraMineR package specifically designed for sequence analysis (Gabadinho et al. 2011).

Results

First, we identify the most robust number of labour-force trajectories (reflecting different employment patterns) in each cohort. As indicated in Figure 2, 10 and 11 labour-force trajectories seemed appropriate to illustrate the variety of employment patterns for the 2,244 women from the earlier cohort (ASW index = 0.556) and the 2,231 women from the later cohort (ASW index = 0.352), respectively. We

Figure 2: Average silhouette width (ASW) index in both cohorts



performed additional cluster solutions in the earlier cohort – specifically, with nine clusters (ASW index = 0.562) – which produced slightly higher ASW index scores than the ten-cluster solution (only by 0.006). However, the nine-cluster solution did not provide enough information on all substantive employment patterns for this age cohort (results available on request). Concretely, a pattern indicating early exits from the labour market did not unfold when using the nine-cluster solution. Thus, we decided to work with the ten-cluster solution.

Below, we present the 10 and 11 types of labour-force trajectories from age 25 to 39 for the earlier and the later cohorts, respectively, in two kinds of graphs. First, holistic graphs (Figure 3), which illustrate the overall path followed by individuals grouped within a specific labour-force trajectory. Second, individual sequence graphs (Figure 4), which show the path followed by every individual grouped in each type of labour-force trajectory. The legend situated on the right of Figures 3 and 4 displays the nine mutually exclusive work statuses used to construct these trajectories, with each work status represented by a different colour. At the bottom are two additional statuses reflecting missing values in trajectories (the TraMineR package in R makes the distinction between left-missing states and right-missing states for missing values, placed in the first and second halves of the sequences, respectively).

The first type, *not in paid work* (earlier cohort = 36.4%, later cohort = 24.5%), reflects the paths of women who remained continuously inactive, unemployed or looking for a job during young adulthood. The *long-term attachment* (earlier cohort = 28.2%, later cohort = 31.6%) and *late entry* (earlier cohort = 11.2%, later cohort = 9.1%) patterns represent mostly employed women with long-term, stable and full-time jobs who have made uninterrupted pension contributions since entering the labour market. The main difference between these two groups is the

Figure 3: Holistic graphs of types of labour force trajectories from age 25 to 39 in both cohorts

