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Adaptations in Youths' Willingness to Be Spatially Mobile: Influence of Status Aspirations and Regional Disparities

Linda Hoffmann [©]

Federal Institute for Vocational Education and Training (BIBB), Germany

Correspondence: Linda Hoffmann (linda.hoffmann@bibb.de)

Submitted: 16 January 2025 Accepted: 9 May 2025 Published: 27 May 2025

Issue: This article is part of the issue "The Role of Contexts in the Educational and Employment Transitions and Pathways of Young People" edited by Alexandra Wicht (Federal Institute for Vocational Education and Training / University of Siegen), Oliver Winkler (Martin Luther University Halle-Wittenberg), Mona Granato (Federal Institute for Vocational Education and Training), and Alexandra Nonnenmacher (Worms University of Applied Sciences), fully open access at https://doi.org/10.17645/si.i418

Abstract

Spatial mobility is key to facilitating successful transitions into vocational education and training (VET), especially for youths from disadvantaged regions. In line with the agency-structure framework, the decision to become mobile is conceptualized as an adaptive strategy that young people employ to achieve their goals when faced with persistent challenges or regional barriers. This study investigates how youths applying for VET adapt their willingness to be spatially mobile over time. It examines the influence of occupational status aspirations and the regional opportunity structure on this decision-making process. Using data from the National Educational Panel Study (NEPS), multilevel growth curve models are estimated to analyze adaptations in the mobility radius of VET applicants over up to three years (N = 1,017). To assess the regional opportunity structure, small-scale administrative geospatial data on the availability of youths' aspired occupations are used as an individualized indicator of regional mismatch. The results show that VET applicants' willingness to be mobile increases over time. High-status aspirations are consistently associated with a greater willingness to be mobile, largely independent of search duration or regional mismatch. Conversely, VET applicants with lower status aspirations exhibit notable adaptations, adjusting their mobility radius, particularly in response to increasing search duration or regional mismatch. These findings highlight the complex interplay between individual aspirations and the regional opportunity structure in shaping adaptations in the willingness to become mobile of unsuccessful VET applicants.

Keywords

agency and structure; regional disparities; school-to-VET transitions; spatial mobility; status aspirations



1. Introduction

Vocational education and training (VET) is a central pathway in the transition from school to work in Germany, where about half of young people enter VET programs after lower secondary education (Ludwig-Mayerhofer et al., 2011). Access to VET is shaped by a highly stratified system, with early school tracking at the lower secondary level determining access to different vocational and academic pathways at the upper secondary level. The VET system in Germany includes school-based and dual programs that combine company-based training with vocational schooling. This structure has significant implications for social inclusion, as it can reinforce educational inequalities and hinder youths' access to stable career prospects. Amid the benefits of the highly institutionalized system, every year tens of thousands of youths face difficulties in achieving successful school-to-VET transitions (M. Granato et al., 2015). Around 30% of VET applicants do not enroll in fully qualifying VET but enter the transition system, which encompasses preparatory programs to support access to VET but does not provide formal vocational qualifications (Baethge & Wolter, 2015; Protsch & Solga, 2016). Low-achieving youth in particular often stagnate within the transition system, with only one-third transitioning to regular VET or employment (Beicht & Eberhard, 2013; Solga et al., 2014). As a result, the risk of youths ultimately ending up not in education, employment, or training (NEET) remains considerable, which can have adverse consequences on their life trajectory (Achatz et al., 2022; Brzinsky-Fay, 2022; Schoon & Lyons-Amos, 2017).

