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Becoming a leader with clipped wings: The role of early-career unemployment scarring on future leadership role occupancy

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ABSTRACT

Whereas the scarring effects of unemployment on future income, health and well-being are well-documented, little is known about its potential role in future leadership emergence and development. Using data from two cohorts of the National Longitudinal Study of Youth (NLSY79 and NLSY97) and drawing from life course theory, we examine the role of employment gaps in emerging adulthood on leadership role occupancy in middle adulthood. Based on a combined sample of 9,915 respondents (NLSY79 N = 5,551; NLSY97 N = 4,567), we find strong and robust support for significant scarring effects of early-career unemployment on individuals' future chances to occupy leadership positions in work settings. We further examine the moderating role of early life disadvantage (operationalized as family socio-economic status and childhood delinquency) and sex. Based on our main and supplementary analyses, we find some but weak support for these interaction effects. Our results based on complete case analyses support the role of early life disadvantage, showing that individuals from disadvantaged backgrounds experience stronger negative effects on leader role occupancy due to employment gaps in emerging adulthood. They further support the moderating role of sex, showing women to experience more adverse effects. Implications for theory and practice are discussed.

"All of us are in two stories at the same time," said the sandwich lady. "Life and Times. There is our own personal story, and the bigger story of what's happening around us. When both are in trouble simultaneously, when the crisis inside you intersects with the crisis outside you, things get a little crazy."
Salman Rushdie, Quichotte

Introduction

There is ample research to suggest that early-career unemployment is detrimental to later employment opportunities and earnings (Arulampalam, 2001; Arulampalam, Booth & Taylor, 2000; Gregg, 2001; Gregg & Tominey, 2004). Being unemployed in these formative years is associated not only with the loss of income during the specific period but also with long-term 'unemployment scarring', i.e., increased chances of future unemployment, lower wages, and downward mobility (Gangl, 2006). Such effects are more pronounced for cohorts entering the labor market during economic downturns (e.g., Burgess et al., 2003; Kahn, 2010; Oreopoulos, Von Wachter & Heisz, 2012). For example, young adults entering the job market during the Great Recession were more likely to experience future unemployment bouts than older generations (e.g., Rothstein, 2020). The 2008 global financial crisis created the conditions for 'generation jobless' (Economist, 2013) and fears of a 'lockdown generation' (International Labour Organization, 2020) were expressed during the pandemic crisis. Prior scholarly work has also argued for a cumulative disadvantage (Dannefer, 2003; Diprete & Eirich, 2006; O'Rand, 1996), stressing that negative experiences or disadvantages that occur early in life can have a lasting impact on an individual's future career opportunities and outcomes.

Despite the well-documented scarring effects of early unemployment on future earnings and employment prospects, the potential scarring effects on leadership emergence and future leader role occupancy have not been addressed by prior research. Given the critical challenges organizations encounter in leveraging leadership capabilities, the existing leadership shortages, and insufficient leadership pools (e.g., Day & Dragoni, 2015; Ready, Cohen, Kiron & Pring, 2020; Schwartz, Bohdal-Spiegelhoff, Gretczko, & Sloan, 2016), understanding the early

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influences on leadership development is important. Prior research on the 'early seeds' of leadership (Liu et al., 2020; Murphy & Johnson, 2011) has mainly focused on individual factors such as personality (Reichard et al., 2011; Zhang, Ilies, & Arvey, 2009), cognitive ability (Daly, Egan, & O'Reilly, 2015) and family influences such as parental styles (Liu et al., 2019; Oliver et al., 2011). In contrast, the role of trigger events and exogenous shocks on leadership development and future leader role occupancy remains theoretically underdeveloped and empirically unexamined. Early career unemployment is a significant trigger event with important inequality-enhancing effects and later career disadvantages (Gangl, 2006) that may extend to future leadership roles and opportunities. This is a key question guiding our research: "Does unemployment during the formative years of emerging adulthood play a role in leadership role occupancy in middle adulthood?" Furthermore, given that exogenous shocks such as financial crises accentuate the adverse effects of early unemployment (Gangl, 2006; Unt & Täht, 2020), we investigate potential scarring effects in two cohorts. A cohort of respondents who experienced the 2008 global financial crisis (GFC) during emerging adulthood, and a cohort of respondents who did not experience any severe global financial crisis but only a mild national economic downturn during their emerging adulthood formative years.

Drawing from the life course theory (Elder, 1998) that emphasizes the contextual embeddedness of individual life trajectories and points to cumulative disadvantages, we argue that individuals who experience long employment gaps in emerging adulthood will have lower chances to occupy leadership roles in their later careers. We also expect severe recessions and global financial crises such as the 2008 GFC to deepen these effects. The life course perspective focuses on aspects important for our understanding of leadership role occupancy, such as transitions, trajectories, and the role of context (Wang, 2007). An understanding of the role of employment gaps in a critical life stage, such as emerging adulthood, may be important for leadership emergence and development during a person's career. The life course theory also argues that the impact of key life and career experiences (such as unemployment) on life and role transitions is contingent on the specific circumstances in which these experiences occur (Mayer, 2009; 2019). In our study, we argue that the global financial crisis created adverse contextual circumstances that may heighten the effect of early-career unemployment on future leadership development. We further examine how sex and early life disadvantages such as poverty and youth adversity/antisocial behavior (Dannefer, 2020) further accentuate the negative effects of early unemployment on leader role occupancy. We argue for multiplicative scarring effects of early unemployment for socially disadvantaged young adults.

Overall, our research makes the following contributions. First, we contribute to leadership development research by showing the significant role of early-career unemployment on leadership prospects and future leadership role occupancy. We especially focus on the 'early seeds' of leadership development and draw from the life course theory (Elder, 1995; 1998) to examine the potential early unemployment scarring on leadership role occupancy. Adverse events in formative life stages (such as employment gaps in emerging adulthood) may accumulate over the life course and have long-term effects on the individual's future leadership-related opportunities and outcomes (Dannefer, 2003). Our research also builds upon previous research by Liu et al (2020) and Offermann et al. (2020) and focuses on lifespan perspectives in understanding leader development processes over the course of an individual's life. Examining the early stages of leadership development as a predictor of future efforts to develop as a leader in adulthood has been shown to be of paramount importance. We extend this research by examining the role of unemployment experiences during emerging adulthood on leadership role occupancy in middle adulthood and by further examining possible multiplicative effects of unemployment with sex and early life disadvantage. We further address the 'context deficit' (Johns, 2023) in leadership research by explicitly incorporating the 'omnibus' context (Johns, 2006; Oc, 2018) of market conditions (such as the 2008 GFC) in our study. By examining two cohorts, one that experienced the conditions of a severe global financial crisis and one that did not encounter such critical market conditions during emerging adulthood, we show how the 'omnibus historical era' (Johns, 2023) can play a role in leadership emergence and leader role occupancy later in life.

Second, we contribute to the unemployment scarring literature by expanding its lens on outcomes beyond income loss, health, and well-being (Egdell & Beck, 2020) and by focusing on leadership role occupancy as an important consequence of early-career unemployment scarring. Employment gaps during emerging adulthood which is a critical life stage for building leadership-related skills through on-the-job experiences, mentoring and being exposed to leadership role models at work, can have important detrimental effects on individuals' future leadership development.

Finally, we highlight the role of sex and early life disadvantage and argue for multiplicative scarring effects. Women may pay a higher price in relation to their future leadership prospects due to early unemployment. Also, disadvantages experienced during childhood and adolescence, such as poverty and early life adversity/delinquency, may create inequalities over the life course (e.g., Hatch, 2005; Wilson, Shuey & Elder, 2007). Early career unemployment experiences may severely hinder early life disadvantaged individuals' development as leaders by further limiting their access to institutional and environmental resources and undermining their motivation to engage with leadership roles in the future.

