

Review Article

Organizing School-to-Work Transition Research from a Sustainable Career Perspective: A Review and Research Agenda

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Abstract

A successful school-to-work transition is crucial to an individual's initial entry into the labor market and overall sustainable career development. Scholarly interest in how emerging adults (i.e., late teens to late 20s) can achieve a successful transition to work has grown considerably, stemming from various disciplines, such as educational sciences, psychology, sociology, and economics. These disciplines have all produced valuable knowledge, yet, they mostly exist as separate silos, without clear integration. To create an overview of the literature, we systematically reviewed school-to-work transition literature and used a sustainable career lens to organize it. Based on 365 articles from the past 28 years, our review findings show that there are different conceptual and theoretical approaches to studying school-to-work transitions. We subsequently organize these perspectives into antecedents categorized into the sustainable career perspective's person, context, and time dimensions. Moreover, we categorize school-to-work transition outcomes as proximal and more distal outcomes related to happiness, health, and productivity indicators. Finally, we reflect on the implications of our review article and suggest ways forward for conceptualizing and theorizing modern school-to-work transitions, along with an agenda for future research.

Keywords: school-to-work transition, labor market entry, sustainable career, youth employment, emerging adulthood

The school-to-work transition refers to the phase during which an individual leaves education and commences employment (Ng & Feldman, 2007). This transition is considered a key developmental task in the individual's transition to adulthood (Arnett, 2000; Grosemans, Hannes, et al., 2020). Successful school-to-work transitions are essential in cultivating self-efficacy (Pinquart et al., 2003), coping skills (Koen et al., 2012), and identity (Grosemans, Hannes, et al., 2020; McKee-Ryan & Harvey, 2011) among emerging adults (i.e., the age period from the late teens through the mid to late 20s; Arnett, 2000). Moreover, this first significant career transition establishes a pattern for future career transitions to potentially establish long-term career sustainability (Akkermans, Blokker, et al., 2021; De Vos et al., 2019; Zacher, 2015; Zacher & Froidevaux, 2021). Conversely, research consistently reveals that a poor start in the labor market can have a long lasting and detrimental impact on future career development and later life outcomes (Baert et al., 2013; Luijckx & Wolbers, 2009; Mills et al., 2005; Schulenberg & Schoon, 2012). From an economic and societal standpoint, a successful school-to-work transition is important because it serves as a prerequisite for organizational productivity, eco-

nommic growth and development, and sustainable governmental welfare policies (Cefalo et al., 2020; Ryan, 2001).

Research on school-to-work transitions has developed considerably in recent years, and a diverse set of perspectives and empirical findings on the school-to-work transition now exists, which has resulted in several reviews of the literature. However, these reviews have either analyzed literature within specific disciplinary domains (Blustein, 1995; Grosemans et al., 2017; Grosemans, Hannes, et al., 2020; Kerckhoff, 1995; Rosenbaum, 1996; Schoon, 2020) or focused on specific elements of the transition itself (e.g., institutional arrangements and stratification processes or work-related learning and education–job fit). These articles show that significant differences exist across different disciplinary perspectives. For instance, psychological and educational research has predominantly focused on individual agentic factors, whereas economic and sociological studies have primarily focused on the role of institutional and structural characteristics. These disciplines have all produced valuable knowledge of modern school-to-work transitions. Yet, they mostly exist as separate silos, without clear integration. As a result, despite the existing literature reviews, there is an unclear scope of research and incoherence

in the empirical body of knowledge in this area (DeLuca et al., 2015). Hence, we argue that a multidisciplinary perspective on school-to-work transitions can create connections between these knowledge bases, thereby enabling researchers to understand the complex interplay between the individual (i.e., micro-level) and contextual (i.e., macro-level) features in the school-to-work transition process.

Therefore, this article presents a systematic literature review *across* disciplinary boundaries to *organize* the existing research on school-to-work transitions. Specifically, we organize the thus far disconnected scholarly literature in this area from a sustainable career perspective (De Vos et al., 2020; Van der Heijden et al., 2020). Using a sustainable career lens as a multidisciplinary perspective to organize research on school-to-work transitions is appropriate for several reasons. First, the transition from education to work is the first major career transition that workers must navigate and, as such, forms a critical part of people's careers (Akkermans, Blokker, et al., 2021; Ng & Feldman, 2007). Second, career transitions are processes including pre- and post-transition elements (Sullivan & Al Ariss, 2021), hence allowing us to organize the separate disciplinary knowledge bases that tend to focus exclusively on specific parts of the process. Third, a sustainable career perspective entails examining the active interplay between individual and contextual elements impacting people's careers (De Vos et al., 2020), thereby allowing an organization of micro and macro perspectives on school-to-work transitions.

The purpose of this review is twofold. First, we organize existing research on the school-to-work transition using a sustainable career perspective. Second, we present a research agenda with several critical areas for further research. In doing so, this study makes three significant contributions to the school-to-work transition literature and broadly to the lifespan career development literature. First, we organize school-to-work transition research originating from multiple disciplines using a systematic review methodology to provide an overview of key developments and theories used in school-to-work transition literature published over the past 28 years. In doing so, we construct an overview that unifies previously isolated empirical findings on the school-to-work transition, which is a first step toward understanding how the different approaches to studying school-to-work transitions complement each other. Second, organizing the knowledge from different disciplines using a sustainable career lens means we position the school-to-work transition as the first critical career transition in people's lives. Accordingly, we describe the empirical process of this career transition based on our literature review findings. Such a career perspective has the potential to serve as a shared knowledge base for scholars across disciplines, such as education, psychology, sociology, and economics. Third, based on our literature review findings, we develop a research agenda and suggest theoretical ways forward in the field, making this review a valuable source of information for scholars and practitioners from a wide variety of research areas interested in the school-to-work transition.

A SUSTAINABLE CAREER PERSPECTIVE ON SCHOOL-TO-WORK TRANSITIONS

Due to changes in the world of work (e.g., globalization, technological changes, flexibilization, and polarization of

labor markets; Chesters, 2020; Hall et al., 2018), career transitions—from the first transition to work to retirement transitions—are no longer one-time, permanent events (Cahill et al., 2018; Mortimer et al., 2008). Instead, career pathways may involve a series of choices and learning cycles (De Vos et al., 2019; Hall et al., 2018) and deviate from the traditional sequential order (Mortimer et al., 2008; Vuolo et al., 2014). This is reflected in contemporary school-to-work transitions, which have become increasingly individualized, longer, more complex, and uncertain (Cebulla & Whetton, 2018; Gangl, 2002; Schoon et al., 2001; Wolbers, 2007). Although the school-to-work transition traditionally has been conceptualized as an age-related and normative linear trajectory (Buchmann & Kriesi, 2011; Solga & Kohlrausch, 2013), present school-to-work transitions often involve different routes and various attempts while emerging adults establish themselves on the labor market (Schoon & Silbereisen, 2009). As a result of these changes in the nature of school-to-work transitions, normative linear life trajectories, consisting of finishing full-time education (by graduation or drop out) and entering stable long-term employment, no longer adequately reflect movements in the school-to-work transition (Brzinsky-Fay & Solga, 2016; Lechner et al., 2016).

In this review, we consider the school-to-work transition the starting point of a journey in building a sustainable career (Akkermans, Blokker, et al., 2021; De Vos et al., 2019). Because careers are an evolving sequence of a person's work experience over time (Arthur et al., 1989), experiences earlier in the career shape subsequent career transitions and long-term career sustainability (e.g., Sullivan & Al Ariss, 2021; Wang & Wanberg, 2017; Zacher & Froidevaux, 2021). In other words, the school-to-work transition sets the stage for other transitions over the course of a person's life, making it an important foundation for the entire lifespan (Zacher, 2015; Zacher & Froidevaux, 2021). This transition, therefore, represents the first step in an individual's journey to sustainable career development (Akkermans, Blokker, et al., 2021).

Sustainable career development refers to the sequences of career experiences that reflect an individual's movement within their context over time. This is indicated by their degree of happiness, their health, and their productivity (De Vos & Van der Heijden, 2015; De Vos et al., 2020). Although all careers evolve over the course of a person's life, some career sequences are more sustainable than others. According to the sustainable career framework presented by De Vos et al. (2020), three dimensions determine career sustainability: the person, the context, and the (development over) time. First, the *person* dimension refers to the individual's responsibility and accountability for their career development. This places the individual as the primary agent managing their career trajectories and career-related outcomes. Second, the *context* dimension asserts that people always operate in a broader social context, where various factors (e.g., home, work, organizations, and labor market dynamics) shape career trajectories. The individual may encounter opportunities or constraints due to the interactions with the context in which they operate, affecting career sustainability over time. Third, the *time* dimension stresses that every career implies the movement of an individual through time, resulting in a dynamic career development process. For career sustainability, this means that individuals experience a variety of patterns of continuity and change over time, which interact

with individual and contextual elements to shape someone's career sustainability.

The dimensions of sustainable careers can be applied to school-to-work transitions, as the school-to-work transition is a complex process made up of person, context, and (development over) time dimensions (e.g., Akkermans, Blokker, et al., 2021; Peng, 2020). Therefore, we argue that the sustainable career framework (De Vos et al., 2020) can bring together the multidisciplinary literature on the school-to-work transition. This framework considers the individual to be the focal person, yet it also adopts a systemic and dynamic approach to include associated stakeholders and the contexts in which the individual operates in over time. For instance, individual-level predictors (e.g., educational attainment or competencies) have more or less impact on school-to-work transition success depending on contextual features (e.g., job opportunities and social-economic status) and changes over time (e.g., cohort effects; see Assaad & Krafft, 2021). As proof, in times of economic decline, emerging adults generally end up facing less desirable school-to-work transitions (Lechner et al., 2016), and differences within these cohorts can only be explained by including individual-level predictors in research designs. As such, adopting a sustainable career approach to the school-to-work transition allows for the integration of previously isolated levels of analysis (i.e., person and context), while concurrently incorporating the role of development over time, from preparation to initial adaption, which is crucial when studying career transitions such as the school-to-work transition (Peng, 2020; Sullivan & Al Ariss, 2021; Zamfir et al., 2020).