Shedding light on the drivers and barriers of successful school-to-VET transition, research highlights the relevance of individual or agentic factors, such as application efforts, goal-related self-efficacy, or occupational status aspirations (Holtmann et al., 2017; Schoon & Lyons-Amos, 2017; Wicht et al., 2024), and institutional or socio-structural factors, such as educational certificates and parental socio-economic status (SES), which often reinforce inequalities (Dietrich et al., 2019; Schels & Wöhrer, 2022; Schoon, 2021). Further, recent studies underscore the importance of regional opportunity structures, which impose additional barriers for youths from disadvantaged regions. This is especially evident in countries like Germany, with a highly market-dependent dual VET system and significant regional disparities (Achatz & Schels, 2023; Hickmann et al., 2025; Hillmert et al., 2017; Wicht & Nonnenmacher, 2017).

Spatial mobility is essential to facilitate successful school-to-VET transitions and mitigate structural inequalities (N. Granato et al., 2015; Herzer & Ulrich, 2020; Jost et al., 2019). Recent studies reveal that a substantial number of VET students become spatially mobile (Hoffmann & Wicht, 2023; Kindt et al., 2024; Schmidt, 2024) and highlight its association with positive individual-level outcomes, such as status returns, job-match quality, and life satisfaction (Ganesch et al., 2019; Stawarz et al., 2022; Wicht et al., 2024). Corresponding research is often limited to cross-sectional data and focuses primarily on the actual mobility of VET students who commute or relocate to attain VET positions outside their home region (Herzer & Ulrich, 2020; Schmidt, 2024; Wicht et al., 2024). Yet, this does not capture the preceding decision-making process and the development of the willingness to become mobile during the transition to VET. Based on time-to-event data, a recent study found that in addition to higher occupational status aspirations and limited regional opportunities, longer search durations significantly increase spatial mobility among youths entering VET (Hoffmann & Wicht, 2023). This implies that VET applicants' willingness to become mobile is an adaptive decision-making process shaped by individual and regional factors over time.



However, the progression and extent of adaptations in the willingness to be mobile over time and the interplay between individual and regional factors in predicting these adaptations remain uncertain. Therefore, this study aims to address this research gap by investigating the following research questions:

1. Do VET applicants adapt their willingness to be spatially mobile while searching for a training position?

2. How do individual status aspirations and the regional opportunity structure impact these adaptations over time?

Representative longitudinal data from the German National Educational Panel Study (NEPS; Blossfeld & Roßbach, 2019; NEPS Network, 2025) are used to address these research questions. This panel data offers detailed information on the application behavior of youths seeking VET, including their willingness to be mobile and their occupational aspirations. In addition to considering VET applicants' occupational status aspirations, small-scale NUTS-3 administrative geospatial regional data on the regional availability of their aspired occupations (German Federal Employment Agency, 2022) are merged to establish the regional mismatch as an individualized measure of youths' perceived regional opportunity structure.

The article makes several contributions. First, it focuses on the willingness to be spatially mobile among young people who have unsuccessfully applied for VET, a vulnerable group (M. Granato et al., 2015) whose decision-making behavior has largely been overlooked in previous research. Second, employing a longitudinal approach to analyze changes over time regarding the willingness to be mobile, captured by the distance to the furthest training position they applied for, grants nuanced insights into adaptations in VET applicants' mobility decisions during their search. Third, extending the agency-structure framework (Schoon & Heckhausen, 2019), this study highlights the joint role of individual status aspirations in interaction with the regional opportunity structure in predicting adaptations in VET applicants' willingness to be come mobile over time. This underscores the vital interplay of agency and structure for youth transitions. It reveals adaptations in the willingness to be spatially mobile as a relevant strategy for youths to achieve their goals and successfully transition into VET.

2. The Importance of Agency, Structure, and Spatial Mobility for VET Applicants

The importance of agency in shaping individuals' life courses has received increasing attention in research (Bandura, 2006; Hitlin & Elder, 2007; Shanahan, 2000). Agency is understood as the ability of individuals to set and achieve their goals, with scholars generally distinguishing between agentic goals and agentic actions (Goller & Paloniemi, 2022; Schoon & Heckhausen, 2019). The agency-structure framework (Eccles, 2008; Holtmann et al., 2017; Schoon & Heckhausen, 2019) describes successful school-to-VET transitions as a complex process that depends on the interplay between youths' individual agency and structural opportunities. This process involves adaptive actions that youths engage in to achieve their goals, especially when encountering difficulties. This study extends this framework to adaptations in the willingness to become spatially mobile as a possible adaptive strategy among VET applicants when they fail to make a successful transition over time or are faced with limited regional opportunities.