Theory and hypotheses

Unemployment scarring and leader role occupancy

Unemployment scarring is a well-documented phenomenon that refers to the long-term negative effects that unemployment can have on an individual's career and well-being (Arulampalam, 2001; Brandt & Hank, 2014; Egdell & Beck, 2020; Gallo et al., 2006; Knabe & Rätzel, 2011; Shi et al., 2018; Vishwanath, 1986). The experience of unemployment spells has been associated with an increased likelihood of future unemployment (Helbling et al., 2016), lower job satisfaction (Helbling & Sacchi, 2014) and long-term wage penalties (Arulampalam, 2001; Gregg & Tominey, 2005). Unemployment scarring has also been found to have negative health and psychological outcomes, such as lower life satisfaction (Clark, Georgellis & Sanfey, 2001), obesity (Cutler et al., 2015), psychological distress and mental illness (Mousteri, Daly & Delaney, 2018). The duration of unemployment is important, with prolonged unemployment having more severe scarring effects (Egdell & Beck, 2020). Early career unemployment is of high relevance as youth unemployment and a poor start in the labor market have been shown to compromise future employment, job quality and well-being, with serious scarring effects being experienced in middle and late adulthood (Brandt & Hank, 2014; Gallo et al., 2006; Zuccotti & O'Reilly, 2019). Early career unemployment can delay the attainment and accumulation of job-related knowledge and skills and may prevent the formation of tight employer-employee matches (Schmillen & Umkehrer, 2017). It may also be associated with significant risks of subsequent downward mobility and inequality-enhancing effects due to potential stigmatization, signaling of inferior worker quality and human capital depreciation (Berkovitch, 1990; Biewen & Steffes, 2010; Gangl, 2006). These well-documented consequences of early-career unemployment scarring on later career prospects point to its important role in career advancement and promotability to senior roles. Yet research on the possible scarring effects of early-career unemployment on leadership emergence and future leadership role occupancy is surprisingly absent. Casting light on the role of early career unemployment in the attainment of leadership roles is important. Leadership roles are generally associated with career success and denote access to organizational decision-making, an ability to influence work environments, attainment of increased financial rewards and higher socio-economic status. They can also contribute to

social mobility. We draw from the life course theory (Elder, 1998) to theorize a possible effect of unemployment scarring during early life stages on leadership role occupancy in middle adulthood.

We specifically focus on emerging adulthood (Arnett, 2000; Arnett, Žukauskiene & Sugimura, 2014) as a life stage of particular interest. Emerging adulthood is the period from late teens to late twenties (18–29 years of age) that is theorized to have a profound impact on an individual's life and career choices, and identity formation. It is a period of exploration and experimentation in roles, responsibilities and commitments during which individuals try out different possibilities and gradually move towards more enduring decisions (Arnett, 2000). Thus, understanding how experiences during these volitional years may influence individuals' leadership development is important. Moore et al. (2019), for example, examined whether perceived leadership ability changed during emerging adulthood. They argued that individuals may have experiences during that period that can decrease their confidence in their leadership ability. Unemployment can be such a critical experience that may diminish emerging adults' opportunities to build leadership skills in the workplace, be exposed to job assignments and work experiences that build leadership potential and experiment with activities that can strengthen their confidence in their ability to lead. For example, Liu et al. (2020) argue that during emerging adulthood, individuals gain valuable workplace and on-the-job experiences that help them build leadership-related capabilities, such as acquiring professional habits, networking, forming key relations with colleagues and supervisors, and having mentors and leadership role models. Unemployment spells during this formative life stage may deprive individuals of these valuable leadership skill-building experiences and may thus have an adverse effect on future leadership role occupancy. Leadership role occupancy is defined as "formal and informal leadership role attainments of individuals in work settings" (Arvey et al., 2007, p. 696). It is commonly operationalized as having supervisory responsibilities or holding a supervisory position (Arvey et al., 2007; Li, Arvey, Zhang, & Song, 2012; Li, Arvey, & Song, 2011; Li et al., 2018). Leadership role occupancy in a work context is considered the "first step" in the leadership process (Ilies, Gerhardt, & Le, 2004, p. 215) and a key developmental experience in middle adulthood (Liu et al., 2020).

We draw from life course theory (Elder, 1995; 1998) to theorize the role of unemployment during emerging adulthood on leadership role occupancy in middle adulthood. Life course theory argues that human development is a lifelong process that occurs across multiple dimensions (e.g., social, psychological, biological) and domains (e.g., family, work). It views human development as cumulative with later life outcomes shaped by prior experiences (Elder, 1995; 1998). Early life adverse events (e.g., unemployment, poverty, delinquency) may accumulate over the life course and affect subsequent life trajectories (Dannefer, 2003; 2020). The theory highlights the importance of developmental timing and posits that the sequence of life transitions and the age and life stage at which they are experienced are pivotal in influencing individual pathways. It suggests that early life experiences can have long-term effects on an individual's future opportunities and outcomes. It also highlights the role of the historical context within which such experiences occur (e.g., recession, war) and cohort effects.

The life course perspective focuses on aspects important for our understanding of leadership role occupancy such as transitions and trajectories, contextual embeddedness, interdependence of life spheres and timing of transitions (Szinovacz, 2003; Wang, 2007). An understanding of the role of the pattern of employment and especially of employment gaps in critical developmental windows (such as emerging adulthood) may be important for leadership emergence and development during a person's career. Contextual embeddedness implies that the impact of life and career experiences (such as unemployment) on life and role transitions is contingent on the specific circumstances in which these experiences occur. In our study, we argue that the global financial crisis of 2008 created adverse contextual circumstances that may accentuate the effect of early-career unemployment on future leadership development. Interdependence of life spheres indicates that experiences in one life domain (e.g., work) are influenced by experiences in other life spheres (e.g., family or peer group experiences). Timing is also important from a life course perspective. Role entries or exits that are experienced as 'off-time' (such as unemployment gaps during formative years) may be perceived as more stressful or disruptive than 'on time' role transitions (George, 1993; Quick & Moen, 1998). We argue that employment gaps during a critical developmental window (such as that of emerging adulthood) and contextually embedded within the adverse conditions of the 2008 GFC will play an important role in future leadership emergence and leadership role occupancy in middle adulthood. We thus hypothesize the following:

H1: Employment gaps in emerging adulthood will be negatively associated with leader role occupancy in middle adulthood.

The role of early life disadvantage and sex

Early life disadvantage is further likely to accentuate the effects of early career employment gaps on future leadership role occupancy. Life course research has examined how disadvantages experienced during childhood and adolescence may regulate inequalities over the life course (e.g., Hatch, 2005; Wilson et al., 2007). Family socio-economic conditions, for example, may initiate a lifelong cumulative advantage/disadvantage (CAD) process (Dannefer, 2003; Merton, 1968), and individuals of lower family SES may experience widening employment and health inequalities and diverging trajectories with age (e.g., Wickrama, Noh & Elder, 2009). Early exposure to poverty and financial hardship significantly limits access to institutional and environmental resources (e.g., Bradley & Corwyn, 2002; Duncan et al., 2016) and can subsequently undermine individuals' awareness, motivation, and future chances to engage with leadership roles. Recently, Ingram and Oh (2022) showed that in the US, individuals from lower social class origins are substantially less likely to be managers, and this disadvantage was found to be comparable in magnitude to the disadvantage experienced by women and African Americans. Barling, Granger, Weatherhead, Turner and Pupco (2023) found an indirect effect of family SES (at birth and age 5) on leadership role occupancy at age 26 via two sequential mechanisms: children's self-control at age 10 and adolescents' psychological well-being at age 16. Barling and Weatherhead (2016) also found that persistent exposure to poverty during childhood limited later leadership role occupancy through the indirect effects of the quality of schooling and personal mastery. They further argued that the experience of poverty in childhood was associated with socio-economic-based stereotype threats that could undermine individuals' motivation to seek leadership positions (Davies, Spencer & Steele, 2005). On the contrary, children of high–SES families who have higher greater access to resources and high-quality education, are more likely to participate in extracurricular activities that require leadership skills (e.g., sports teams, school clubs and societies). They are also more likely to be exposed to positive leadership models in their close environment. Closely related to poverty and a low family SES, antisocial behavior in childhood (such as delinquency and substance abuse) is important adversity contributing to early life disadvantage. For children living in poverty, antisocial behavior may be seen as a means of surviving, an opportunity to achieve a higher level of SES and a chance to achieve respect and honor among peers (Jarjoura, Triplett & Brinker, 2002). Many studies have shown a significant negative link between delinquency and educational performance and future employment opportunities (Monk-Turner, 1989; Hannon, 2003; Tomlinson & Walker, 2010). In general, early life disadvantage can have important implications for future leadership emergence as "disadvantaged early environments are powerful predictors of adult failure on a number of social and economic measures" (Heckman, 2006, p. 1900). A 'Matthew effect' (Merton, 1968) is possible in this context. Young adults from privileged backgrounds are likely to take the leadership 'escalator' whereas those from disadvantaged backgrounds may be stuck in the 'foyer', cordoned off the leadership escalator, and 'unjustifiably victimized' (Merton, 1968, p.59). Early life disadvantage can further heighten the negative

effects of early unemployment on future leadership role occupancy. We thus hypothesize the following:

H2: Early life disadvantage will moderate the relationship between employment gaps in emerging adulthood and leadership role occupancy in middle adulthood. Specifically, the negative relationship of employment gaps on leadership role occupancy will be stronger for those of high versus low early-life disadvantage.