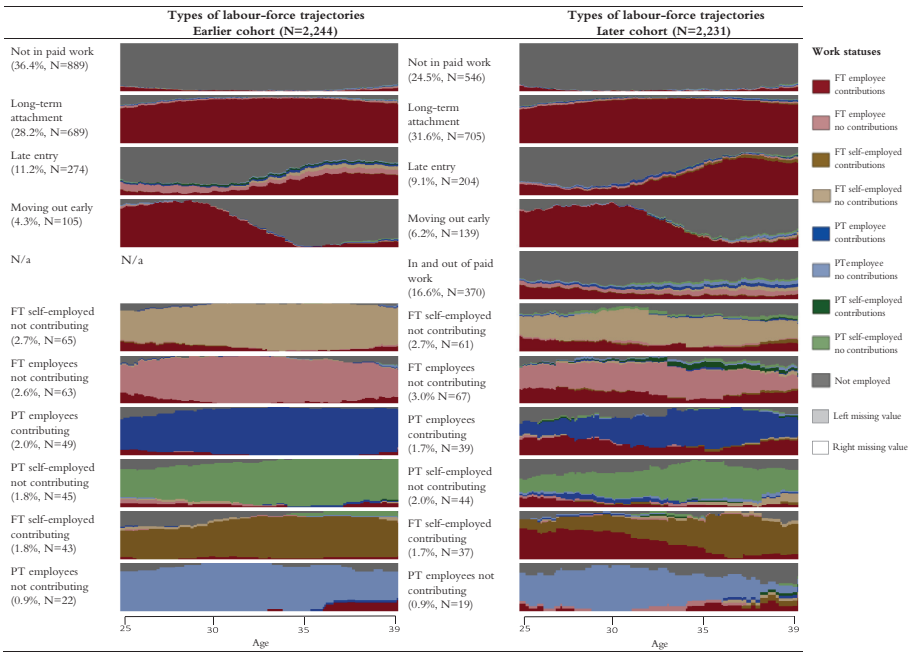
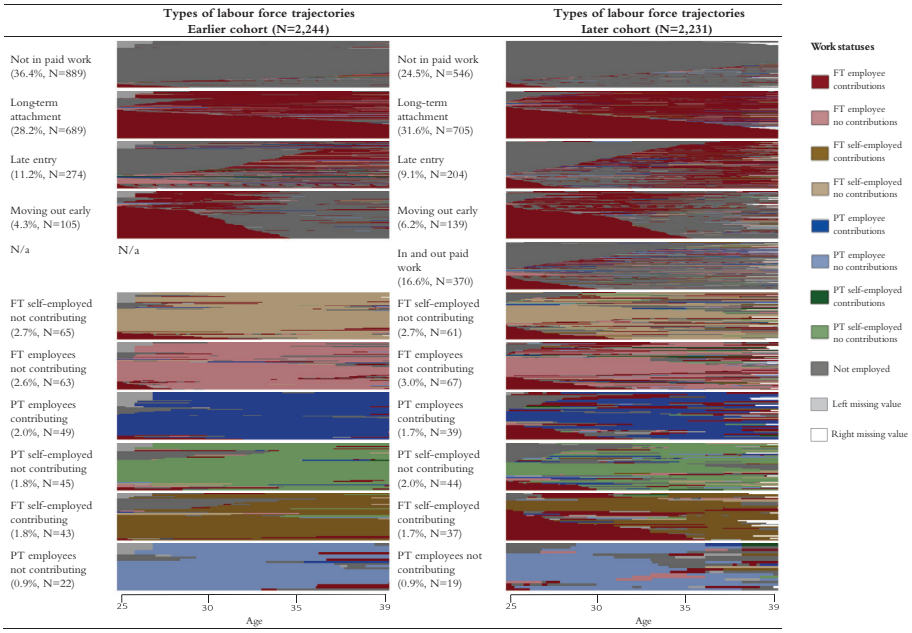


Figure 4: Individual sequences graphs of types of labour force trajectories from age 25 to 39 in both cohorts



age of entering the labour market, after age 25 (although it is worth noting that they might have been employed before this age). The fourth type, *moving out early* (earlier cohort = 4.3%, later cohort = 6.2%) refers to the employment pattern of women who have the same work status as women in types two and three, but who exit the labour market around age 30. Then, only for the later cohort, we observe the fifth type, *in and out of paid work* (16.6%), representing women who enter the labour market with different work statuses for short periods of time before exiting again multiple times between ages 25 and 39.

The remaining six types of labour-force trajectories represent marginal proportions (none surpass 3.0%) of women in either cohorts. They reflect the following employment patterns: full-time self-employed workers who do not contribute to a pension fund (type six); employees in full-time jobs who do not contribute to a pension fund (type seven); part-time employees making contributions to pension funds (type eight); part-time self-employed who do not contribute to pensions (type nine); full-time self-employed contributing to pension funds (type 10); and, finally, part-time employees not making contributions to pension funds (type 11).

We find some support for Hypothesis 1, which expects a greater diversity of employment patterns among the later cohort. While we overall observe similar diversity of labour-force trajectory types in both cohorts, we also see that there is one type (*in and out of paid work*) that only unfolds in the later cohort. Furthermore, as seen in Figures 3 and 4, types such as part-time employees contributing, part-time self-employed not contributing, and full-time self-employed contributing, seem superficially similar across cohorts, but some individuals from the later cohort classified in these three types begin at age 25 in the status *full-time employee contributing to pension*. This shows to some extent an increased diversity of patterns across the later cohorts.

The results indicate partial support for Hypothesis 2, on the prevalence of employment patterns. Whereas almost 40% of women in the earlier cohort belong to the type *not in paid work* (the most prevalent), 24.5% of women from the later cohort follow this pattern (the second most prevalent), indicating a clear difference in prevalence across cohorts. The type *long-term attachment* is the most prevalent among the later cohort (31.6%), but the second most prevalent among the earlier cohort (28.2%). Thus, the same two types of employment patterns are the most prevalent among both cohorts, but they flip positions. Among the rest of types, the prevalences are not remarkably different between cohorts, as seen in Figures 3 and 4.