In all, this review uses a sustainable career lens to organize the empirical findings of the school-to-work transition from various disciplines. We use the dimensions (i.e., person, context, and time) and indicators (i.e., happiness, health, and productivity) of sustainable careers (De Vos & Van der Heijden, 2015; De Vos et al., 2020) to map the empirical findings on the school-to-work transition, connecting the disciplines active in this particular research area. Note that although a career sustainability perspective may imply long-term career dynamics, De Vos et al. (2020) argue that short-term timeframes are also relevant to study sustainable careers. Moreover, scholars have previously argued that a sustainable career lens on the initial transition into work is valuable and appropriate (Akkermans, Blokker, et al., 2021; De Vos et al., 2019). Finally, the school-to-work transition inherently ends at initial labor market integration, meaning that long-term career outcomes are no longer direct consequences of the school-to-work transition. Taken together, we, therefore, aim to create a multidisciplinary perspective on how the school-to-work transition can be the foundation for a sustainable career.

The following sections will describe the review methodology and provide an overview of existing literature. Finally, the discussion addresses how future research can build on our review findings.

REVIEW METHOD

To identify, analyze, and synthesize empirical studies on the school-to-work transition, we conducted a systematic literature review following the methodology detailed by Siddaway et al. (2019). This method is suitable for integrating the large body of school-to-work transition literature in a transparent and replicable manner as it follows a predefined procedure to

ensure a thorough and systematic search process, minimizing researcher bias.

First, we performed an initial scan of the school-to-work transition literature in the Web of Science's Social Sciences Citation Index database, which holds scholarly journals from across 55 social science disciplines and lends itself particularly well to multidisciplinary approaches (Armstrong & Wilkinson, 2007). This search, using the keywords "school to work transition," produced 2,884 items. Limiting the search to only peer-reviewed journal articles in English still yielded 2,544 hits. In the 1990s, 200 peer-reviewed articles were published on this topic. In the 2000s, this number rose to 486, and then in the 2010s, it increased to 1,733 publications. We then proceeded with a more refined search using a Boolean approach to connect the terms "education to work OR school to work OR university to work OR college to work AND transition." The keywords were intentionally broad to capture as many relevant articles as possible across disciplines and literature streams. All disciplines were included. We set the timespan to empirical studies published between 1994 and 2022 because, from 1994 onwards, new perspectives on careers have emerged, such as boundaryless careers (DeFillippi & Arthur, 1994) and protean careers (Mirvis & Hall, 1994). School-to-work transition literature has developed significantly since then. Next, we ensured that the refined search only included peer-reviewed articles that explicitly mentioned the term "transition" in combination with terms referring to school and work. This yielded an initial pool of 1,025 articles. Finally, the search was restricted to empirical papers. Based on these predefined boundary criteria, we excluded 160 articles.

We manually inspected the 865 remaining titles and abstracts (see Figure 1 for the systematic inclusion/exclusion process). To ensure a rigorous yet replicable and transparent literature selection, we defined several boundary conditions. This review focused on the first school-to-work transition processes of emerging adults without exceptional characteristics (e.g., disabilities, special giftedness). We acknowledge that disadvantaged and at-risk youth are especially vulnerable during the school-to-work transition phase (e.g., Bynner & Parsons, 2002; Chadderton & Colley, 2012) and this is an important group to study. However, we considered studies on specific groups of emerging adults to be beyond the scope of this review as this would form a separate literature stream that would warrant a unique review. Similarly, we excluded studies focused on youth with "Not in Education, Employment, or Training" (i.e., NEET) as starting points for their transition to work (e.g., Bynner & Parsons, 2002). No restrictions were made based on educational levels, but we excluded studies examining transitions from non-regular education to work (e.g., special needs education; Wagner & Blackorby, 1996). In addition to these restrictions, we excluded studies examining emerging adults with specific challenges, such as physical or psychological disabilities (e.g., Fabian, 2007), Autism Spectrum Disorders (e.g., Lee & Carter, 2012), visual impairments (e.g., McDonnall, 2010), or those who were deaf and hard of hearing (e.g., Valentine & Skelton, 2007). Lastly, studies examining other types of transitions (e.g., school-to-school transition, work-to-school transition, transition to adulthood) and studies not focusing on the school-to-work transition (e.g., healthy behavior during life transitions; Koehn et al., 2016; Liu et al., 2022) were excluded.

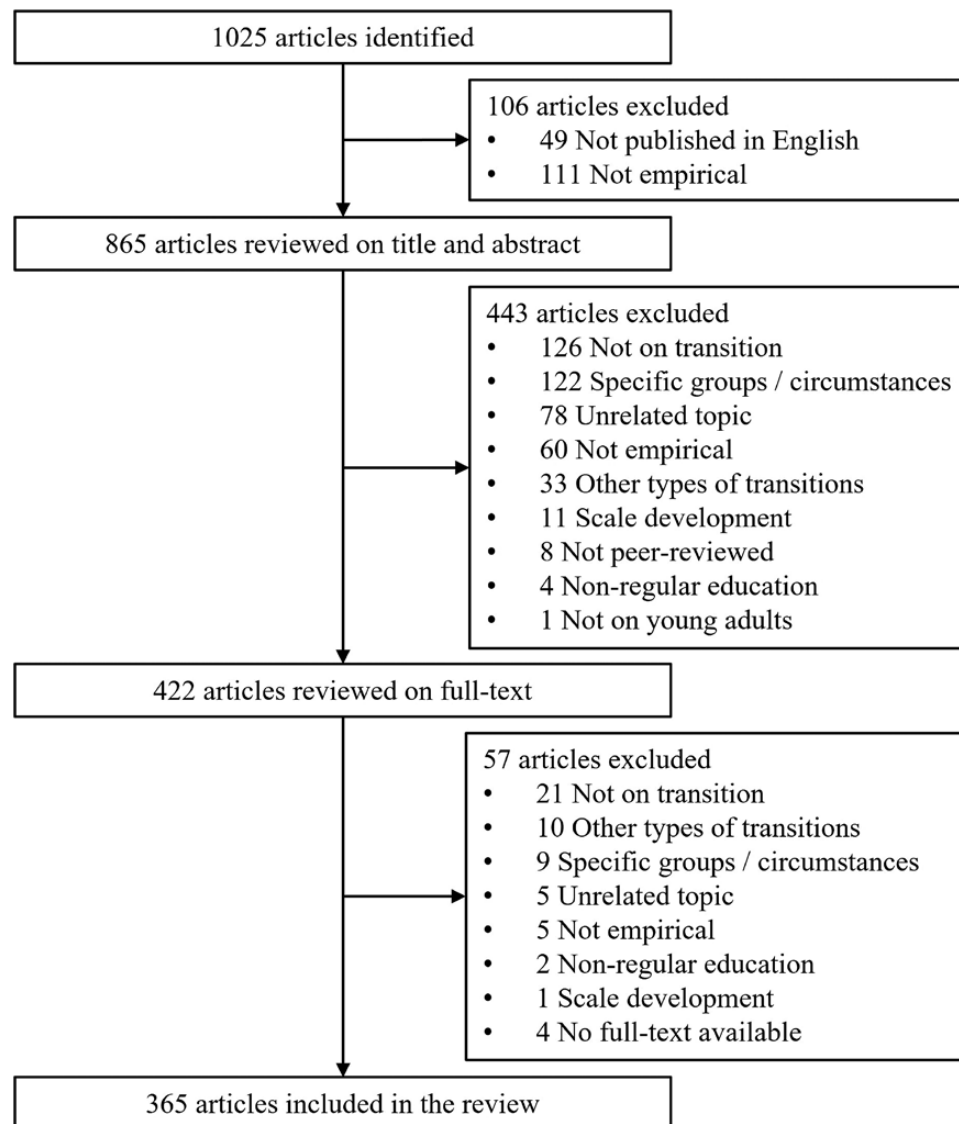


Figure 1. Systematic review process.

To ensure a high-quality and unbiased review strategy, this study's first and second authors independently reviewed a randomly selected subsample of 60 papers from the database. They went on to discuss these abstracts to maximize validity. A Cohen's kappa rating was calculated to assess inter-rater agreement and a cut-off score of >0.80 was chosen, indicating substantial agreement between the researchers (Viera & Garrett, 2005, p. 361). Cohen's kappa was 0.84. After validating the inclusion criteria, the first author reviewed the full texts of the remaining 422 articles. Only studies that met the previously specified inclusion criteria and none of the exclusion criteria were included in this review. Based on the full-text inspection, we excluded an additional 57 articles. Most of the excluded studies mentioned the search keywords in the abstract and throughout the article but did not focus on the antecedents and outcomes of the school-to-work transition. For instance, Barone and Ortiz (2011) compared incidences of overeducation in different European countries. This resulted in a final set of 365 articles for inclusion in this review. See Supplementary Tables S1 and S2 in the online supplemental files for the complete reference list of included articles and

coding scheme depicting all antecedents and outcomes of the school-to-work transition, respectively.