The biases women experience when stepping up to leadership are well documented in the academic literature (e.g., Eagly & Karau, 2002; Rosette & Tost, 2010). Role congruity theory (Eagly & Johannesen-Schmidt, 2001), for example, has argued that there is a mismatch between sex-based stereotypes and leadership role occupancy expectations. Women are generally perceived to be more communal, whereas leadership positions are perceived to require more agentic characteristics. Thus, perceptions and stereotypes can act as barriers to women's advancement (e.g., Duehr & Bono, 2006; Heilman, Block, Martell & Simon, 1989; Schein, 1973), and males are more likely to emerge as leaders than females (e.g., Eagly & Karau, 2002). Sex differences in leadership emergence have been found to increase over time (Daly, Delaney, Egan, & Baumeister, 2015) and with the level of organizational hierarchy (e.g., Barling & Weatherhead, 2016). Liu et al. (2019) recently found overparenting to be negatively related to adolescent leader emergence, with male adolescents receiving more overparenting and showing less leader emergence than female adolescents.

A more mixed picture emerges in studies that have examined the effects of unemployment on women and men. Women have been found to be at higher risk of downward mobility after experiencing longer unemployment spells (Evertsson et al., 2016), but generally, prior research has shown that men tend to be more affected by unemployment scarring. Unemployment scarring has been found to be more persistent among men and more short-lived among women (Egdell & Beck, 2020; Gebel, 2010; Gregg, 2001). In a study of MBA graduates, Schneer & Reitman (1990) examined the impact of employment gaps on managerial careers and found that discontinuous employment histories were negatively associated with future income and job satisfaction and that the effect was more severe for men than women. Although we acknowledge this conflicting prior empirical evidence regarding unemployment scarring effects on women and men, given that we focus on a leadership outcome (i.e., leader role occupancy), we expect the well-documented gender stereotypes and biases in leadership processes to play an important role. The adverse effects of unemployment in emerging adulthood on leader role occupancy in middle adulthood are likely to be exacerbated for women due to perceived role incongruity and biased perceptions of lower leadership potential (e.g., Eagly & Karau, 2002). Thus, consistent with prior theorizing and leadership research pointing to sex differences in leadership emergence (Barling & Weatherhead, 2016; Carli & Eagly, 2017), we argue that sex will moderate the relationship of unemployment scarring with leadership role occupancy and that the negative effect will be more pronounced for women than men. Thus, we hypothesize the following:

H3: Sex will moderate the relationship between employment gaps in emerging adulthood and leadership role occupancy in middle adulthood. Specifically, the negative relationship of employment gaps with leadership role occupancy will be stronger for women than men.

Methods

Sample

The data used in this study was obtained from the National Longitudinal Survey of Youth, administered by the U.S. Department of Labor. The NLSY database comprises two cohorts, the 1979 (NLSY79) and the 1997 (NLSY97) cohort. The original sample of the 1979 cohort consists of 12,686 respondents who were 14–22 years old when first interviewed in 1979, while the 1997 cohort consists of 8,984 respondents who were 12–17 years old when first interviewed in 1997. The 1979 cohort has been surveyed 29 times from Round 1 (1979) to Round 29 (2020). Similarly, the 1997 cohort has been surveyed 18 times from Round 1 (1997–98) to Round 19 (2019–20). We only included participants in the two cohorts who provided complete data on the variables of interest i.e., leadership, employment, and control variables. As a result, we utilized a sample of 5,551 respondents from the 1979 cohort and 4,364 respondents from the 1997 cohort with usable data for analysis. Overall, 49.4 % of the total sample of 9,915 were females. In cohort 1997, the average age when respondents were asked about leadership position occupancy in 2017 was 35 years old, ranging from 33 to 37 years old. Similarly, the average age when respondents of the 1979 cohort were asked about leadership position occupancy in 1998 was 36 years. Importantly, respondents in the 1997 cohort were between 24 and 28 years old in 2008, the year of the global financial crisis. In contrast, the 1979 cohort respondents were between 43 and 51 years old in 2008, the year of the global financial crisis. Moreover, during their early life employment which is estimated between 1987 and 1993, the 1979 cohort experienced only a mild economic setback in 1991 that resulted in an increase in unemployment which was substantially lower than the increase observed during the global financial crisis (see Fig. 1). Thus, the crisis-induced gaps in emerging adulthood employment observed in the 1997 cohort but not in the 1979 cohort offers a unique experiment for empirical investigation of the effect of emerging adulthood unemployment on the leadership role occupancy.

Measures

Leadership role occupancy. In the 1979 cohort (NLSY79), the leadership role occupancy is measured with a single dichotomous question (No = 0; Yes = 1), which asks, "Do you supervise the work of other employees?", gathered in Rounds 17–18 (1996–1998). Out of 5,551 respondents, 41.2 % answered yes. In the 1997 cohort (NLSY97), the leadership role occupancy is measured by responses to the question "How much of your workday involves managing or supervising other workers?" using a 5-point rating scale (from 'Almost none' to 'Almost all') and gathered in Round 18 (2017–2018). Respondents who answered that 'Almost all', 'More than half' or 'Less than half' of their workday involves managing or supervising other workers are considered to occupy a leadership position and the outcome variable 'Leader' is assigned the value of 1. Respondents who answered that 'Almost none' of their workday involves managing or supervising other workers are not considered to occupy a leadership position, and the variable 'Leader' is assigned the value of 0. Based on this definition, 40.99 % of the 4,364 respondents in the 1997 cohort are considered to occupy a leadership position. Importantly, there is no significant difference between the two cohorts' proportion of respondents who occupy a leadership position (t-test = 0.2062 with df = 9,913, p = 0.8366). Taken together, 41.11 % of the 9,915 respondents in the pooled sample occupy a leadership position.

Unemployment Scarring. Unemployment scarring variables were created for each participant using their reported actual cumulative weeks worked on all jobs in a particular year. For the 1997 (1979) cohort, we gather, for each year, the cumulative weeks worked on all jobs for the period of 2005–2011 (1987–1993), see Fig. 2. For the 1997 cohort, the annual employment gap during early career is calculated as the difference between the annual cumulative weeks worked averaged over the three years before the 2008 GFC (2005–2007) and the annual cumulative weeks worked averaged over the three years after the crisis (2009–2011). To ensure consistency, the annual employment gap during early career of the 1979 cohort is calculated as the difference between the annual cumulative weeks worked averaged over the first three years of the emerging adulthood (1987–1989) and the annual cumulative weeks worked averaged over the last three years of the emerging adulthood (1991–1993). Based on the definitions, average annual employment in the 1979 cohort increased by 1.26 weeks (the equivalent annual employment gap in the 1979 cohort dropped by 1.26 weeks), while average annual employment in the 1997 cohort moved slightly by 0.40 weeks. When we compare the annual employment gap of the 1997 cohort, which experienced the GFC, with the counterfactual 1979