Our results highly support our third hypothesis, on the dynamism of employment patterns, for three reasons. First, a pattern indicating multiples shifts into and out of the labour market (type *in and out of paid work*), which translates into a high level of dynamism due to multiple work transitions, is only observable among women from the later cohort (16.6%). Second, in Figure 4, we observe that the trajectory types *full-time self-employed not contributing*, *full-time employees not contributing*, *part-time employees contributing*, *part-time self-employed not contributing*, *full-time self-employed contributing*, and *part-time employees not contributing* report a greater number of transitions (indicating higher dynamism) among the later cohort. Third, confirming our prior expectations, on average, the entropy, complexity and turbulence indexes reflect higher internal heterogeneity among the labour trajectories of the later cohort than among those of the earlier cohort (as seen in Table 1). Among all types (except *in and out paid work*, which does not exist among the earlier cohort), the indexes of internal heterogeneity are greater (and, in many cases, even double) among women from the later cohort.

Table 1: Indexes of internal heterogeneity within types of labour-force trajectories in both cohorts

Types of labour-force trajectories	Earlier cohort			Later cohort		
	Entropy	Complexity	Turbulence	Entropy	Complexity	Turbulence
Not in paid work	0.063	2.536	0.015	0.083	3.635	0.028
Long-term attachment	0.158	3.925	0.031	0.170	4.844	0.044
Late entry	0.347	7.949	0.078	0.379	8.663	0.097
Moving out early	0.339	7.239	0.062	0.373	9.115	0.096
In and out of paid work	–	–	–	0.371	8.284	0.093
FT self-employed not contributing	0.148	3.636	0.029	0.382	7.120	0.081
FT employees not contributing	0.189	4.141	0.042	0.390	7.099	0.088
PT employees contributing	0.099	2.994	0.020	0.491	7.215	0.085
PT self-employed not contributing	0.168	3.638	0.031	0.419	7.394	0.089
FT self-employed contributing	0.188	4.090	0.032	0.369	6.723	0.072
PT employees not contributing	0.146	3.206	0.024	0.392	7.164	0.081
Average	0.185	4.335	0.036	0.347	7.023	0.078

We find only partial support for our fourth and final hypothesis, on the socio-demographics of employment patterns. As shown in Table 2, as hypothesised, in both cohorts, the type *not in paid work* has one of the highest rates of women with lower levels of education and three or more children, the lowest average age at first childbirth, a higher frequency of marriages and partnerships, and the lowest average age at first marriage. Furthermore, as expected for both cohorts, trajectory types characterised by a long-term attachment to the labour force include more women with tertiary educational levels, fewer children, a higher average age at first childbirth, a higher prevalence of non-married women (divorced, separated or single) and a higher average age at first marriage. However, considering the comparison between cohorts, we do not observe that this difference in socio-demographic characteristics between employment patterns is stronger among the earlier cohort. For instance, women from the later cohort who followed the *long-term attachment* trajectory have socio-demographic characteristics similar to those of their older counterparts (except with respect to the rate of women with three or more children). This also happens among women in the *not in paid work* trajectory. Moreover, as seen in Table 2, changes in socio-demographic trends between cohorts are especially clear in the overall averages, but not necessarily in specific trajectory types.

Discussion and conclusions

In this study, we have explored the long-term employment patterns during young adulthood (ages 25 to 39) of two different cohorts of women born approximately ten years apart in Chile (around 1958 and 1969), focusing specifically on four dimensions: diversity, prevalence, dynamism and socio-demographics. The results indicate similarities and differences in employment patterns among cohorts.

The first remarkable similarity is that nearly the same young adulthood employment patterns are observed across both cohorts, indicating low diversity. Indeed, the majority of women's work histories across generations are characterised by either remaining persistently out of paid work or working full-time and contributing to pension funds. However, one important difference is that the prevalence of these two employment patterns inverts between cohorts.