REVIEW FINDINGS

General overview of included articles

Our dataset covers research published in 17 disciplines (see Table 1) and 125 journals. The four major disciplines studying the school-to-work transition were psychology (26.8%), sociology (25.2%), economics (16.7%), and educational sciences (11.2%). The articles were most frequently published in the *Journal of Vocational Behavior* (8.5%, $n = 31$), the *International Journal of Manpower* (4.9%, $n = 18$), the *Journal of Career Development* (4.7%, $n = 17$), the *European Sociological Review* (3.8%, $n = 14$), and the *Journal of Youth Studies* (3.8%, $n = 14$), respectively. The majority of the articles employed a quantitative design (82.7%, $n = 302$) and the remaining articles used a qualitative design (17.3%, $n = 63$). Combined, the articles in our sample comprised samples from 83 different countries. The most frequently examined countries in school-to-work

transition research were the United States of America (14.8%), Germany (14.2%), the United Kingdom (13.2%), Italy (11.8%), Spain (10.1%), the Netherlands (9.9%), Finland (9.2%), France (8.8%), and France (7.9%). Several scholars also conducted comparative analyses between two or more countries, with a few studies comparing up to 31 countries in one article (e.g., [Van Mol, 2017](#)). [Supplementary Table S3](#) lists all countries examined by the articles included in this review.

Defining school-to-work transitions

Given the unclear scope and inconsistent definitions in school-to-work transition research across disciplines, we first examined the main perspectives on this transition to allow for a unified definition of the transition. In support of using a sustainable career lens ([De Vos et al., 2020](#); [Van der Heijden et al., 2020](#)) to organize the literature, we observed that scholars across disciplines view the school-to-work transition at the intersection of education and work, shaped by the individual (i.e., person) operating in different contexts (i.e., educational, organizational, and societal) over time (i.e., a career transition process). Although studies most commonly referred to the school-to-work transition as the period during which an individual leaves school and commences employment ([Ng & Feldman, 2007](#)), there was no clear consensus on the meaning of terms such as “leaving school” and “starting employment” (e.g., [Brzinsky-Fay, 2014](#); [Raffe, 2014](#)). Despite the various descriptions of the school-to-work transition and the different contexts in which the transition can be embedded, the literature indicated that the school-to-work transition is a critical initial sequence in an individual’s career.

Our literature review indicated there were four main perspectives on the school-to-work transition: (a) single-status change, (b) human capital accumulation, (c) life course development, and (d) developmental transition into adulthood (see

[Table 2](#) for detailed descriptions). The application of these perspectives on school-to-work transitions differed across scholarly disciplines. First, psychological research, mainly social and organizational psychology, generally adopted the single-status change approach to school-to-work transitions. For instance, studies examined how individual characteristics and career resources relate to transition outcomes, such as employment status, job satisfaction, and early career success ([Koen et al., 2012](#); [Lo Presti et al., 2022](#); [Pinquart et al., 2003](#)). Of note, developmental psychology typically adopted the developmental transition to adulthood approach. For instance, studies examined how life course structures shaped the timing and sequencing of adult roles and adult identity acquisition (e.g., [Eliason et al., 2015](#)). Second, educational and economic research often used the human capital accumulation approach, albeit with a slightly different focus. Educational research examined, for example, the effectiveness of school-to-work programs (e.g., [Neumark & Rothstein, 2006](#)), educational regimes (e.g., [Brunetti & Corsini, 2019](#); [Heckhausen & Tomasik, 2002](#)), and transferrable human capital, also referred to as graduate employability ([Herbert et al., 2020](#); [Monteiro et al., 2022](#); [Okay-Somerville & Scholarios, 2017](#)). In contrast, economic research examined issues including the return on investment in education ([Pastore, 2010](#)) and the role of economic conditions ([Choudhry et al., 2012](#)). Third, sociological studies typically adopted a life course approach to examining variations in school-to-work transition patterns ([Brzinsky-Fay, 2007](#); [Schoon & Bynner, 2019](#); [Wolbers, 2007](#)), national institutional arrangements (e.g., [Saar et al., 2008](#)), and social stratification processes based on gender and social background in youth labor market integration ([Berloff et al., 2019](#); [Iannelli & Smyth, 2008](#)).

The four main disciplines studying school-to-work transitions also adopted different time perspectives. Most notably, educational research tended to focus on the preparation for the transition and, sometimes, on the immediate short-term outcomes. Similarly, psychological research focused mainly on the outcomes immediately following the transition. These two disciplines typically studied outcomes up until a maximum of five years after graduation. Conversely, sociological and economic research tended to focus on slightly more distal outcomes between 5 and 10 years after graduation. Hence, when organizing these findings from a sustainable career perspective, an overview starts to emerge of both immediate and somewhat more distal outcomes of school-to-work transitions.

Our review also showed that school-to-work transitions consist of two critical elements that are usually not made explicit: a *physical* and a *psychological* element. First, the physical element refers to someone moving from an educational institute to an organizational environment. Second, the psychological element entails shifting from a student role to a worker role. All four abovementioned approaches generally included an indicator of a physical move in the school-to-work transition, such as shifting status from enrollment in education to finding employment. However, psychological literature in particular focused on the shift in role identity and the psychological element of transitioning from school to work ([Koen et al., 2012](#); [Ng & Feldman, 2007](#)). Of note, the psychological transition from school to work could start earlier than the physical move (i.e., preparing for the transition) and may last longer (i.e., further adaption to a new role after the physical move is completed).

Table 1. Overview of included disciplines and number of selected articles per discipline.

Discipline	Number of included articles (%)
Psychology	104 (28.3%)
Economics	67 (18.2%)
Sociology	67 (18.2%)
Education and educational research	42 (11.4%)
Multidisciplinary	28 (7.6%)
Industrial relations and labor	25 (6.8%)
Demography	7 (1.9%)
Public, environmental, and occupational health	6 (1.6%)
Environmental studies	5 (1.4%)
Management	4 (1.1%)
Geography	3 (0.8%)
Anthropology	2 (0.5%)
Family studies	2 (0.5%)
Social work	2 (0.5%)
Statistics	2 (0.5%)
Computer science	1 (0.3%)
Nursing	1 (0.3%)

Table 2. An overview of four approaches to the school-to-work transition.

	Conceptualization	Beginning	End	Duration	Indicators of success	Key references
Single-status change	The school-to-work transition is a linear route from education to employment.	Completion of full-time education or training	Labor market entry	± 6 months to 1 year	Quickly finding first regular, continuous, full-time, and permanent employment.	Absor and Utomo (2017), Agovino and Busato (2017), Aguilar et al. (2018), Barbieri et al. (2018), Bratberg and Nilsen (2000), Cederberg and Hartsmar (2013); Cheong and Narayanan (2021), Curry et al. (2019), Daehlen (2008), Defloor et al. (2015), Domadenik et al. (2010), Kim et al. (2015), Koivisto et al. (2007), Neuenschwander and Hofmann (2022); Phillips et al. (2002), Stoilova and Dimitrova (2017).
Human capital accumulation	The school-to-work transition is the period between learning completion and establishing stable/decent employment.	Completion of full-time education or training	Labor market integration	± 6 months to 5 years	Effective job search, quickly finding decent employment (i.e., regular, continuous, full-time, and stable), with limited unemployment duration and status shifts, that allows for transfer and accumulation of human capital, return to education (e.g., earnings development), and smooth labor market integration.	Bédoué and Giret (2011), Brazienne (2020), Brunetti and Corsini (2019), Corrales-Herrero and Rodríguez-Prado (2012), Garrell (2012), Mueller and Wolter (2014), Neumark (2002), Neumark and Rothstein (2006), Rowe et al. (2017), Yang et al. (2017); Zamfir et al. (2020).
Life course development	The school-to-work transition is a sequential process with various individual trajectories that extend over a relatively long period, leading from the enrollment in full-time education and training systems to a relatively stable position on the labor market.	Adolescence (career preparation)	Labor market integration	± 5 to 10 years	Finding suitable, decent, and stable employment that meets the individual's expectations (i.e., person-job fit). Satisfaction with transition, career, and life. Safeguarding well-being.	Assaad and Krafft (2021), Begu and Vasilescu (2017), Buhl et al. (2018), Cebulla and Whetton (2018), Dorsett and Lucchino (2014); Hui et al. (2018), Mortimer et al. (2008), Moss-Pech (2021), Peng (2020), Saar (2005), Saar et al. (2008), Scandurra et al. (2021) Scherer (2001), Tchibozo (2004), Vancea and Utzet (2018), Vuolo et al. (2014), Wolbers (2003).
Developmental transition into adulthood	The school-to-work transition is a key developmental task in the transition to adulthood. It includes institutionalized sequences of status-role transitions (i.e., transition from education to employment), based on social norms regarding age-appropriate behavior, timing, and sequencing of statuses and roles.	Late teens (± 18 years old)	Late 20s (± 29 years old)	± 10 years	Finding suitable and stable employment. Development of a professional identity. Becoming economically independent and productive in supporting oneself and others (i.e., purpose in life, positive relationships).	Aksakal and Schmidt (2021), Blustein et al. (2002), Buhl (2007), Cefalo et al. (2020), Dudyrev et al. (2020), Fernández (2006), Koen et al. (2012), Lo Presti et al. (2022), Ng-Knight and Schoon (2017), Noack et al. (2010), Park et al. (2019), Santisi et al. (2018), Schoon and Bynner (2019), Schoon and Lyons-Amos (2017), Tomasik et al. (2009), Tsuzuki (2015), Varshavskaya and Podverbnykh (2020).

Note. Only publications that detailed an explicit definition of the school-to-work transition were included in this table. Evaluation of the 365 publications revealed that only 58 publications provided an explicit definition of the school-to-work transition, its duration, and indicators of success.