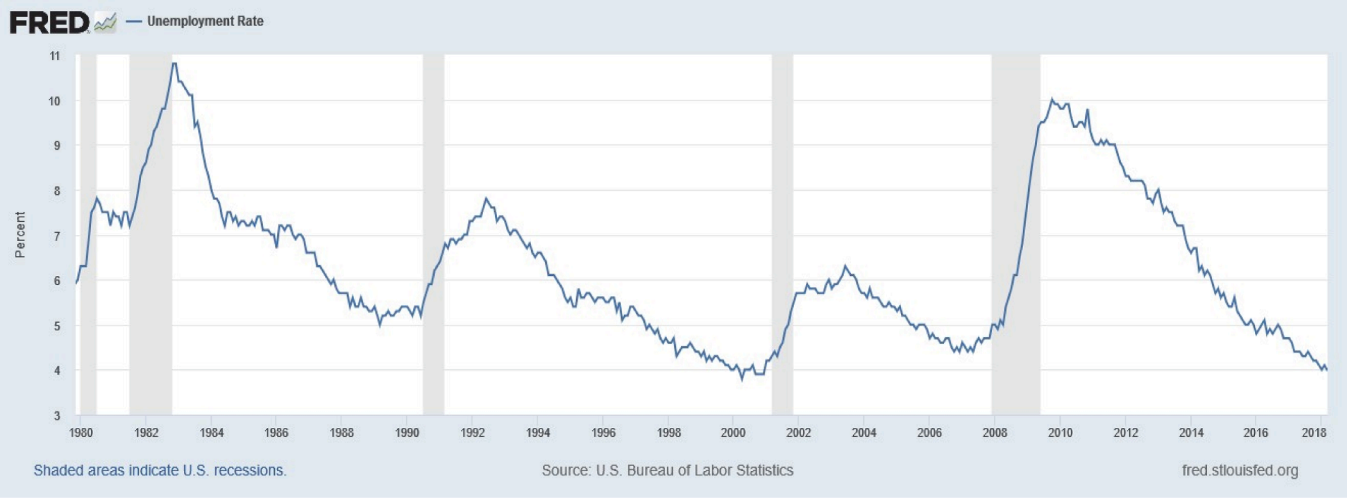

Fig. 1. Unemployment rate in the US during the period of 1980–2018. Source: U.S. Bureau of Labor Statistics, Unemployment Rate [UNRATE], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/UNRATE.

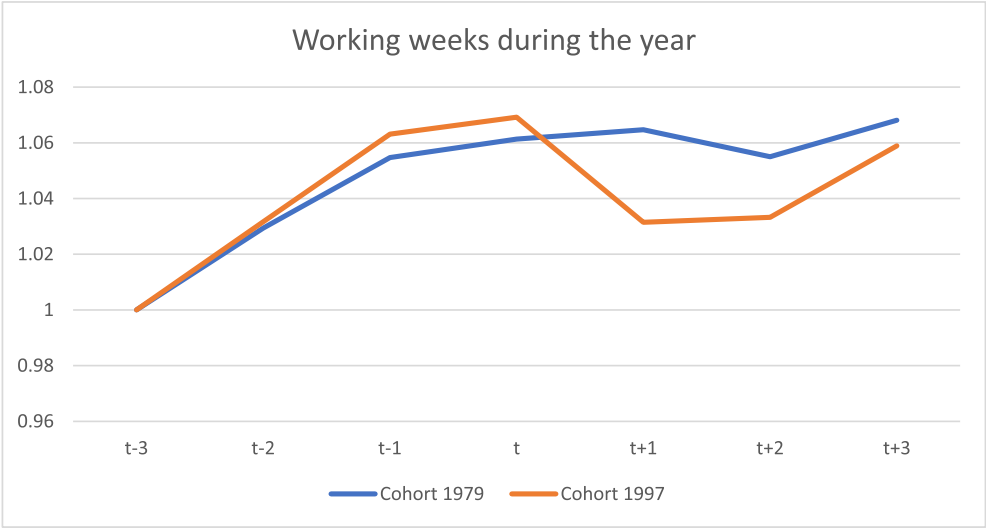

Fig. 2. Employment during the years 2005–2011 for two cohorts: the 1979 cohort, which did not experience a global financial crisis in early career, vs the 1997 cohort, which experienced a global financial crisis in early career. Values are standardized by year t-3. Source: NLSY1979/ NLSY1997.

cohort, which did not experience any GFC, their difference is 0.85 weeks on average and is statistically significant ($p = 0.00$). Both the graphical representation (Fig. 2) and the univariate mean *t*-test suggest that the global financial crisis has induced a supply-driven common shock to 1997 cohort respondents' early career employment status that is not observed among the 1979 cohort respondents' early career employment status.

Sex. We created a categorical variable that takes the value of 0 if the individual in our sample is male and 1 if the individual is female.

Early Life Disadvantage. The creation of the early life disadvantage variable is more complex. Since there is no direct observable measure, we examine a set of four observable indirect variables (i.e., indicators) to create the early life disadvantage score. Specifically, we utilized three parent-related variables that proxy for the respondent's socioeconomic background and one youth-related variable that examines the youth's exposure to adversity. Specifically, we focused on parent's education, measured by the highest degree of the father and of the mother, transformed to an ordinal scale from 0 if a parent has not gone to school at all to 20 if a parent has finished college or has received post-graduate education. Moreover, we used the poverty status of the respondent's family, during the first four survey rounds i.e., years 1979–1982 for the 1979 cohort, and years 1997–2000 for the 1997 cohort. For the 1979 cohort, a respondent's Family Poverty Status variable is assigned the value of 1 based on a combination of reported family income, the number of family members in the respondent's household, and the national Poverty Income Guidelines, which are updated yearly by the U.S. Department of Health and Human Services. For the 1997 cohort, we used the income-to-poverty ratio calculated by comparing the household's gross income to the federal poverty threshold of the previous year, during the first four survey rounds (years 1997–2000).[1] Specifically, the poverty in youth variable is assigned the value of 1 if the household's gross income to the federal poverty threshold ratio is less than 1.5 and 0 otherwise. Moreover, we look at the delinquency index compiled from respondent's answers to the first four survey rounds

[1] According to NLSY97, for rounds 1–7 the questionnaire asked for income of all household members rather than all family members living in the household. The figure is adjusted to the number of household residents and the number of members under age 18.

questions about whether they have participated in various criminal/delinquent activities. The types of criminal activities range from minor delinquency such as 'Times run away from home' as youth (aged less than 17 years old) to more serious criminal activities like 'Purposely damaged or destroyed property not belonging to the respondent', 'Stole something worth $50 or more (including a car)' 'Attacked or assaulted someone', among others. Based on these answers, NLSY compiles the delinquency score index that ranges from 0 to 10, with higher scores indicating more incidents of delinquency. For the 1979 cohort, we had to manually calculate the delinquency score index by adding the positive responses given by each respondent.

We use two separate methods to calculate based on the four observable indirect variables, the overall early life disadvantage variable. The first method is the factor analysis which identifies the common variance amongst a set of the four indicators and creates an early life disadvantage score. Specifically, we use the principal-factor method to analyze the correlation matrix. The results of the factor analysis in Table 1- column (1) show that the model identifies one main factor with eigenvalue of more than one. The loadings of the factor are presented in Table 1- column (3). The positive loadings of parent's highest degree combined with the negative loadings of poverty status and delinquency score suggest that the factor encapsulates the positive effect of socioeconomic status combined with the negative effect of youth's adversity. Therefore, we define the early life disadvantage index as the predicted scores of the factor multiplied by −1, such that higher values indicate higher early life disadvantage.

The second method is the cluster analysis, a technique that divides a sample into groups by identifying groups of individuals or objects that are similar to each other but different from individuals or objects in other groups. Specifically, we use the k-means cluster method to assign respondents to two groups: Low and High early life disadvantage. The results of the cluster analysis in Table 2- column (1) show that respondents in the 'Low early life disadvantage' group have a higher socioeconomic status and a lower score of youth's adversities. Conversely, the results in Table 2- column (2) show that respondents in the 'High early life disadvantage' group have a lower socioeconomic status and a higher score of youth's adversities. The main empirical findings use the early life disadvantage estimated from the factor analysis (EL-disadvantage1), while the early life disadvantage estimated from the cluster analysis (EL-disadvantage2) is used as a robustness test.