The rise of younger women following career paths of full-time work and continuous pension contributions during young adulthood suggests that a significant number of women are, to some extent, challenging the male-breadwinner culture that dictates that women should engage predominately in childcare and domestic tasks instead of paid work. In contrast, long-term attachment trajectories in Chile follow a pattern similar to the full-time work pathways prevalent in former communist countries, such as Poland and the Czech Republic (Ponomarenko, 2016). However, while the trajectories in said countries are probably related to strong cultural beliefs and policies that encourage women to enter the workforce, in Chile, they are likely to be attributable to other contextual factors. First, given that most women who follow these labour-force trajectories are highly educated, it is likely that they can afford childcare, enabling their access to and participation in full-time jobs. Second, among women with fewer years of education who follow these trajectories, it is likely that a significant number are their households' main and only breadwinner (see Contreras and Plaza, 2010), who meet most of their households' economic, care and domestic needs without the support of a partner.

Table 2: Socio-demographic characteristics of labour-force trajectories from age 25 to 39 in two cohorts

Types of labour force trajectories earlier cohort	Average birth year	Educational level (%)			Number of children (%)				Age at 1st childbirth	Marital status (%)				Age at 1st marriage
		Primary	Secondary	Tertiary	0	1	2	3 or more		Married/ partnered	Divorced/ separated	Widow	Single	
Not in paid work	1958 [3.1]	47.1	46.3	6.0	5.1	8.3	29.4	57.3	22.4 [4.6]	69.6	14.1	7.6	8.7	21.4 [4.9]
Long-term attachment	1958 [3.1]	20.5	45.3	34.3	13.6	24.1	30.5	31.8	25.0 [6.0]	47.6	18.6	5.1	28.6	24.6 [6.5]
Late entry	1958 [3.2]	36.5	50.0	13.5	4.7	10.9	30.2	54.0	22.5 [5.1]	55.5	23.0	6.2	15.3	22.0 [5.9]
Moving out early	1959 [2.9]	31.4	48.6	19.0	7.6	10.5	39.0	42.9	26.1 [5.7]	61.9	15.2	7.6	15.2	26.1 [6.2]
FT self-employed not contributing	1958 [3.4]	30.8	53.8	15.4	7.7	9.2	29.2	53.8	23.1 [5.3]	47.7	23.1	13.8	15.4	23.2 [7.0]
FT employees not contributing	1958 [3.3]	41.3	42.9	15.9	9.5	17.4	27.0	46.0	22.8 [4.8]	44.4	20.6	15.9	19.0	22.0 [5.8]
PT employees contributing	1957 [3.4]	6.1	26.5	67.3	24.5	8.2	26.5	40.8	25.8 [5.6]	46.9	18.4	6.1	26.5	24.5 [6.6]
PT self-employed not contributing	1958 [3.0]	37.8	55.6	6.7	8.88	13.3	35.6	42.2	22.7 [5.4]	62.2	8.9	4.4	24.4	24.1 [7.0]
FT self-employed contributing	1959 [2.9]	25.6	65.1	9.3	14.0	20.9	20.9	44.2	22.1 [4.2]	46.5	20.9	7.0	25.6	21.8 [5.4]
PT employees not contributing	1958 [3.4]	59.1	31.8	4.5	9.1	13.6	13.6	63.6	22.1 [6.5]	36.4	27.3	4.5	31.8	21.4 [6.5]
Average earlier cohort	1958 [3.1]	34.9	46.7	18.1	8.7	14.3	29.9	47.1	23.4 [5.4]	58.0	17.3	7.0	17.6	22.8 [5.9]