In the following sections, I will focus on VET applicants' occupational status aspirations as agentic goals (*goal setting*) and spatial mobility as agentic actions to achieve these goals (*goal engagement*). Further, a distinction is made between *action planning* and *action regulation* as parts of goal engagement to highlight the time dependence of the adaptation process. Lastly, the relevance of the regional opportunity structure is emphasized, and presumed influences on VET applicants' willingness to be mobile over time and in interaction with their occupational status aspirations are addressed.

2.1. Goal Setting: Status Aspirations as Agentic Goals

Youths establish their agentic goals at critical stages like school-to-VET transitions. In this context, *goal setting* is closely tied to occupational aspirations (Heckhausen & Tomasik, 2002; Schels & Abraham, 2023; Schoon & Parsons, 2002). Social status emerges as a key dimension of these aspirations. It shapes the perceived value of the aspired occupation in terms of prestige and monetary returns but also reflects the social identity of youths formed during socialization (Gottfredson, 2002; Holland, 1997; Sewell et al., 1970). Accordingly, youths' occupational status aspirations are a crucial driver of successful transitions (Ashby & Schoon, 2010; Haller & Portes, 2019; Hitlin & Johnson, 2015) and spatial mobility (Hoffmann & Wicht, 2023; Waibel, 2019; Wicht et al., 2024). While occupational status aspirations and their realization are related to socio-structural factors such as SES background and educational certificates (Becker & Blossfeld, 2022; Klein, 2016; Valls et al., 2022), studies have shown that their positive impact on successful transitions persists even when these factors are controlled for (Holtmann et al., 2017; Reynolds et al., 2007; Schoon & Polek, 2011).

2.2. Goal Engagement: Spatial Mobility as Agentic Action

To achieve their agentic goals, youths engage in agentic actions. This aspect of agency relates to *goal engagement*, which involves action planning to pursue the goal, e.g., when initially applying VET, and action regulation when unsuccessful over time or faced with obstacles (Haase et al., 2008; Lechner et al., 2016; Schoon & Heckhausen, 2019). Goal engagement is not only dependent on youths' agentic goals but is an adaptive decision-making process in which youths (re-)assess the probability of success by evaluating their options, considering available opportunities and barriers (Eccles & Wigfield, 2002; Heckhausen & Wrosch, 2016; Mühlböck et al., 2022; Tomasik et al., 2009). Spatial mobility can increase both the probability of success and available opportunities, making it a potentially viable agentic action for youths striving to transition to VET successfully. Whether VET applicants increase their willingness to become mobile as part of goal engagement remains an open question.

Research on job-related spatial mobility in general identified search time as a key factor in increasing job seekers' willingness to be mobile, but it is mainly focused on individuals in the workforce or labor force (Détang-Dessendre & Gaigné, 2009; Magrini & Lemistre, 2013; Windzio, 2008). Despite a lack of research on adaptations in the willingness to become mobile in the context of school-to-VET transitions, longitudinal studies have shown that youths seeking VET often engage in goal-engagement and adapt their search strategies over time, e.g., making compromises regarding factors such as occupational interests, social status, or gender type (Beckmann et al., 2023; Fischer-Browne et al., 2024; Schels & Abraham, 2023; Tomasik et al., 2009). Based on these findings and aligned with the theoretical notion of goal engagement, it can be assumed that VET applicants similarly adapt their willingness to be spatially mobile as an agentic strategy if faced with difficulties achieving a successful transition over time. Therefore, VET applicants are



hypothesized to increase their willingness to become mobile while searching for a training position (Hypothesis 1). Yet, different adaptive goal engagement strategies can be assumed, contingent on VET applicants' status aspirations.