Control Variables. Unemployment scarring and leadership role occupancy are likely to be affected by common variables. The existence of such confounders creates bias, and therefore, we control for several variables to ensure the validity of the empirical results. Specifically, previous studies have found that demographics like age, number of children and height are likely to influence leadership emergence, leadership effectiveness and/or career success (Bass & Bass, 2008; Ng & Feldman, 2014; Ng et al., 2005; Li et al., 2011). Therefore, we control for age and number of children calculated in the round of data collection when the respondent is asked about the leadership role (i.e., years 1998 and 2017 for the 1979 and 1997 cohorts, respectively). Similarly, height is calculated as reported in the year 2011 for the 1997 cohort and in the year 2006 for the 1979 cohort. Moreover, Zuccotti and O'Reilly (2019) argue that second-generation ethnic groups are more successful in recovering from youth joblessness, while recent studies have highlighted the role of ethnicity status in leadership (Mahroum & Ansari 2017).

Table 1
Factor analysis to produce the early life disadvantage score (EL-disadvantage1).

Factor	(1) Eigenvalue	(2) Cumulative	Variable	(3) Factor Loadings
Factor1	1.140	1.322	Mother highest degree	0.7161
Factor2	0.002	1.324	Father highest degree	0.6817
Factor3	−0.047	1.269	Delinquency score	−0.0163
Factor4	−0.232	1.000	Youth in poverty	−0.4030

Table 2
Cluster analysis to produce the early life disadvantage score (EL-disadvantage2).

Variable	(1) Low early life disadvantage score	(2) High early life disadvantage score
Mother highest degree	14.362	10.092
Father highest degree	14.493	10.181
Delinquency score	1.147	1.239
Youth in poverty	0.180	0.453

Therefore, we control for the respondents' parents' immigrant status using the dummy variable that takes the value of 0 if the parent is born in the US and 1 if born abroad, and for the respondents' ethnicity. In particular, in the 1979 cohort, 91.05 % of the respondents' parents were born in the US and 8.95 % were identified as second-generation ethnic group, while in the 1997 cohort 86.69 % of the respondents' parents were born in the US and 13.31 % were identified as second-generation ethnic group. Taken together, 89.13 % of the pooled sample respondents' parents are born in the US and 10.87 % are identified as second-generation ethnic group. In respect to race, in the pooled sample 55.80 % of respondents are white American, 27.53 % are African American and 16.67 % are American Indian or Asian or Other. In the 1979 cohort 50.77 % of respondents are white American, 29.71 % are African American and 19.53 % are American Indian or Asian or Other, while in the 1997 cohort the corresponding percentages are 62.21 %, 24.77 % and 13.02 %, respectively. Finally, mental health has been found to be associated with career development and specifically with leadership role occupancy (Auvinen et al., 2021; Mohanty, 2010). The NLSY datasets include a short version of the Mental Health Inventory (MHI) (Dupuy, 1974; Veit & Ware, 1983; Ware et al., 1979). Whereas the NLSY97 data included the five-item MHI-5 (Veit & Ware, 1983; Rivera-Riquelme et al., 2019), only four items were available in the NLSY79 data, and thus, these four items were used in the combined analyses.[2] Specifically, for each individual in our sample, we collected their responses during several rounds of data collection to the following questions: (a) how much of the time during the last month have you felt calm and peaceful? (b) how much of the time during the last month have you been a happy person? (c) how much of the time during the last month have you felt downhearted? (d) how much of the time during the last month have you felt so down in the dumps that nothing could cheer you up? We coded responses to each of the above questions from 1 (almost never) to 4 (very often) and calculated the mean value to questions (a) and (b) to create a positive emotional score and the mean value to questions (c)-(d) to create a negative emotional score. Finally, we take the difference of the positive and negative scores to compile the early adulthood mental health score, with higher scores indicating a stronger mental health.

Instruments. To address endogeneity concerns (e.g., Antonakis, Bendahan, Jacquart, & Lalive, 2010; 2014) we estimate an instrumental variable model. Our methodology for empirical identification requires some instruments of employment status. We consider two such instruments. The first instrument is the cohort dummy variable which takes the value of 0 for the 1979 cohort, where respondents' employment status during early career did not suffer from an external, economy-wide shock, and the value of 1 for the 1997 cohort, where respondents' employment during early career was affected by the global financial crisis. The second instrument is education performance in early adulthood. Specifically, we focus on respondents' highest educational degree measured on a scale of 0 (none) to 4 (Postgraduate degree) reported in any round. In the case of multiple round responses of highest

[2] The MHI-5 question not available in the NLSY79 data was 'how much of the time during the last month have you felt nervous?'.

degree, we take the maximum value. To validate the choice of the instruments, first we test empirically if the instruments satisfy the relevance condition. To do so, we report the F-statistics of the first stage regression from a 2SLS model, because the first stage regression model is linear. The under-identification test equals to 83.85 and the test's p-value is 0.00 suggesting that the null hypothesis that the equation is under-identified is rejected. Moreover, for the weak identification test, the joint F-statistic is 43.05, which is higher than Stock and Yogo's (2005) critical value (10 % maximal IV size = 19.93). Consequently, the hypothesis that instruments are weakly correlated with the endogenous regressor of employment gap is rejected. We therefore have strong empirical evidence that the instruments satisfy the relevance condition. In addition to the relevance condition, the above two variables are appropriate instruments of the endogenous annual employment gap only if they do not violate the exclusion restriction. Theoretically, we find no plausible way that would justify a relationship between the survey's cohort and the probability of leadership position. In particular, we examined the sampling method used in cohorts NLSY79 and NLSY97 and found no link between the probability of being sampled and the probability to occupy a leadership position. Similarly, based on human capital theory (Becker, 1964), we argue that education plays a critical role in employment prospects (e.g., Brown & Sessions, 1999; Cairó & Cajner, 2018) and on our endogenous variable of employment gap, but its effect on leadership role occupancy is likely to occur only through employment. Given that we focus on formal leadership positions in work settings, employment is a requirement for leader role occupancy. Prior research has provided support for human capital depreciation during unemployment (e.g., Laureys, 2021), and we thus expect our endogenous variable of employment gap to erode knowledge and skills associated with high school education and thus depreciate any of its potential implications for leader role occupancy. In addition to the above theoretical justifications, we empirically examine the exclusion restriction using a statistical test based on D' Haultfœuille, Hoderlein and Sasaki (2021). For the cohort dummy, the test statistic is 2.45 and the p-value is 0.43 while for the education performance in early adulthood the corresponding statistic is 10.05 and the p-value is 0.14. Therefore, for both instruments, we cannot reject the null hypothesis that the exclusion restriction is satisfied.[3]

Results

Descriptive statistics and correlations for continuous and ordinal variables are shown in Table 3 for the entire sample. In Table 4, we split the sample into the two cohorts and test the variables' mean differences. The variable race is a nominal variable, and it is presented separately in Table 5.

Given the binary form of our dependent variable, we apply instrumental variable probit regression model estimated using the maximum likelihood method. The regression model examines the effect of the endogenous continuous variable annual employment gap which is estimated using the two instruments of the cohort and education performance. Furthermore, our model examines the interaction effect of annual employment gap with early life disadvantage and sex variables. Following Wooldridge (2010) (Chapter 9), the interaction effect of the endogenous annual employment gap with the exogenous early life disadvantage and sex variables, is estimated using the two instruments' interaction with early life disadvantage and sex variables respectively. Results are presented in Table 6. Table 6 Column 1 presents the first stage regression results of the estimation of the endogenous annual employment gap. Both instruments have statistically significant effect with cohort 1997 (with the GFC) having a positive effect ($\beta = 1.57$, $p = 0.00$) on annual employment gap and education performance having a negative effect ($\beta = -1.40$, $p = 0.00$) on annual employment gap. Table 6 Column 2 presents the results of the main effect of the instrumented annual employment gap on the leadership role occupancy using the maximum likelihood estimate of the probit regression. The effect is negative and statistically significant ($\beta = -0.05$, $p = 0.00$), thus supporting Hypothesis 1. After transforming the estimated coefficients to marginal effects on probability, we conclude that an increase of one week in annual employment gap results in an absolute reduction of 2 % in the probability of leadership role occupancy. The economic significance of the effect becomes more profound if we consider the standard deviation of the employment gap which equals to 15.33 weeks over the course of one year.