Table 2: *Continued*

Types of labour force trajectories earlier cohort	Average birth year	Educational level (%)			Number of children (%)				Age at 1st childbirth	Marital status (%)				Age at 1st marriage
		Primary	Secondary	Tertiary	0	1	2	3 or more		Married/ partnered	Divorced/ separated	Widow	Single	
Not in paid work	1969 [3.8]	38.8b	52.7	7.5	3.1	9.7	32.1	55.1	21.6 [3.9]	74.0	13.2	3.3	9.3	21.3 [4.1]
Long-term attachment	1970 [4.2]	11.3b	49.1	39.0	15.9	26.7	34.0	23.4	24.8 [5.7]	47.0	17.2	1.0	34.9	24.2 [5.3]
Late entry	1970 [3.9]	26.0b	53.4	20.6	6.4	15.7	34.8	43.1	21.7 [4.2]	47.5	28.9	1.5	22.1	21.5 [5.2]
Moving out early	1969 [3.4]	12.9b	65.5	20.9	8.6	18.0	41.7	31.7	24.4 [5.5]	63.3	14.4	2.2	20.1	24.3 [5.4]
In-out of paid work	1970 [4.0]	27.3b	55.9	15.9	6.4	14.6	40.0	38.9	22.9 [5.0]	56.2	20.0	2.7	20.8	22.3 [5.0]
FT self-employed not contributing	1970 [3.8]	27.9b	55.7	16.4	9.8	18.0	29.5	42.6	22.4 [4.8]	45.9	21.3	4.9	27.9	22.4 [4.4]
FT employees not contributing	1969 [4.2]	26.9b	50.7	22.4	10.4	26.9	28.4	34.3	22.9 [6.0]	37.3	19.4	1.5	41.8	22.3 [5.0]
PT employees contributing	1969 [3.7]	10.3b	35.9	53.8	12.8	25.6	35.9	25.6	24.6 [5.5]	51.3	7.7	0.0	41.0	23.4 [3.9]
PT self-employed not contributing	1970 [4.6]	29.5b	56.8	13.6	6.8	11.4	22.7	59.1	21.3 [4.2]	52.3	22.7	4.5	20.5	20.8 [4.0]
FT self-employed contributing	1971 [4.5]	5.4b	62.2	32.4	24.3	24.3	29.7	21.6	24.2 [6.6]	54.1	8.1	0.0	37.8	24.4 [6.1]
PT employees not contributing	1969 [2.5]	52.6b	42.1	5.3	10.5	5.3	21.1	63.2	20.1 [3.9]	36.8	36.8	5.3	26.3	19.8 [4.3]
Average later cohort	1969 [4.0]	23.7	52.8	22.9	9.4	18.2	34.4	38.0	23.0 [5.2]	56.1	17.7	2.2	24.0	22.6 [5.0]

Note: Socio-demographic characteristics are calculated at age 39 for labour force trajectories from age 25 to 39. Non-numeric variables reported in percentages. Numeric variables reported in means. Standard errors in brackets.

On the other hand, the persistence of a pattern of women permanently out of paid work reflects that the pervasive gendered work context in Chile continues to impact the configuration of women's working lives so strongly that a significant number of women in both cohorts remains outside the labour market. This context corresponds to male-breadwinner cultures in other countries. For instance, this finding echoes the 'inactivity' trajectory identified by Ponomarenko (2016) across Europe, the 'early marriage / non-working mother / high fertility' trajectory found in Spain by Davia and Legazpe (2014), and the large group of women in the former West Germany with few opportunities to enter the labour market identified by Langner (2015). We believe that most women who follow this labour-force trajectory in Chile do so because of a constraining environment of scarce public universal benefits and a *machista* (male chauvinist) culture, which hinders a successful balance of employment and family and pushes women to leave the labour market (Undurraga, 2013).

Our results also show that other long-term employment patterns, such as part-time work and self-employment, are notoriously less prevalent. While they are slightly more frequent among the later cohort, their prevalence is still marginal. This finding challenges the widespread notion (particularly in liberal-oriented countries) that women are mostly active as part-time workers contributing to household income via secondary labour-force participation (Madero-Cabib and Fasang, 2016). Legal obstacles, high costs for employers and regulations in Chile prevent the development of part-time work opportunities (Rau, 2010). This differs from the labour-force pathways of women in liberal-oriented welfare states, such as the UK, Switzerland and the US, in which part-time and self-employed work are often used as means of accessing the labour market, especially in late adulthood (Lain, 2016; Madero-Cabib, 2015; McMunn et al. 2015).

One difference between cohorts in Chile is that the employment patterns have become more dynamic over time. These results could imply that recent liberal-oriented reforms have transformed the labour market, creating increasingly more flexible jobs, particularly affecting the later cohort. Consequently, women in the later cohort are more likely to change their work status and, therefore, to have less predictable work trajectories. However, while greater dynamism in work trajectories may indicate a greater variety of work paths for women, which can be understood as greater variety of paid work opportunities for younger generations, it can also be a sign of work instability, informalisation and precarity. In effect, in the context of liberal-oriented work policies, female workers in Chile are currently more likely than their male counterparts to engage in informal and short-term work positions, which are often subject to less regulation and protection not only in Chile but worldwide (Ciccia and Bleijenbergh, 2014; Pollmann-Schult, 2016).