Based on the review findings on the different perspectives and elements in the literature, we define school-to-work transitions as follows: *The school-to-work transition is a process during which individuals navigate a physical and psychological movement when leaving education and starting to integrate into the labor market.*

Finally, we reviewed the theories that have been used in school-to-work transition research to get a grasp of how different research streams have attempted to understand this complex process. As Table 3 shows, human capital theory was the most often-used theory, and it was commonly used in all four of the major disciplines studying the school-to-work transition (though in relative terms not that often in psychological research). The only other theories that were used in all disciplines were signaling theory and job search theory. Other often-used theories were lifespan developmental theories, career construction theory, and social cognitive career theory. However, those theories were almost exclusively used in psychological research on school-to-work transitions. As a general observation, we found that psychology, as a discipline, clearly used theory the most often in their empirical articles. That said, we also observed that in many cases, studies applied the theories rather statically. For example, although most theories imply some sort of processual approach, most empirical studies leveraging those theories used them to explain direct relations between antecedents and outcomes of school-to-work transitions.

School-to-work transition outcomes: happiness, health, and productivity

We now turn to our organizing framework of the empirical finding in the school-to-work transition literature. Specifically,

we start with an overview of the outcomes studied in the literature, which we organize based on the happiness, health, and productivity indicators of career sustainability (De Vos et al., 2020; see Figure 2). As a general trend, we observed that school-to-work transition literature initially had a strong focus on productivity outcomes (e.g., employment status, Scherer, 2001; Trottier et al., 1996), followed by health (e.g., physical and psychological well-being, Buhl, 2007; Poulin & Heckhausen, 2007), and, only recently, happiness (e.g., career satisfaction, Kim et al., 2016; Levels et al., 2014).

School-to-work outcomes: happiness

First, scholars have examined emerging adults' *happiness* as an indicator of school-to-work transition success. In terms of immediate transition outcomes, studies researched emerging adults' person-job fit (Grosemans, Vangrieken, et al., 2021; Levels et al., 2014; Neuenschwander & Hofmann, 2022), and satisfaction with their job (e.g., Blustein et al., 1997; Park et al., 2019), their job benefits (Gore et al., 2003), and the transition itself (Hirschi, 2010; Ruschoff et al., 2022). Studies taking a somewhat more long-term perspective examined school-to-work transition success in terms of career satisfaction (i.e., subjective career success; Blokker et al., 2019; Kim et al., 2016; Zhang et al., 2022), overall happiness (Siembab & Stawarz, 2019), life satisfaction (Peng, 2020; Ruschoff et al., 2022), purpose in life, and positive relationships (Haase et al., 2012).

School-to-work outcomes: health

Second, school-to-work transition success has been studied from the perspective of emerging adults' *health*. For example, researchers looked at individual's ability to safeguard their

Table 3. Theories used in school-to-work transition research by the four main disciplines.

Theory	Description	Economics	Education	Sociology	Psychology
Human capital theory	(e.g., Becker, 1962), focuses on the accumulation of skills and abilities through training and education	12 (19.67%)	9 (21.95%)	19 (20.65%)	6 (6.12%)
Signaling theory	(e.g., Spence, 1973), focuses on an exchange of signals (e.g., educational level), that are indicative of on-the-job productivity, between a future employee and employer	2 (3.28%)	4 (9.76%)	5 (5.43%)	1 (1.02%)
Career construction theory	(e.g., Savickas, 2002), focuses on developing career adaptability resources	0 (0%)	1 (2.44%)	1 (1.09%)	14 (14.29%)
Job competition model	(e.g., Thurow, 1975), focuses on the individual's relative position in the labor market compared to peers	0 (0%)	0 (0%)	4 (4.35%)	1 (1.02%)
Life course/lifespan theories	(e.g., Heckhausen & Schulz, 1995), focuses on the transition as a major developmental task	0 (0%)	0 (0%)	3 (3.26%)	20 (20.41%)
Social capital theory	(e.g., Burt, 1998), focuses on social relationships as resources that can help navigate the transition	0 (0%)	2 (4.88%)	5 (5.43%)	2 (2.04%)
Dual labor market theory	(e.g., Bertola et al., 2007), divides labor markets into primary and secondary sectors	2 (3.28%)	0 (0%)	0 (0%)	0 (0%)
Job search theory	(e.g., Mortensen, 1970), focuses on selecting the "best" job option among possible alternatives	2 (3.28%)	3 (7.32%)	2 (2.17%)	7 (7.14%)
Self-determination theory	(e.g., Deci & Ryan, 2000), focuses on the fulfillment of basic human needs of motivation	0 (0%)	0 (0%)	0 (0%)	5 (5.1%)
Social cognitive (career) theory	(e.g., Bandura, 2001), focuses on developing self-efficacy and outcome expectations	0 (0%)	0 (0%)	0 (0%)	20 (20.41%)
Theory of planned behavior	(e.g., Ajzen, 1991), focuses on attitudes, subjective norms, perceived control, and behavioral intentions	0 (0%)	0 (0%)	0 (0%)	2 (2.04%)
Happenstance learning theory	(e.g., Krumboltz, 2009), achieving success through planned and unplanned learning experiences	0 (0%)	0 (0%)	0 (0%)	4 (4.08%)

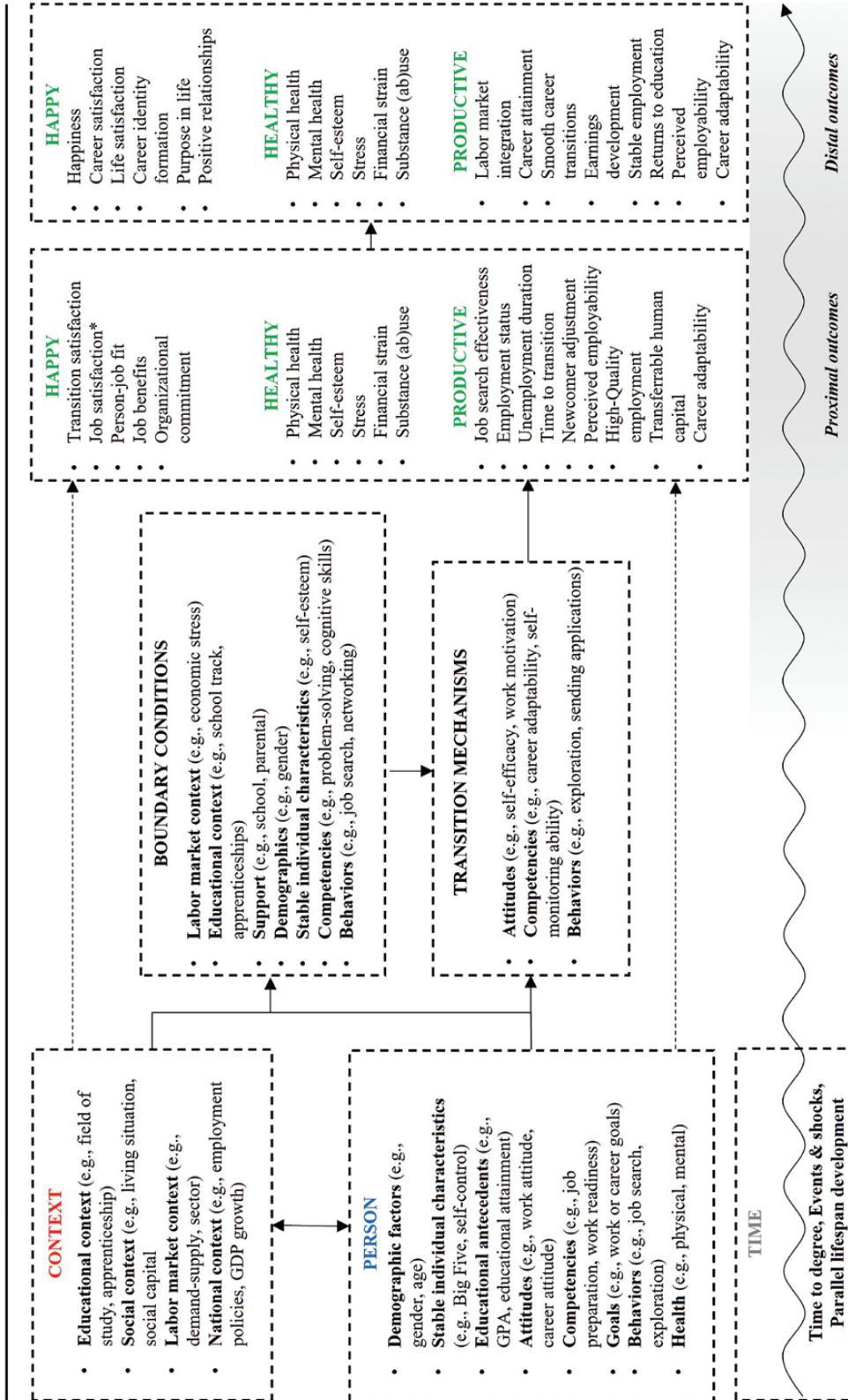


Figure 2. An overview of school-to-work transition research organized from a sustainable career perspective.

physical and mental health (Buhl, 2007; Haase et al., 2012; Huegaerts et al., 2020), deal with stress levels and financial strain (Dietrich et al., 2012; Okay-Somerville & Scholarios, 2017; Poulin & Heckhausen, 2007), and develop self-esteem (Ismail et al., 2016) as indicators of transition success. Several studies focused on the potential mental health risks associated with less successful transition pathways, such as burnout (Huegaerts et al., 2020), depressive symptoms (Koivisto et al., 2007, 2010), and substance (ab)use (Ling & O'Brien, 2013). The specific indicators for health did not differ for immediate and somewhat longer-term outcomes of the transition.