Furthermore, Table 6 Columns 3 presents the results of the interaction effect of annual employment gap with early life disadvantage. The interaction effect is negative and statistically significant ($\beta = -0.04$, $p = 0.05$), while the main effect is also negative and statistically significant ($\beta = -0.05$, $p = 0.00$). After transforming the estimated coefficients to marginal effects on probability, we conclude that at the 95th percentile of the early life disadvantage score, an increase of one week in annual employment gap results in an absolute reduction 4.33 % in the probability of leadership role occupancy and the marginal effect is statistically significant ($p = 0.00$) (see Fig. 3).[4] Similarly, for the mean value of the early life disadvantage score an increase of one week in annual employment gap results in an absolute reduction of 3.5 % in the probability of leadership role occupancy and the marginal effect is statistically significant ($p = 0.00$). Furthermore, we compute the difference (-0.009) between marginal effects at the 95th percentile and at the mean, and the 95 %- confidence interval for the marginal effect difference (-0.015 -0.003). Finally, at the 5th percentile of the early life disadvantage score, an increase of one week in annual employment gap results in an absolute reduction of 1.97 % in the probability of leadership role occupancy and the marginal effect is statistically significant ($p = 0.003$).

Furthermore, Table 6, Column 4, which contains the results of the interaction effect of annual employment gap with our second variable of early life disadvantage, confirms that above findings. Taken together these results provide some support to Hypothesis 2 that the negative effect of annual employment gap on the probability of leadership role occupancy depends on the size of the annual employment gap but also on the individual's early life disadvantage. Those at the higher level of early life disadvantage score distribution, experienced a reduction in the probability of occupying a leadership position in the future proportional to the annual employment gap which is double in size compared to those at the lower level of early life disadvantage distribution.

We continue with the second moderator of sex and the interaction effect with annual employment gap presented in Table 6 Column 5. The interaction effect ($\beta = -0.06$, $p = 0.01$) is negative and statistically significant, while the main effect is negative but statistically non-significant ($\beta = -0.02$, $p = 0.20$). After transforming the estimated coefficients to marginal effects on probability, we conclude that an increase of one week in annual employment gap for a woman results in an absolute reduction of 2 % in the probability of leadership role occupancy, and the marginal effect is statistically significant ($p = 0.014$) (see Fig. 4). Equivalently, an increase of one week in annual employment gap for a man results in an absolute reduction of 0.7 % in the probability of leadership role occupancy, and the marginal effect is not statistically significant ($p = 0.18$). These results generally support Hypothesis 3. Furthermore, we compute the difference (-0.014) between marginal effects of females and males, and the 95 %- confidence interval for the marginal effect difference (-0.04 0.01). We conclude that women who experience employment gaps in emerging adulthood are significantly

[3] We use 2,000 multiplier bootstrap iterations to compute the critical value of the test statistic.

[4] The reported marginal effects are estimated using the control function approach, as the IV-probit model does not allow for the automatic derivation of marginal effects of an interaction with a continuous variable.

Table 3
Descriptive statistics and correlations.

	Variables	mean	sd	1	2	3	4	5	6	7	8	9	10
1	Leadership	0.41	0.49										
2	Employment gap	−0.89	15.33	−0.05									
3	Age	35.83	2.05	0.01	0.05								
4	Height	5.18	0.42	0.06	−0.01	−0.02							
5	Mental health	1.49	0.90	0.05	−0.04	0.10	0.07						
6	Immigrant status	0.11	0.31	−0.01	−0.01	−0.01	−0.08	0.00					
7	Number of Children	1.51	1.27	−0.03	0.02	0.14	−0.08	0.05	0.01				
8	EL-disadvantage1	0.00	0.80	−0.09	0.01	0.11	−0.12	0.04	0.26	0.23			
9	EL-disadvantage2	0.64	0.48	−0.07	0.02	0.10	−0.07	0.06	0.08	0.20	0.69		
10	Sex (Females)	0.49	0.50	−0.08	0.02	0.02	−0.46	−0.12	−0.01	0.12	0.03	0.02	
11	Highest educational degree	1.56	1.11	0.12	−0.07	−0.06	0.03	−0.01	0.00	−0.22	−0.47	−0.42	0.08

N = 9,915. Correlations with absolute values greater than 0.020 are significant at 0.05 level.

Table 4
Comparison between the two cohorts.

	Cohort: NLSY 1979		Cohort: NLSY 1997		
	mean	sd	mean	sd	Diff
Leadership	0.41	0.49	0.41	0.49	0.00
Employment gap	−1.26	15.07	−0.41	15.63	−0.85**
Age	36.47	2.25	35.01	1.40	1.45**
Height	5.16	0.41	5.20	0.44	−0.04**
Mental health	1.74	0.98	1.18	0.68	0.56**
Immigrant status	0.09	0.29	0.13	0.34	−0.04**
Number of Children	1.74	1.26	1.22	1.23	0.51**
EL-disadvantage1	0.21	0.82	−0.27	0.69	0.48**
EL-disadvantage2	0.76	0.43	0.48	0.50	0.27**
Sex (Females)	0.51	0.50	0.48	0.50	0.03**
Highest educational degree	1.29	0.96	1.91	1.19	−0.63**

Notes: ** $p < 0.05$, (two-tailed tests).

Table 5
Frequency table for the categorical variable of race.

Race	Cohort79: No GFC	Cohort97: GFC	Total
White	2,818	2,715	5,533
Black-African	1,649	1,081	2,730
All other	1,084	568	1,652
Total	5,551	4,364	9,915

less likely to occupy a leadership position in the future compared to men who also experienced employment gaps in early career.

Following the suggestion of the Methods Editor, we ran two supplementary analyses. First, as described in our Method section, our main analyses were conducted on the complete data of 9,915 participants (out of 21,670) which indicates a high proportion of missing data (54%). Attrition and missing data in longitudinal panel studies are well-known challenges (especially in the context of 20-year studies like the cohorts used in our sample). Complete case analysis is a common approach, but it may yield biased parameter estimates (e.g., Graham, 2009). To deal with the non-trivial amount of missing data in our sample, we follow Wulff et al. (2023) and impute the missing values using the multiple imputation by chained equations, which employs a separate conditional distribution for each imputed variable. The results, available in the online repository, show no change in the statistical significance and the magnitude of the employment gap effect on the probability of occupying a leadership position. However, the results from the multiple imputation failed to support the interaction effect of early life disadvantage and of sex with employment gap on the probability of occupying a leadership position. Nonetheless, we need to note that there are three types of missing data in the NLSY data ('Refusal to answer', 'Not Interviewed' and 'Valid skip'). In the presence of different types of missing data, multiple imputation analyses like the one presented here may pose certain challenges in the interpretation of the findings. Furthermore, we report the results from estimating a linear 2SLS regression with robust standard errors, which relies on fewer assumptions compared to the IV probit regression model (available in the online repository). The effect of employment gap remains negative (β = -0.03 vs β = -0.02 the marginal effect in the probit regression model) and statistically significant with a p-value of 0.00. However, the results from a linear 2SLS regression failed to support the interaction effect of early life disadvantage and of sex with employment gap on the probability of occupying a leadership position. Still, we must note that given the binary nature of our dependent variable of leader role occupancy, probit regression remains the preferred type of analysis for our data.

In summary, based on the findings from the main and the supplementary analyses, we conclude that the empirical evidence for the effect of employment gap on the probability of occupying a leadership position is strong and robust to all model specifications. On the other hand, the empirical evidence for the role of early life disadvantage and sex as moderators of the relationship between employment gap and the probability of occupying a leadership position is weaker.

Data and Stata Code files for all analyses, including the supplementary analyses, can be found here: https://osf.io/vcx5p/?view_only=11be4bc3061442fb911cb86a812bd69d.

Discussion

Our study is the first to cast light on the scarring role of unemployment on leadership emergence and role occupancy. We utilized longitudinal data from two cohorts of the National Longitudinal Study of Youth (NLSY79 and NLSY97). By examining employment gaps in emerging adulthood during the 2008 GFC in the NLSY97 cohort and using the NLSY79 cohort to estimate the counterfactual of no global financial crisis and deep recession but only a mild and national economic downturn in emerging adulthood, we find support for a significant negative effect of unemployment on leadership role occupancy in middle adulthood. We specifically find that an increase of one week in annual employment gap results in an absolute reduction of 2% in the probability of leadership role occupancy. We also find some support for the moderating role of early life disadvantage (operationalized as low family SES and childhood delinquency) and sex. Individuals at the higher level of early life disadvantage score distribution were found to experience a more severe reduction in the probability of occupying a leadership position in the future, proportional to the annual employment gap. Moreover, we find women to be less likely to occupy a leadership position overall and that being a woman exacerbates the effect of annual employment gap during early career on the probability of leadership position occupancy in middle adulthood.