A crucial part of "action planning" is foresight—the ability to plan the pursuit and attainment of agentic goals (Schoon & Heckhausen, 2019). Research has shown that youths with higher status aspirations are more likely to pursue and attain their goals (Hitlin & Johnson, 2015; Holtmann et al., 2017; Schoon & Parsons, 2002) and are also more inclined to be spatially mobile for VET (Hoffmann & Wicht, 2023; Wicht et al., 2024). Theoretically, this can be explained by the higher expected value of successfully attaining their status aspirations, which acts as a direct motivational driver for these youths to engage in action planning to achieve their goals (Eccles & Wigfield, 2002; Heckhausen, 2018; Shane et al., 2012). Therefore, it is assumed that VET applicants with higher status aspirations have a higher initial willingness to be mobile at the beginning of their search for a suitable VET position than VET applicants with lower status aspirations (Hypothesis 2a).

However, when goal attainment is not directly successful, *action regulation* becomes necessary, entailing commitment to or adaptations of agentic actions to cope with difficulties over time (Eccles & Wigfield, 2002; Schoon & Heckhausen, 2019; Tomasik et al., 2009). As VET applicants with higher status aspirations are likely to start with a higher initial willingness to be mobile, they should either further increase or maintain their high willingness to be mobile over time. In contrast, VET applicants with lower status aspirations might initially lack strong motivation to pursue spatial mobility due to the lower anticipated value of their aspired occupation. Yet, when faced with challenges in securing a VET position over time, they should be more likely to (re)assess their chances and engage in adaptive action regulation by adjusting their willingness to become mobile to increase their probabilities of a successful transition. Hence, it is assumed that VET applicants with lower status aspirations exhibit a higher increase in their willingness to be mobile over time than VET applicants with higher status aspirations (Hypothesis 2b).

2.3. The Role of the Regional Opportunity Structure

While individual agency is an essential driver of successful transitions, the agency-structure framework equally highlights the significant role of structural opportunities and barriers for youths to achieve their goals and make successful transitions (Schoon, 2021; Schoon & Lyons-Amos, 2017). Most previous research has emphasized the importance of the social structure, with studies underscoring the relevance of youths' SES background or educational certificates in interplay with agentic goals (Descary et al., 2023; Eberhard et al., 2022; Gellermann & Fuchs, 2022; Kay et al., 2017; Parker et al., 2012). However, mixed results indicate either selection or cumulative effects, where youths with a higher SES background or educational certificates of higher status aspirations and better abilities and resources to achieve them, thereby reinforcing social inequality (Eccles, 2008; Holtmann et al., 2017; Jansen et al., 2024). Other studies suggest compensatory effects, whereby youths with a lower SES background or educational certificates but high aspirations can utilize agency to compensate for limited socio-structural opportunities and achieve their goals (Duckworth & Schoon, 2012; Mortimer et al., 2014; Schoon & Polek, 2011).



The role of the regional opportunity structure has received less attention in this area of research. However, especially in countries such as Germany, VET opportunities vary considerably across different regions, limiting the probability of successful transitions for VET applicants in disadvantaged regions (Eckelt & Schauer, 2019; Kleinert, 2015; Weßling et al., 2015). Accordingly, research has revealed that youths from unfavorable regions are more likely to become spatially mobile for their VET. Yet, most studies are limited to broad regional measures such as unemployment rates, population density, or VET vacancies. (Beicht & Eberhard, 2009; Bogai et al., 2008; Herzer & Ulrich, 2020). Bearing in mind the relevance of regional disparities for successful transitions to VET and spatial mobility, examining the role of the regional opportunity structure in influencing adaptations in the willingness to be mobile among VET applicants can provide more comprehensive and relevant new insights.