School-to-work outcomes: productivity

Third, the most often studied type of school-to-work transition success indicator is *productivity*. Our review uncovered a long list of productivity-related outcomes, such as employment status, unemployment duration, time to transition, perceived employability, high-quality employment, transferrable human capital, labor market integration, career attainment, earnings development, stable employment, and returns on education. In terms of immediate productivity outcomes, studies looked at, e.g., obtaining a high-quality first job (Okay-Somerville & Scholarios, 2022; Pan et al., 2018) and quick labor market entry (Gartell, 2012; Salas-Velasco, 2007) with minimal time between school and work (Baert et al., 2013; Cefalo et al., 2020) or in unemployment (Vuolo et al., 2012). Additional outcomes included smooth newcomer adjustment (Nägele & Neuenschwander, 2014; Neuenschwander & Hofmann, 2022; Takeuchi et al., 2021a), a well-developed perception of employment opportunities (i.e., perceived employability; Herbert et al., 2020; Okay-Somerville et al., 2022), and the accumulation of transferrable human capital (Bridgstock, 2009). The more distal productivity outcomes included finding stable employment (De Lange et al., 2014) and career attainment (Vuolo et al., 2012, 2014), engaging in smooth subsequent career transitions (Huegaerts et al., 2020; Middeldorp et al., 2019), and realizing earnings development (Cooke, 2003) and returns on investment in education (Corrales-Herrero & Rodríguez-Prado, 2012).

School-to-work transition antecedents: person, context, and time

We organized the antecedents of school-to-work transition success in line with the sustainable career dimensions of person, context, and time (De Vos et al., 2020).

School-to-work antecedents: person

Our literature review identified eight clusters of antecedents at this level: demographic factors, health, individual characteristics, educational antecedents, attitudes, goals, competencies, and behavior.

Demographic factors.

Childhood factors (Wiesner et al., 2003), gender (Acosta-Ballesteros et al., 2017; Heyne & Gebel, 2016; Iannelli & Smyth, 2008), age (Salas-Velasco, 2007), ethnicity (Baert et al., 2016), and nationality (Sackmann, 2001) all emerged as relevant demographic factors for the school-to-work transition. For example, low-income families, second-generation immigrants, certain peer characteristics, and a lack of personal adjustment during childhood and adolescence predicted poor school-to-work transition outcomes (Baert et

al., 2016; Wiesner et al., 2003). Furthermore, although men and women initially faced the same difficulties in the transition (Berloff et al., 2019), men found jobs more quickly (Salas-Velasco, 2007), yet at the cost of employment quality (Heyne & Gebel, 2016). The findings on the role of age were somewhat mixed. Although emerging adults who were older when they made educational decisions and entered the labor market benefitted from a faster school-to-work transition as a result of age norms and higher (developmental) levels of maturity (Mortimer et al., 2005), they also experienced more difficulties throughout the school-to-work transition.

Health.

Both physical and mental health were studied as antecedents of the school-to-work transition. Those with (long-term) health conditions were less satisfied with employment opportunities (Cebulla & Whetton, 2018). Furthermore, adolescents who had mental health problems in early childhood (Wiesner et al., 2003) and emerging adults who suffered from mental health problems (Huegaerts et al., 2020) experienced poorer transition outcomes, such as delayed employment and a higher chance of ending up in long-term unemployment.

Stable individual characteristics.

Our review findings pointed to several stable individual characteristics studied as antecedents in the school-to-work transition literature: proactive personality (Pan et al., 2018; Zhou et al., 2018), Big Five personality (Baay, Van Aken, De Ridder et al., 2014; Buhl, 2007), self-control (Baay, De Ridder, et al., 2014; Li et al., 2021), and locus of control (Ng-Knight & Schoon, 2017). Emerging adults with an internal locus of control had more successful school-to-work transitions (Grosemans, Coertjens, et al., 2020). Moreover, an internal locus of control reduced the risk of economic inactivity and unemployment for those with disadvantaged backgrounds in particular (Ng-Knight & Schoon, 2017). Furthermore, a proactive personality and self-control led to enhanced job search outcomes, such as more job offers and a higher starting salary (Baay, De Ridder, et al., 2014; Pan et al., 2018). Finally, the Big Five personality traits extraversion and emotional stability were related to better job search outcomes after graduation (Baay, Van Aken, De Ridder, et al., 2014).

Educational antecedents.

Educational antecedents studied in school-to-work transition success included extra-curricular activities (Caroleo & Pastore, 2018), GPA (Holtmann et al., 2017; Mobley, 2002), educational attainment (Noelke et al., 2012), time to degree (Aina & Casalone, 2020), and graduate employability (Herbert et al., 2020; Okay-Somerville et al., 2022). Many studies indicated that attaining a high level of education was the optimal method of preparing for the school-to-work transition (e.g., Cefalo et al., 2020; De Lange et al., 2014; Kogan, 2011). Highly educated emerging adults had smoother transitions (Zamfir et al., 2020), found high-quality employment more quickly (Heyne & Gebel, 2016; Smyth & McCoy, 2011), and reached higher occupational statuses in their first jobs (Noelke et al., 2012). Graduate employability (i.e., soft skills and abilities developed in education that are transferrable to the workplace and help graduates to become and remain employed) predicted employment chances in the

school-to-work transition. (Bridgstock, 2009; Rothwell & Arnold, 2007). However, this effect was dependent on the importance attached to specific skills in recruitment procedures and the value employers attributed to these skills (Van Mol, 2017). Although high levels of education predicted several proximal outcomes in the school-to-work transition (e.g., employment status, time to transition), especially graduate employability was predictive of slightly more distal initial career success (Lo Presti et al., 2022).

Attitudes.

Our review uncovered several critical attitudes included in school-to-work transition research: Self-efficacy (Emirza et al., 2021; Tolentino et al., 2019), educational aspirations (Heckhausen & Tomasik, 2002; Tomasik et al., 2009), vocational aspirations (Heckhausen & Tomasik, 2002; Tomasik et al., 2009), work attitudes (Curry et al., 2019), career attitudes (Petreski et al., 2017), values (Feij et al., 1995; Sorthaix et al., 2015), and calling (Park et al., 2019; Zhang et al., 2022). During the school-to-work transition, emerging adults progressively adjusted their aspiration for a “dream job” to “a job I am interested in” as the developmental deadline of the school-to-work transition approached (Heckhausen & Tomasik, 2002). Furthermore, studies demonstrated that emerging adults who had a calling were more successful in the school-to-work transition, reporting being more satisfied with their jobs through job involvement (Park et al., 2019).

Goals.

This review found two antecedents focused on goals as predictors of successful school-to-work transitions: Work-related goals (Dietrich et al., 2012) and career goals (Ruschoff et al., 2022). Studies showed that constructing work-related goals enhanced employment preparedness (Koivisto et al., 2010). Furthermore, emerging adults who prioritized work-related goals and set realistic and attainable goals had more successful school-to-work transitions in terms of good education–job fit, minimal periods of unemployment, and less stress (Dietrich et al., 2012; Nurmi et al., 2002). Preparation for the school-to-work transition also triggered changes in career goals, such that emerging adults became increasingly realistic and adapted their ambitions (Grosemans, Coertjens, et al., 2020; Hirschi & Vondracek, 2009). They also benefitted from peer networks who appraised their career goals as attainable, as this was related to transition satisfaction (Ruschoff et al., 2022).

Competencies.

Research on school-to-work transition success antecedents also focused on competencies. For example, emerging adults who developed work-related competencies, such as job preparation (Reegård, 2017), relevant work experience (Beam et al., 2020; Van Mol, 2017), and work readiness (Santisi et al., 2018) had more successful school-to-work transitions. Similarly, career-related resources, such as career adaptability (Koen et al., 2012; Tolentino et al., 2019) and career competencies (Lo Presti et al., 2022), helped emerging adults successfully manage the school-to-work transition. For instance, Koen et al. (2012) and Pan et al. (2018) showed that career adaptability training and internships predicted better transition success, such as higher employment quality, more job offers, and a higher starting salary. In addition, Lo Presti

et al. (2022) found that career competencies could predict initial employability and subjective career success.

Behaviors.

As a final category, our review uncovered several behavioral antecedents, which included the three subcategories of maladaptive behavior, job search behavior, and career behavior. The first, and smallest, category focused on maladaptive behaviors such as substance (ab)use, which negatively influenced the school-to-work transition (Kim & Lee, 2018; Ling & O'Brien, 2013). Second, job search behavior studies showed that job search intentions (Baay, De Ridder et al., 2014; Baay, Van Aken, Van der Lippe, et al., 2014), job search intensity (Aguilar et al., 2018), and effective job search strategies (Salas-Velasco, 2007; Varshavskaya & Podverbnykh, 2020) could predict a successful school-to-work transition. Higher job search intensity resulted in the smoothest job search process in terms of job offers (Salas-Velasco, 2007), whereas emerging adults who searched longer for a job had a lower probability of transitioning into employment and more often ended up in precarious work (e.g., fixed-term contracts) with lower wages (Gebel, 2009). Third, emerging adults who engaged in career-related behaviors, such as career preparation (Coetzee & Beukes, 2010; Hirschi & Vondracek, 2009), career exploration (Gamboa et al., 2020; Green et al., 2020; Zhou et al., 2018), career planning (De Vos et al., 2009; Nurmi et al., 2002), career decision-making (Phillips et al., 2001; Xin et al., 2020), and networking (De Vos et al., 2009; Okay-Somerville et al., 2022; Vincent et al., 2021), had more successful school-to-work transitions.

School-to-work transition antecedents: context

Our review findings pointed to four clusters of contextual antecedents: educational, social, labor market, and national context.