Theoretical and practical implications

Our research contributes to leadership development research by showing the significant role that early-career experiences and critical

Table 6
Probit IV-regression models predicting the probability of leadership role occupancy.

Variables	M1	M2	M3	M4	M5
Employment gap		−0.05***	−0.05***	−0.03***	−0.02
		(0.00)	(0.01)	(0.01)	(0.02)
Early Life disadvantage× Employment gap			−0.04*	−0.03*	
			(0.02)	(0.02)	
Female × Employment gap					−0.06***
					(0.02)
African American	0.28	−0.04	−0.04	−0.04	−0.04
	(0.38)	(0.03)	(0.03)	(0.03)	(0.03)
Indian American/other	−0.45	−0.06*	−0.08**	−0.09**	−0.07**
	(0.49)	(0.04)	(0.04)	(0.04)	(0.03)
Age	0.45***	0.03***	0.02***	0.02***	0.02**
	(0.08)	(0.01)	(0.01)	(0.01)	(0.01)
Height	−0.14	0.02	0.02	0.02	0.01
	(0.39)	(0.03)	(0.03)	(0.03)	(0.02)
Mental health	−0.53***	−0.01	−0.02	−0.02	−0.02
	(0.19)	(0.01)	(0.02)	(0.02)	(0.02)
Immigrant	−0.25	0.02	−0.01	−0.00	0.02
	(0.57)	(0.04)	(0.04)	(0.04)	(0.04)
Number of children	0.13	0.01	0.00	0.01	0.02**
	(0.12)	(0.01)	(0.01)	(0.01)	(0.01)
Early Life disadvantage	−0.42*	−0.06***	−0.09***	−0.10***	−0.06***
	(0.23)	(0.02)	(0.02)	(0.02)	(0.02)
Female	0.62*	−0.09***	−0.10***	−0.10***	−0.10***
	(0.35)	(0.03)	(0.03)	(0.03)	(0.03)
GFC Cohort (IV1)	1.57***				
	(0.33)				
Highest degree (IV2)	−1.40***				
	(0.15)				
Constant	−14.45***	−1.14***	−0.73*	−0.90***	−0.62*
	(3.51)	(0.25)	(0.40)	(0.27)	(0.36)
Observations	9,915	9,915	9,915	9,915	9,915

Notes: Robust standard errors in parentheses, *** p < 0.01, ** p < 0.05, * p < 0.10 (two-tailed tests) M1: 1st stage regression; M2:2nd stage regression-main effect of instrumented annual employment gap on Leadership; M3:2nd stage main effect of instrumented annual employment gap and its interaction effect with EL-disadvantage1; M4: 2nd stage main effect of instrumented annual employment gap and its interaction effect with EL-disadvantage2; M5: 2nd stage main effect of instrumented annual employment gap and its interaction effect with sex;

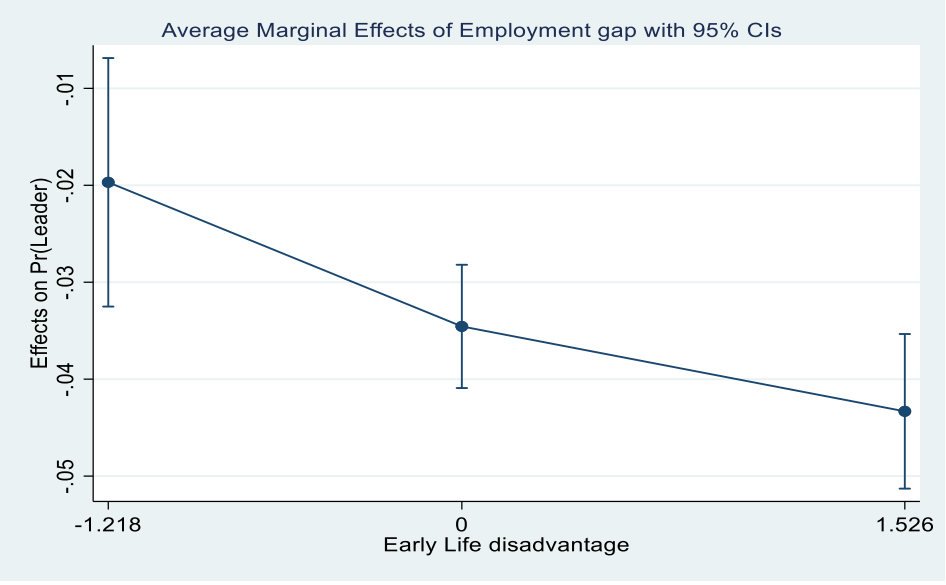

Fig. 3. Marginal (net) effect of employment gap on probability of occupying a leadership position for different levels of early life disadvantage: Marginal effect is calculated at the 5th percentile (-1.218), the mean (0) and the 95th percentile (1.526) of the early life disadvantage score. The plot was calculated based on the control-function approach.

events, such as employment gaps, can play on future leadership prospects and future leadership role occupancy. We draw from the life course theory (Elder, 1998) and find support for a significant scarring effect of unemployment in emerging adulthood on future leadership development and leadership role occupancy in middle adulthood. Adverse events in this formative life stage may accumulate over the life course and have long-term effects on the individual's future leadership-related opportunities (Dannefer, 2003). Examining events such as

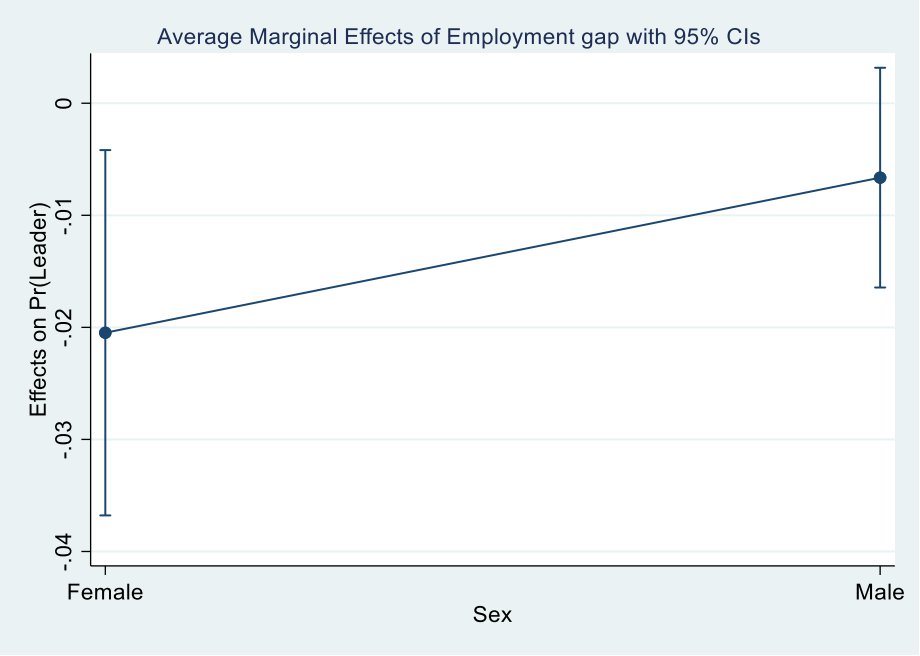

Fig. 4. Marginal (net) effect of employment gap on probability of occupying a leadership position for Women vs Men.

unemployment in the early stages of leadership development as predictors of future efforts to develop as a leader in adulthood expands the lens of existing research on the early seeds of leadership beyond personality (Reichard et al., 2011), cognitive ability (Daly et al., 2015) and parental influences (Liu et al., 2019). In line with life course theory, we further address the contextual embeddedness of these unemployment experiences and focus on the employment gaps of one cohort of participants who experienced the global financial crisis of 2008 during emerging adulthood and a cohort of participants who did not experience a global financial crisis or a deep recession during those formative years.