We also observed that socio-demographic characteristics play an important role in employment patterns among both cohorts, as women on trajectories with a greater attachment to the labour force presented greater levels of educational attainment, fewer children, more singlehood, and a later entry to marriage and first childbirth than women in trajectories not in paid work. This finding, which aligns with international evidence regarding the relationships between labour-force attachment and education, fertility and marital status (Hynes and Clarkberg, 2005; Madero-Cabib and Fasang, 2016; Struffolino et al. 2016), is equally strong in both cohorts. The rise in singlehood and a decrease in having three children or more cut across all employment patterns, and are not exclusive to a specific kind of trajectory.

While this study offers a significant contribution to life-course and policy research, it also has some limitations. First, it analyses women's working lives only during young adulthood. Further longitudinal studies, including both work and family history data during the same or a longer age span, could assess the extent to which women's employment patterns are simultaneously influenced by family formation patterns across different cohorts. To accomplish this, future studies could employ multichannel sequence analysis to create individual trajectories not only in one specific domain (as is the case with sequence analysis), but across two or more domains (such as work and family) simultaneously. Furthermore, while our research used the latest available data in Chile, future research could compare cohorts that are further apart and identify starker social and historical changes. This kind of research could also be complemented by qualitative studies that elaborate on the reasons underpinning women's decisions around labour-market participation and subsequent changes in work patterns. Further, although the in-depth, single-country design of this study allowed us to fully understand the dynamics and mechanisms of specific female work pathways, these results could be complemented and enriched with a cross-national analysis.

This research contributes to life-course and policy-focused studies interested in women's working lives. By using innovative methodological tools and focusing on young adulthood, we have provided a typology of work trajectories for women in Chile for two cohorts. Our results contribute to the understanding of employment patterns across generations, including cultural domains and labour-market reforms that could be affecting women's work histories. Furthermore, our results could be used in various ways to improve policies designed to support women's management of work and family responsibilities. First, although childcare provision has been discussed in other studies (see Arriagada, 2013; ComunidadMujer, 2016), our findings highlight the necessity of increasing public budgets for universal childcare services for all working parents, not only women. This measure would link care responsibilities to both men and women, challenging gender roles and facilitating women's entry into paid employment. This may also help reduce the high number of women in Chile who remain permanently outside the labour market. Second, our results suggest a binary situation: during young adulthood, women mainly work full-time or do not participate in the labour market at all. In a culture characterised by long working hours, it seems that more flexible work options may be well received, particularly for those who are out of the labour market but would like to engage in paid employment. Furthermore, since part-time employment and self-employment are still marginal work statuses for women in Chile, future labour plans should provide more alternatives for these type of work positions. Nevertheless, as part-time and self-employment work are traditionally associated with poorer working conditions, job insecurity, a lack of fringe benefits, lower hourly pay and a lack of opportunities for training and career development (Ginn et al. 2001), we emphasise an increased prevalence of part-time and self-employment positions that provide the same labour rights and protections as full-time jobs. Finally, we believe that the results of this research offer helpful evidence for policy makers responsible for economic security in retirement. As noted, in the context of the liberal-oriented Chilean pension system, retirement income depends exclusively on individual earnings-related contributions made through continuous participation in the labour market. Our finding that, in both cohorts, about half of women either

did not have paid work or had paid work but did not contribute to a pension fund, should be taken seriously by policy makers. It is urgent to develop measures that ensure an ethical and stable standard of social protection during old age for those who are out of paid work or not contributing during an important period of their lives and, therefore, will have few or no accumulated savings in their private pension accounts.

In summary, we believe that discussing an entirely original typology of labour-force trajectories and presenting evidence on the similarities and differences among employment patterns across two cohorts of women raises awareness about gendered experiences in the Chilean labour market and can positively influence work and pension regulations and policies.

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Conflict of interest

The authors declare that there is no conflict of interest.

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