Educational context

. We identified six antecedents in the educational context: Program type (vocational vs. general) (Brunello & Rocco, 2017; Hampf & Woessmann, 2017; Levels et al., 2014), the field of study (Iannelli & Smyth, 2008), school quality (Cooke, 2003), school-to-work links (Bol et al., 2019; DeLuca et al., 2015; DiPrete et al., 2017; Holtmann et al., 2021), mentorship and counseling (Neumark & Joyce, 2000; Ogbuanyia & Chukwuedo, 2017), and internships and apprenticeships (Bonnal et al., 2002; Heckhausen & Tomasik, 2002; Moss-Pech, 2021; Ocampo et al., 2020). The relationship between the educational context and school-to-work transition success is complex. On the one hand, studies show that vocational training or specific degrees facilitate job matches and rapid transitions into initial employment (Levels et al., 2014) because apprentices benefit from in-house training and exposure to prospective employers in a more structured and predictable way (Bonnal et al., 2002; Sackmann, 2001). However, placement in vocational tracks can dissuade students from attending higher education institutions. This could pose a risk as emerging adults who obtain general skills in higher education often have more opportunities for long-term growth and development (Noelke et al., 2012) and are better able to recover from periods of unemployment (Korpi et al., 2003). Furthermore, the field of study accounts for variations in

access to paid employment (Iannelli & Smyth, 2008) and employment stability (e.g., temporary employment, Pullman, 2018). Finally, school networks structure a student's transition from school to work by providing employers with accurate information about students and giving students access to jobs (Bol et al., 2019; Damaske, 2009). Such links could be maximized through internships and apprenticeships. For example, in a dual system like the one in Germany, emerging adults gain work experience with an employer while still in education, facilitating successful school-to-work transitions (Bonnal et al., 2002; Heckhausen & Tomasik, 2002).

Social context

. The review findings uncovered three antecedents related to social context: Living situations (Cefalo et al., 2020), socioeconomic status (Anders & Dorsett, 2017; Matković & Kogan, 2014; Vincent et al., 2021), and social capital (Baay, Van Aken, De Ridder, et al., 2014). Overall, studies showed that emerging adults with high-quality social resources achieved more successful school-to-work transitions in terms of objective transition success at job entry (Kogan et al., 2013), whereas social status inequalities undermine transition success (Blustein et al., 2002; Heckhausen & Chang, 2009; Iannelli & Smyth, 2008), with more prominent differences evident in access to employment for some countries more than others (Iannelli & Smyth, 2008). Specifically, emerging adults from higher socioeconomic groups were revealed to have an employment advantage in the labor market because they tended to attain higher qualifications (Iannelli & Smyth, 2008) and had greater access to external resources (Blustein et al., 2002).

Labor market context

. We found eight contextual antecedents related to labor market conditions in the literature: Demand-supply (Graham et al., 2014; Léné, 2011), economic conditions (Aronson et al., 2015; Scandurra et al., 2021), cohort effects (relative transitions) (Assaad & Krafft, 2021; Brzinsky-Fay & Solga, 2016; Kogan & Unt, 2005; Wolbers, 2016; Yu & Chiu, 2014), employer preferences (Beam et al., 2020; Mueller & Wolter, 2014), local unemployment rates (Neumark, 2002; Schoon & Lyons-Amos, 2016), company size (Salvisberg & Sacchi, 2014), sector or industry (Corrales-Herrero & Rodríguez-Prado, 2012), and career barriers (Okay-Somerville & Scholarios, 2017; Okay-Somerville et al., 2022). For instance, poor initial labor market conditions (e.g., graduating during a recession) disrupted the school-to-work transition and had a persistently negative effect on early career development (Aronson et al., 2015; Scandurra et al., 2021). Similarly, a downturn in the business cycle associated with an increasing unemployment rate led to graduates receiving fewer job offers and lower wages (Van der Klaauw & Van Vuuren, 2010). Furthermore, labor market demand and supply determine the value of an individual's knowledge, skills, and abilities. For example, with an increase in the relative supply of highly educated workers, the value of an individual's degree is diminished (Léné, 2011). Lastly, career barriers—such as reduced opportunities in the graduate labor market, financial problems, and external conflict—were identified as potential disrupting factors in emerging adults' school-to-work transitions (Okay-Somerville & Scholarios, 2017; Okay-Somerville et al., 2022).

National context

. Five antecedents related to the national context were studied: GDP growth (Berloff et al., 2019; Cefalo et al., 2020), welfare and employment policies (Jung & Go, 2021), government coordination (Mobley, 2002; Pastore, 2010), employment protection legislation (Barbieri et al., 2018; Wolbers, 2007), government policies (Neumark & Rothstein, 2006), and national arrangements (Schoon & Lyons-Amos, 2016, 2017). Overall, better links between school and work in terms of government coordination (i.e., state funding, type of governance board) improved emerging adults' job matches and first job earnings (Mobley, 2002) and reduced national levels of youth unemployment (Schoon & Bynner, 2019). When employment protection legislation was stricter, emerging adults experienced more difficulties entering the labor market, particularly highly educated youth (De Lange et al., 2014).

School-to-work transition antecedents: time

This literature review identified three clusters of antecedents related to time: Time to degree, events and shocks, and parallel lifespan development.

Time to degree

. This literature review found that the school-to-work transition is embedded in the transition to adulthood and is often considered to be a developmental deadline (Arnett, 2000; Grosemans, Coertjens, et al., 2020). The timing of graduation (Aina & Casalone, 2020) and age at graduation (Salas-Velasco, 2007) emerged as relevant factors in the school-to-work transition. Specifically, delayed graduation reduced the chance of employment, which persisted until five years after graduation (Aina & Casalone, 2020). Prospective employers could view this as a negative sign of low productivity or effort (Salas-Velasco, 2007). Emerging adults who did not complete their degree in time (i.e., developmental deadline), but did find a job after a delayed graduation, were penalized in their earnings up to five years after graduation (Aina & Casalone, 2020). Furthermore, mature graduates were at a disadvantage in comparison to their younger counterparts, such that mature graduates had a higher probability of long unemployment spells between graduation and finding a job (Salas-Velasco, 2007). Hence, the more time passed after the developmental deadline of graduation, the poorer the transition outcomes typically became.

Events and shocks

. Disruptive events emerged as impactful antecedents of school-to-work transition success. For instance, Poulin and Heckhausen (2007) showed that stressful events, such as severe illness or the loss of a loved one, impaired people's motivation to pursue major life goals and substantially decreased their chances of receiving an apprenticeship offer. Similarly, research on career shocks showed that such disruptive events can impact initial employability and career success (Blokker et al., 2019) and trigger career transitions, e.g., becoming self-employed after graduation (Rummel et al., 2021). Although we position career shocks in the time dimension of sustainable careers, in line with De Vos et al. (2020) conceptual model, we should note that these shocks are at the intersection of person (individual reflection), context (external event), and time (events that can trigger career changes).

Parallel lifespan development

The third temporal category of antecedents is tied to broader life course structures, such as adult roles and adult identity acquisition in the broader transition to adulthood (Arnett, 2000). Several studies demonstrated that emerging adults could go through various transitions (e.g., transition to an independent residence, financial independence, marriage, and parenthood) and role changes (e.g., student, worker, spouse, parent, or double-status roles) concurrently with the school-to-work transition. This co-occurrence of events shaped school-to-work transition success (e.g., Buhl, 2007; Eliason et al., 2015; Grosemans, Coertjens, et al., 2020). For example, many emerging adults reported difficulties during the school-to-work transition process when progressing from a student role to a “real” adult life. This group often encountered unemployment, underemployment, low wages, dissatisfying jobs, and concerns about financial issues and debt (Aronson et al., 2015). Several studies have also shown that family formation and family responsibilities are strong motivators in attaining job stability (Mortimer et al., 2008) and shaping emerging adults’ opportunities in the school-to-work transition (Wyn et al., 2017).

School-to-work transition mechanisms and boundary conditions

In the previous sections, we outlined the main outcomes and antecedents studied in the school-to-work transition literature across disciplines. Given the increasingly dynamic and nonlinear nature of the school-to-work transition, we also searched for mechanisms (i.e., mediators) and boundary conditions (i.e., moderators) in these literature streams. As an overall observation, we were surprised by how few mediators and moderators were included in the rich literature on school-to-work transitions. As a result, the list of moderators and, especially, mediators is relatively brief (see Figure 2) compared to the antecedents and outcomes. Moreover, in line with our initial problematization of the inconsistent scope and theorizing in research on this transition, we found that several factors have been studied as both mediators and moderators, and also as antecedents. For example, the categories of competencies and behaviors showed up as antecedents, moderators, and mediators across the reviewed empirical articles. Similarly, attitudes were studied as antecedents and mediators. We reflect on this issue and problematize it in the discussion section. Here, we first present an overview of the findings.

School-to-work transition mechanisms

Our review showed that different types of mediators were studied in the literature, which all align with the person element of the sustainable career framework: Attitudes, competencies, and behaviors. First, school-to-work research investigated the mediating effects of various attitudes, such as work motivation (Baay, Van Aken, Van der Lippe, et al., 2014), job involvement (Park et al., 2019), career-related motivation (Pinquart et al., 2003), readiness (Santisi et al., 2018), and work engagement (Li et al., 2021). These researchers were most commonly interested in whether these attitudes would mediate the relationship between predictors such as academic performance, self-efficacy, and beliefs about work, and outcomes such as job search behavior, job satisfaction, and job performance. Furthermore, researchers have studied

the mediating effects of self-efficacy, including career decision-making self-efficacy (Kim et al., 2016; Ulas & Yildirim, 2019; Zhou et al., 2018), career self-efficacy (Renn et al., 2014), career learning self-efficacy (Ogbuanya & Chukwuedo, 2017), and general self-efficacy (Emirza et al., 2021). Here, researchers most commonly investigated the mediating role of self-efficacy in the relationships between predictors such as career support (e.g., mentorship), proactive personality, and cognitions about the transition (e.g., personal control), and outcomes such as career-related behaviors (e.g., planning), career choice, well-being, and job satisfaction. Generally, the studies found support for the idea that these attitudes (e.g., high motivation and self-efficacy) can facilitate the school-to-work transition process.