We additionally test cumulative disadvantage propositions (Dannefer, 2003; 2020) and examine the multiplicative effects of unemployment with early life disadvantage and sex on leader role occupancy in middle adulthood. We find some evidence for a multiplicative scarring effect of unemployment experiences in emerging adulthood with early life disadvantage (such as low family SES and childhood delinquency) on individuals' leadership prospects and leadership development. Unemployment scarring on leadership role occupancy is found to be stronger for individuals from disadvantaged social backgrounds. Although an individual's life is shaped by a combination of structural factors (such as socio-economic status) and agency (an individual's choices and actions) (Elder & Shanahan, 2006), individuals who have experienced early life disadvantage appear to have been dealt a bad card in relation to their leadership development. Early life disadvantage can create significant barriers to success, and we find unemployment in emerging adulthood to make things even worse. We find support for unemployment scarring effects on their future leadership occupancy that may have further implications for their career success and social mobility.

We further find sex to be a significant moderator of the relationship between early career unemployment and leader role occupancy. Women are generally found to emerge less as leaders, and unemployment in emerging adulthood seems to aggravate this effect. This finding is in alignment with prior leadership research showing sex differences in leadership emergence (e.g., Eagly & Karau, 2002; Daly et al., 2015) but contradicts prior unemployment scarring research that showed males to experience more severe unemployment scarring effects (Egdell & Beck, 2020; Gebel, 2010; Gregg, 2001; Schneer & Reitman, 1990). In our study, women are found to pay a higher price for employment gaps in emerging adulthood and to have decreased chances of leadership role occupancy in middle adulthood due to early career unemployment. Employment gaps in formative years may undermine women's access to key professional networks, limit their exposure to positive leadership role models, or decrease their confidence in the ability to pursue those roles (Epitropaki, 2018; Barling & Weatherhead, 2016). They may also influence key decision makers' perceptions of women's leadership competence and potential (e.g., Carli & Eagly, 2017). Our research captures the phenomenon but cannot cast light on the specific mechanisms via which women's unemployment in emerging adulthood influences leadership emergence in later life. This is a fruitful area for future research.

Nonetheless, we must acknowledge that the evidence provided for the moderating effects of both life disadvantage and sex in our data is not robust (given the lack of significant interaction effects in the two supplementary analyses conducted), and thus, caution is needed when interpreting the above findings. Although we find strong support for our main effect (i.e., the role of employment gaps on leader role occupancy), the support for the interaction hypotheses is less strong. Thus, additional research is needed to test our cumulative disadvantage hypotheses, and specifically the interaction effects of early life disadvantage and sex in the relation between unemployment on leader role occupancy, so that a more complete picture of these relationships can be obtained.

We further contribute to the unemployment scarring literature (Arulampalam, 2001; Brandt & Hank, 2014; Egdell & Beck, 2020; Vishwanath, 1986). The bulk of prior research has examined outcomes such as income loss, health, and well-being (Egdell & Beck, 2020; Helbling et al., 2016). There is a surprising absence of studies looking into the possible scarring effects of unemployment on leadership emergence and individuals' access to positions of power and decision-making. Yet this is of paramount importance as the attainment of leadership positions is considered an indicator of career success and can contribute to social mobility. Wider access to leadership positions could also help increase and diversify the available talent pools (Barling & Weatherhead, 2016). Our research expands the lens on the effects of unemployment scarring beyond income, health and well-being and highlights leadership role occupancy as a relevant and important outcome. Our findings support the proposition that employment gaps during emerging adulthood, a key life stage for building leadership-related skills via

stretching assignments, on-the-job experiences, mentoring and role-modelling, negatively impact individuals' future leadership development and limit their chances of occupying leadership positions in middle adulthood.

Our research has several practical implications. Alleviating the scarring effects that early-career unemployment may have on individuals' opportunity to rise to leadership positions is important. Governmental and organizational initiatives to address youth unemployment (such as internships, subsidized employment programs, job placement, work readiness, vocational training, and leadership training programs) (e.g., Apunyo et al., 2022; Oreopoulos et al., 2012) can help reduce early career unemployment and help young adults build leadership-related skills. Large-scale interventions that can reduce poverty and minimize the detrimental effects of early life disadvantage on future leadership development can also make a difference (Barling & Weatherhead, 2016). Ensuring that all individuals have an equal opportunity to attain leadership positions and rise above limitations imposed by the environment they grew up is a worthy goal for individuals, organizations, and societies.

Limitations and future research

A major strength of our study relates to the nature of data available within NLSY79 and NLSY97. Data are longitudinal and collected across many years of individuals' lifespan (data collection spanned across 23 years in the case of NLSY97 and 41 years in the case of NLSY79) and multi-sourced (including self- ratings, parent-ratings and objective data). We were able to examine the effects of unemployment in emerging adulthood on leadership role occupancy in middle adulthood and draw robust inferences based on this data. We also had the opportunity to address unemployment scarring effects within the context of a natural experiment (Sieweke & Santoni, 2020), as the global financial crisis of 2008 was an exogenous shock and an unpredictable event. Having access to data from two cohorts, one that had experienced the effects of GFC in emerging adulthood and one that had experienced a mild and national economic downturn but by no means as severe as the GFC during those formative years, we were able to offer unique insights into the role of early adulthood unemployment on leadership emergence and leadership role occupancy in middle adulthood.

Despite these strengths, the study also has weaknesses. Given that this is archival data, we did not have any input in the questionnaire design, and we had to use proxy variables for some of the constructs of the study (e.g., leader role occupancy, early life disadvantage). Our choices were, however, aligned with prior research that has used NLSY data (i.e., Barling & Weatherhead, 2016; Li et al., 2011). Future research can investigate additional moderating variables in the relationship between unemployment scarring and leadership role occupancy, such as the quality of family relations and parenting styles (Liu et al., 2020). Poverty and a low SES may leave parents more vulnerable to depression and substance abuse which may affect the quality of parent–child relationships (Barling & Weatherhead, 2016). Future research can also aim to replicate our findings in different cultural contexts, as the effects of unemployment scarring may be harsher in countries with high levels of income inequality (Andrés, 2005; Mojsoska-Blazevski et al., 2017). Such inequality can create social and economic divisions within a society, which can further exacerbate the negative effects of unemployment. Future research can also go beyond binary conceptualizations of gender and examine the moderating effects of a wider constellation of gendered identities. Another limitation is that our model focuses on the linear effect of the employment gap variable on the probability of leadership role occupancy. Future studies could allow for potential non-linear effects to capture the possibility that the impact of the employment gap variable on the probability of leadership role occupancy varies for different levels of employment gap. Furthermore, future studies could cast light on the underlying mechanisms explaining the relationship between unemployment in emerging adulthood and leader role occupancy in late adulthood. Prior scholarly work has pointed to an unemployment stigma (Goffman, 1963) that somehow marks unemployed individuals as defective and less worthy of valued treatment (Karren & Sherman, 2012) and introduces discrimination and biases in hiring decisions (Cole et al., 2007; Weisshaar, 2021). Employers have been found to use job candidates' unemployment duration as a sorting criterion and to be put off by long unemployment spells, which they perceive as a signal of low motivation (Eriksson & Rooth, 2014). Understanding why and how early career unemployment hampers individuals' chances for occupying future leadership positions in organizational settings is a promising direction for future research.

Conclusion

Early-career unemployment can have scarring effects not only on future income, health and well-being but also on individuals' opportunities to rise to leadership positions. Our study shows that employment gaps experienced in emerging adulthood, a life stage during which critical leadership capability is built in work contexts, adversely affect leadership role occupancy in middle adulthood. We further find this negative relationship to be exacerbated for individuals from socially disadvantaged backgrounds and for women. Some people are indeed "prevented from rising to promising positions of leadership" (Smith, 1937, p. 535) due to early life disadvantage and early career unemployment, whereas others capitalise on the 'Matthew effect' (Merton, 1968) that their privileged background offers, shielding them from the negative effects of early-career unemployment. We hope our paper will spark additional research in this important area of study.

CRediT authorship contribution statement

Olga Epitropaki: Conceptualization, Data curation, Writing – original draft, Writing – review & editing. **Panagiotis Avramidis:** Data curation, Formal analysis, Methodology, Writing – original draft, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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