In line with the agency-structure framework (Schoon & Lyons-Amos, 2016), the regional structure defines given opportunities and barriers for youths seeking VET. Youths' evaluations of their perceived opportunities are crucial for their goal engagement strategies and should be considered in accordance with their occupational aspirations. Previous research has identified the mismatch between youths' aspired occupation and its availability in their home region as a relevant measure for youths' perceived opportunity structure and a key driver for spatial mobility (Edwards et al., 2002; Flohr et al., 2020; Hoffmann & Wicht, 2023; Ulrich et al., 2006). This individualized measure accounts for the interplay between individual occupational aspirations and structural opportunities and, hence, should be decisive in shaping VET applicants' evaluations of their regional opportunities and possible agentic actions to increase the probability of a successful transition. Whether youths anticipate the regional opportunity structure from the beginning of their search (action planning) or adapt to it over time (action regulation) remains an open question. Therefore, it is examined if VET applicants from regions with a higher mismatch will either have a higher initial willingness to be mobile (Hypothesis 3a) and/or exhibit a higher increase over time (Hypothesis 3b).

Moreover, VET applicants should exhibit varying goal engagement strategies depending on their status aspirations. Hence, it is crucial to investigate whether the regional opportunity structure impacts these patterns. Since a higher regional mismatch imposes additional barriers that necessitate agentic actions to circumvent them, it is assumed to reinforce the presumed differential goal engagement strategies of VET applicants with higher and lower status aspirations. VET applicants with higher status aspirations are expected to engage more readily in action planning at the beginning of their search. Therefore, they should exhibit an even greater initial willingness to be mobile in regions with a higher mismatch than regions with a lower mismatch (Hypothesis 4a). Conversely, VET applicants with lower status aspirations will likely engage in action regulation over time. Therefore, in regions with a higher mismatch, they should exhibit a higher increase in their willingness to be mobile than in regions with a lower mismatch (Hypothesis 4b).

3. Present Study

This study sheds light on adaptations in the willingness to be spatially mobile among VET applicants over time, depending on their individual status aspirations and the regional opportunity structure. Data from the German NEPS (Blossfeld & Roßbach, 2019; NEPS Network, 2025) are used, providing comprehensive information on the application behavior of youths seeking VET, including their status aspirations and willingness to be mobile. Additionally, based on merged administrative small-scale geospatial data on the regional availability of youths' aspired occupations (German Federal Employment Agency, 2022), the regional mismatch is measured



as an individualized indicator to reflect youths' perceived regional opportunity structure in alignment with their individual aspirations. Further, this study extends previous research on the importance and interplay of individuals' agentic goals and actions with structural opportunities during school-to-VET transitions, providing in-depth insight into adaptations in search behavior over time.

Building on the agency-structure framework (Schoon & Heckhausen, 2019; Schoon & Lyons-Amos, 2016), this study provides a theoretical model focusing on the interplay of individual and structural factors in shaping VET applicants' willingness to be mobile over time, as illustrated in Figure 1. At the micro level, individual agency is differentiated into two components: (a) VET applicants' status aspirations, which reflect their agentic goals, and (b) their mobility radius, which represents their agentic actions employed as goal engagement strategies to achieve their goals. Given the focus on temporal changes, a distinction is made between the initial mobility radius (action planning) and subsequent adaptations to it (action regulation) over the search time. At the structural level, the regional mismatch's direct influences and possible interactions with youths' status aspirations over time are examined.



Figure 1. Graphical representation of the research design.

The following *search time hypothesis* is formulated to address the first research question: VET applicants increase their mobility radius over their search time (H1).

Furthermore, the role of individual status aspirations and the regional opportunity structure over time is examined. Therefore, two *status aspiration hypotheses* are proposed: VET applicants with higher status aspirations have a higher initial mobility radius than VET applicants with lower status aspirations (H2a). VET applicants with lower status aspirations exhibit a higher increase in their mobility radius over time than VET applicants with higher status aspirations (H2b).