Second, only a few researchers looked at the mediating role of competencies, such as perceived control (Istrate et al., 2019), self-monitoring ability (Tolentino et al., 2019), and career adaptability (Pan et al., 2018). Here, researchers were interested in whether these competencies mediated the effects of predictors such as unemployment rate, a proactive personality, and career adaptability on outcomes such as job success and quality. Overall, developing such competencies indeed functioned as a helpful mechanism in school-to-work transition processes.

Third, researchers have investigated the mediating effects of behaviors such as career planning and career exploration (De Vos et al., 2009; Han & Rojewski, 2015; Koivisto et al., 2010), sending out job applications (Ruschhoff et al., 2018), and participating in training and education programs (e.g., Lowe et al., 1995; McBeath et al., 2018; Middeldorp et al., 2019; Pullmann, 2018; Rebick, 2000). Researchers often found that these behaviors positively mediated the effects of predictors, such as self-efficacy, social support (e.g., peer support), educational attainment, and gender on various transition outcomes (e.g., well-being, McBeath et al., 2018; job satisfaction, Han & Rojewski, 2015; employment, Rebick, 2000). In all, despite the relative lack of mediators in school-to-work transition research, there is general support that certain attitudes, competencies, and behaviors can facilitate a successful transition to work. That said, similar to our earlier discussion of the findings about antecedents and outcomes, certain concepts have been studied both as an antecedent and a mediator, or as a mediator and an outcome. We reflect further on these conceptual issues in our discussion section.

School-to-work transition boundary conditions

School-to-work transition research has covered a relatively broad range of boundary conditions, which mainly align with the context dimension of the sustainable career framework. Such boundary conditions include neighborhood circumstances (Wessling & Meng, 2021), career barriers (Kim et al., 2017), participation in mentorship programs (Kim & Passmore, 2016), apprenticeships or internships (Belle et al., 2022; Pan et al., 2018), and support factors such as perceived school support (Hwang et al., 2019) and parental support (Neuenschwander & Hofmann, 2022). To illustrate, perceived organizational support positively moderated the relationship between perceiving a calling and subsequent job involvement (Park et al., 2019). Besides these contextual moderators, some studies also looked at person-level moderators, such as Big five characteristics (Baay, van Aken, de Ridder, et al., 2014), self-esteem (Ismail et al., 2016; Siembab & Stawartz, 2019),

locus of control (Ng-Knight & Schoon, 2017), personal agency (Shane & Heckhausen, 2016), gender (Benz et al., 1997; Oliveira et al., 2017), and educational attainment (Kogan & Unt, 2005; Kowtha, 2011; Levels et al., 2014). For instance, Tolentino et al. (2019) found that academic effort positively moderated the effects of self-monitoring ability on job search self-efficacy. Furthermore, researchers studied competencies and behaviors as moderators, such as job search behavior (Takeuchi et al., 2021b), and career exploration (Zhou et al., 2018). For example, Okay-Somerville and Scholarios (2022) showed that a fitting job search strategy (i.e., exploratory vs. focused) positively moderated school-to-work transition success within ambiguous labor market conditions.

DISCUSSION AND RESEARCH AGENDA

This article presents a systematic literature review of 365 empirical articles published on school-to-work transitions between 1994 and 2022. The main purpose of our study was to organize the hitherto disconnected disciplinary knowledge bases on this topic, enabling us to propose a future research agenda based on our multidisciplinary overview model of school-to-work transition research. Using a sustainable career lens (De Vos et al., 2020; Van der Heijden et al., 2020), we organized the literature from the various disciplines (most notably psychology, education, sociology, and economics) studying this transition. This sustainable career lens allowed us to create multidisciplinary connections in the existing body of literature as it encompasses micro (i.e., person) and macro (i.e., context) perspectives, as well as a focus on different points in time during the school-to-work transition (i.e., preparation for the transition vs. initial labor market integration). Overall, our findings are promising because, given the large number of articles we reviewed and the many different factors we identified, we can safely conclude there is already an incredibly rich knowledge base on this transition. Hence, they will allow scholars to use our overview model as a multidisciplinary overview of existing research on the school-to-work transition. However, our review findings also raise concerns, especially about conceptual clarity and consistency, and theorizing around school-to-work transitions. We reflect on our findings and their research implications in light of (a) conceptualization, (b) theorizing, and (c) future research.

Conceptualizing school-to-work transitions

In line with the sustainable career perspective, our literature review showed that, overall, scholars have examined the school-to-work transition from the perspective of person-context interactions. Moreover, even though not always empirically studied, they typically viewed the transition as a process during which emerging adults move from education to work. That said, our review uncovered four different perspectives on school-to-work transitions (see Table 2): (a) a single-status change from student to worker, (b) human capital accumulation, (c) the start of a life course development process, and (d) a developmental transition into adulthood. Psychological research mainly focused on single-status changes and developmental transitions into adulthood, whereas education and economics emphasized a human capital approach, and sociology often used a life course development perspective. Furthermore, different disciplines tended

to focus on different aspects of the school-to-work transition process. Specifically, whereas psychology and education typically researched the preparation for and proximal outcomes of the transition (e.g., Gamboa et al., 2020; Jung & Go, 2021; Santisi et al., 2018), economics and sociology often focused on somewhat more distal outcomes related to labor market integration (e.g., Cooke, 2003; Corrales-Herrero & Rodríguez-Prado, 2012). Finally, our review results showed that the transition consists of two critical elements: A physical transition between an educational institute and a workplace, and a psychological transition between the role of students and that of a worker. Based on these observations, we proposed a definition of the school-to-work transition as *“a process during which individuals navigate a psychological and physical movement when leaving education and starting to integrate into the labor market.”*

Furthermore, the findings from this systematic literature review show that, organized from a sustainable career lens, antecedents at personal, contextual, and temporal levels are crucial. Indeed, many educational and psychological studies examined individual-level antecedents (e.g., stable individual characteristics, attitudes, and behaviors) that help emerging adults prepare for and navigate the school-to-work transition. However, career development does not occur in a vacuum, and economics and sociology in particular have demonstrated how contextual factors (e.g., social and labor market context) shape school-to-work transitions. School-to-work transition success, therefore, depends on the interactions between a person and their context over time.

However, our literature review also pointed to a significant problem in the existing literature that occurs both within and between disciplines: A clear lack of conceptual clarity and consistency. As Figure 2 shows, there is no clear pattern of how concepts were positioned in school-to-work transition research. Specifically, the figure shows that a considerable number of constructs has been studied as an antecedent, a moderator, and a mediator (or a combination thereof). For example, job search behaviors have been studied as a predictor of school-to-work transition success (e.g., Aguilar et al., 2018) but also as a mediating mechanism (e.g., Ruschoff et al., 2018) and a boundary condition (e.g., Takeuchi et al., 2021b). Similarly, individual characteristics such as self-esteem and self-efficacy were included as antecedents (Emirza et al., 2021), mediators (e.g., Renn et al., 2014), and moderators (e.g., Ismail et al., 2016). It is perfectly possible that certain factors could serve multiple roles in school-to-work transition processes. For instance, (preparatory) job search behaviors might be a critical predictor of school-to-work transition outcomes, yet, also serve as a mediating mechanism that mobilizes specific individual or contextual antecedents into outcomes. Or there may be specific variations of constructs that are more salient in one phase than another, such as general self-efficacy serving as an antecedent, whereas job search self-efficacy may become more important as a mediating mechanism. However, such ideas need to be more clearly and consistently conceptualized and explained in empirical studies. Our overview of empirical research on school-to-work transitions can serve as a starting point for this, as it explicitly points out some of these conceptual overlaps and inconsistencies. Therefore, we urge scholars to consider this issue when designing research in this area.

Theorizing school-to-work transitions

A common assumption in school-to-work transition literature is that emerging adults move from school to work in a normative linear sequence (i.e., a single movement from school to work). This review confirmed that this is the most frequently studied attribute of the school-to-work transition. In line with this finding, our review of theories used in school-to-work transition showed that they mainly adopt a somewhat static approach to the transition from school to work (see Table 3). For instance, human capital theory was the most prominent theory, and it was typically used to argue that the accumulation of certain credentials, knowledge, or skills would subsequently facilitate a successful transition to work. And although certain other theories, like social cognitive career theory or lifespan theories, theorize about processes, they were typically applied in a static way to explain how specific predictors would impact outcomes. Hence, although the general narrative about school-to-work transitions is changing from a one-off transition toward a more dynamic nonlinear process (Brzinsky-Fay, 2014; Brzinsky-Fay & Solga, 2016; De Vos et al., 2019), theories used in this area do not yet clearly reflect this narrative.

Therefore, we argued that a sustainable career perspective on school-to-work transitions is valuable as it is a dynamic and systemic perspective (De Vos et al., 2020) that positions this transition as the first major career transition in someone's life. Moreover, it offers a multidisciplinary overview of micro and macro factors before and after the transition, hence capturing the entire transition process. Furthermore, it implies that the school-to-work transition is the foundation of long-term career sustainability (Akkermans, Blokker, et al., 2021; De Vos et al., 2019). Therefore, our overview model serves as a starting point for further investigation of the different routes and various attempts emerging adults might use to establish themselves in the labor market. This career-oriented approach also sets the stage for research on how experiences earlier in a person's career might shape subsequent career transitions and long-term career sustainability (e.g., Sullivan & Al Ariss, 2021; Wang & Wanberg, 2017; Zacher & Froidevaux, 2021).

Although the sustainable career framework serves as a valuable perspective to organize school-to-work transition research and position the transition as a starting point for long-term career outcomes, it does not fully elucidate the processes underlying *how* emerging adults may build early career sustainability. In other words: More specific theory-building is necessary to understand the mechanisms leading to school-to-work transition success. Based on the review findings, we argue that a *self-regulation lens* may be valuable to theorize about how emerging adults can successfully navigate the school-to-work transition. Self-regulation theories propose that individuals go through a goal setting, goal pursuit, and goal monitoring and evaluation phase in which they self-regulate their thoughts, feelings, and behaviors to attain their personal goals (e.g., Vohs & Baumeister, 2016; Zimmerman, 2000). These ideas can be applied to the school-to-work transition process, where goal setting and formulation would mainly take place when preparing for the transition, goal pursuit during the transition, and goal evaluation and monitoring during initial labor market integration. Moreover, following Carver and Scheier (2012) and Zimmerman (2000, 2008), researchers could create more theoretical and conceptual precision by dividing antecedents,

mediators, moderators, and outcomes into specific categories of self-regulation variables. Specifically, self-regulation entails cognitive (e.g., cognitive skills, career attitudes), motivational (e.g., job search intentions, career aspirations), affective (e.g., stress, career satisfaction), and behavioral (e.g., job search behavior, career self-management) factors that could play a role in each transition phase. Furthermore, self-regulation theories also acknowledge the role of stable individual characteristics and contextual factors (Carver & Scheier, 2012). Overall, self-regulation may offer a valuable perspective for theory-building on modern school-to-work transitions that capture the more dynamic process it is becoming. It also fits the sustainable career perspective we used in this article to organize the existing literature, as self-regulation processes can serve to establish person-career fit, a key element of career sustainability (De Vos et al., 2020).

Future research on school-to-work transitions

Based on the findings of this review, we formulate five critical areas for further research on the school-to-work transition. These are: (a) the interplay between person, context, and time, (b) dynamic transition trajectories, (c) parallel lifespan development, (d) nonstandard groups and nonstandard career trajectories, and (e) career shocks.

First, we call for more interdisciplinary connections in school-to-work transition research. As our review findings show, the interplay between the *person* (i.e., micro-level) and their *context* (i.e., macro-level) over *time* (i.e., preparation until initial labor market integration) is crucial when it comes to understanding school-to-work transitions. However, empirical studies connecting these levels are lacking (Akkermans, Blokker, et al., 2021; DeLuca et al., 2015; Schoon & Lyons-Amos, 2017). Our overview model of empirical research on this transition in the past 28 years provides a common language and seeks to establish better connections and more collaboration between disciplines. Future research should cross disciplinary boundaries by, e.g., combining antecedents from different domains, such as career competencies (i.e., person-level antecedent; psychology) and demand-supply effects (i.e., context-level antecedent; economic). Furthermore, future research should supplement frequently studied objective productivity indicators with subjective indicators of health and happiness. This argument resonates with developments in career success research (cf. Spurk et al., 2019), where subjective indicators of success (e.g., career satisfaction and perceived impact) now supplement the traditional emphasis on objective success indicators (e.g., salary and promotions; Arthur et al., 2005; Smale, 2019). This is relevant when studying contemporary school-to-work transitions, as we need to better differentiate between antecedents that are more able to predict objective vs. subjective career outcomes (e.g., Ng et al., 2005). Hence, a promising avenue for future research would be to combine objective transition success (e.g., employment status, productivity) with subjective transition success (e.g., transition satisfaction, happiness). Taken together, the sustainable career perspective, in which the school-to-work transition is viewed as the first major career transition, provides an opportunity for researchers to establish a better connection between previously isolated knowledge fields.

Second, and building on our earlier arguments related to theorizing about modern school-to-work transitions, we urge

scholars to move beyond the normative and linear transition from school to work, to instead start capturing the complex and dynamic nature of the process. In addition to our earlier suggestion of adopting a self-regulation perspective, we also call for a better understanding of temporal processes involved in school-to-work transitions. Inherent with the notion of sustainable career development is the potential series of choices and learning cycles (De Vos et al., 2019; Hall et al., 2018). More specifically, the impact of antecedents is conditional on time. Some outcomes may serve as inputs for new transition cycles, and short-term outcomes can inform long-term outcomes. For instance, when evaluating their goal attainment during initial labor market integration, emerging adults may set new goals to develop additional competencies or safeguard their well-being. Similarly, initial transition success in terms of finding a high-quality job quickly may allow emerging adults to enhance their employability even further in the long run. Future research could build on our review findings by, for instance, following emerging adults during their transition from school to work and distinguishing successful pathways for labor market entry and long-term career sustainability (Sullivan & Al Ariss, 2021; Wang & Wanberg, 2017; Zacher, 2015). It would be particularly interesting for this line of research to also examine how non-sustainability early in a person's career might be overcome later in their career, and how sustainability early on may become non-sustainable in the person's mid or late career (Akkermans, Blokker, et al., 2021; De Vos & Van der Heijden, 2015).

Third, sustainable career development occurs across different contexts, including non-work roles and other life domains (De Vos et al., 2020). However, little is known with regard to how parallel lifespan development shapes school-to-work transition trajectories, nor about the consequences for mid to late-career development (Eliason et al., 2015). Therefore, in line with the whole-life perspective of sustainable careers (Hirschi et al., 2020), we argue that future research needs to consider the school-to-work transition from a broader lifespan perspective. One way to do this would be to include other transitions (e.g., transition to an independent residence, finding a partner, timing of parenthood) in order to examine how these parallel transitions shape school-to-work transition pathways and outcomes. An example of this would be researching how the timing of education, job, and career attainment, in combination with the timing of marriage, living with a partner or spouse, parenthood, home ownership, and financial independence, can shape school-to-work transition success and sustainable career development over a person's life course. Another way to do this would be to focus on emerging adults' subjective experiences in their broader life. For instance, future research could investigate how role identity (e.g., student, worker, spouse, parent, or double-status roles), subjective assessments of timing in life (e.g., feeling like an adult, timing of other life pathways), and developmental deadlines (e.g., age and aging) affect the school-to-work transition (Eliason et al., 2015; Ng & Feldman, 2007; Salas-Velasco, 2007). Together, this would strongly embed the school-to-work transition in the transition to adulthood, setting the stage for future research on the consequences of school-to-work transition pathways and early career success in mid and later life.

Fourth, more research is needed on nonstandard groups and nonstandard career trajectories. In this review, we have restricted our scope to the school-to-work transition of the general population and we have excluded disadvantaged, at-risk, and "Not in Education, Employment, or Training" (i.e., NEET) youth. These are, however, essential groups to study, as these individuals might be especially vulnerable during the school-to-work transition. We, therefore, urge future researchers to explore whether our review findings also apply to these groups and whether they experience similar or different school-to-work transition processes. Furthermore, this review made it clear that the transition from school to employment at an organization is most frequently studied. However, in the contemporary world of work, nonstandard work arrangements have become more common (e.g., Spreitzer et al., 2017). For example, Rummel et al. (2021) illustrated how recently graduated entrepreneurs' transition into work featured unique characteristics, such as chance meetings with influential entrepreneurs or negative experiences in a corporate career. Therefore, future research should explore transitions into various types of initial employment, such as the transition to entrepreneurship (e.g., self-employment) and the transition to flexible work and alternative work arrangements (e.g., flexibility in the employment relationship, flexibility in the scheduling of work, and flexibility in where work is accomplished, Spreitzer et al., 2017). The study of whether or not emerging adults need to acquire similar or different skills and resources to thrive in these types of transitions, in comparison to the transition to employment at an organization, would be of particular interest (e.g., Jacobs et al., 2019).

Finally, although disruptive events play an increasingly prominent role in how emerging adults navigate their transition from education to work (De Vos et al., 2019), scholarly discussions to date have mostly overlooked the role of such events in school-to-work transitions (Akkermans, Blokker, et al., 2021). A career shock is a disruptive event that triggers a deliberate thought process concerning one's career (Akkermans et al., 2018; Akkermans, Rodrigues, et al., 2021). Many, if not all, emerging adults encounter career shocks during their school-to-work transitions, and these likely impact school-to-work transition success (Blokker et al., 2019; Rummel et al., 2021). Hence, future research should explore the role of career shocks in school-to-work transition processes. For example, researchers could examine the types of career shocks that occur, along with their impact (i.e., positive or negative) in the context of the school-to-work transition. For instance, if emerging adults find a job more quickly than expected and experience this as a positive career shock (Blokker et al., 2019), this likely results in a different sense-making process and, ultimately, transition outcomes. In contrast, those who are out of education, unemployed, and looking for a job will likely struggle more if they experience a negative career shock, finding their first job more slowly than expected. Thus, the timing of career shocks in the school-to-work transition would be an interesting avenue for future research.

SUPPLEMENTARY MATERIAL

Supplementary material is available online at *Work, Aging, and Retirement*.

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AUTHOR CONTRIBUTIONS

Rowena Blokker Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Visualization, Writing – original draft, Writing – review & editing Jos Akkermans Conceptualization, Formal analysis, Funding acquisition, Supervision, Validation, Visualization, Writing – review & editing Julian Marciniak Conceptualization, Formal analysis, Visualization, Writing – review & editing Paul Jansen Funding acquisition, Supervision. Svetlana Khapova Funding acquisition, Supervision

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