Regarding the regional opportunity structure, two *regional mismatch hypotheses* are formulated: VET applicants in regions with a higher mismatch have a higher initial mobility radius (H3a) and/or exhibit a higher increase over time than VET applicants in regions with a lower mismatch (H3b).



Two *reinforcement hypotheses* are presented to examine the interplay between individual status aspirations and the regional mismatch: VET applicants with higher status aspirations have a higher initial mobility radius in regions with a higher mismatch than regions with a lower mismatch (H4a). VET applicants with lower status aspirations exhibit a higher increase in their mobility radius over time in regions with a higher mismatch than regions with a lower mismatch (H4b).

4. Methods

4.1. Data

This study uses longitudinal data from the German NEPS, Starting Cohort Grade 9 "School and Vocational Training: Educational Pathways of Students in Grade 9 and Higher" (Blossfeld & Roßbach, 2019; NEPS Network, 2025). This representative panel started in 2010, with an initial sample of 14,540 ninth graders at regular German secondary schools. Surveys of students were conducted (bi-)annually using paper-and-pencil interviewing in the classroom. Respondents who left school were subsequently interviewed twice a year and later annually using computer-assisted telephone interviewing. After initially leaving school, all respondents were surveyed using a comprehensive transition module that included detailed retrospective questions about their application behavior. In the subsequent years, a condensed version of the transition module was administered exclusively to respondents who had not completed or were not currently engaged in (further) education or VET programs or had recently started such a program. Additional administrative regional data from the German Federal Employment Agency (2022) on the regional share of employees in respondents' aspired occupational segment at the district level (NUTS-3) are merged to measure the degree of regional mismatch.

4.2. Sample

As this study focuses on adaptations of the willingness to become mobile among VET applicants' during the search for a VET position, the sample is restricted to respondents who applied for a VET position in the first year after leaving school (N = 4,990) and at least twice within three years (N = 1,380). Further restrictions were made to ensure that the sample does not include cases of drop-outs or reorientations, as these may involve different adaptation processes. Respondents who entered VET or further education in the first year but (re-)applied for VET in the following years were excluded (N = 1,156). Similarly, respondents who started VET or further education in the second year but (re-)applied in the third year were only observed for the first two years. Respondents who indicated they did not apply for a VET position in the second year were excluded (N = 1,079). Lastly, the observation period was limited to the first two years for respondents who indicated they did not apply for a VET position in the second year.

Missing values in the dependent variable were retained for multiple imputations if respondents reported that they applied for VET in the observation year. They were also retained if information on the application behavior in the observation year was unavailable but respondents had applied both in the previous and the following years. The final analysis sample (N = 1,079) includes school-leaving cohorts from 2011 to 2016, consisting of 692 respondents with a two-year and 387 respondents with a three-year observation period.



4.3. Measures

Table 1 below provides an overview of the descriptive statistics of all relevant variables in the analysis sample. Correlations between the variables can be found in Table A1 in the Supplementary File.

Variables	Mean or %	SD	Min	Max	N(valid)
Dependent variable					
Mobility radius					
at 1st year	2.54	1.28	1	5	950
at 2nd year	2.75	1.29	1	5	862
at 3rd year	2.91	1.26	1	5	365
Independent variables					
Search time					
1st year	100.00		0	1	1,079
2nd year	100.00		0	1	1,079
3rd year	35.87		0	1	1,079
Status aspirations					
at 1st year	40.22	12.92	11.56	88.31	1,070
at 2nd year	40.22	12.92	11.56	88.31	1,070
at 3rd year	39.99	13.09	11.56	88.31	383
Regional mismatch					
at 1st year	-9.39	4.32	-38.12	-0.44	1,070
at 2nd year	-9.40	4.31	-38.12	-0.44	1,070
at 3rd year	-9.22	4.27	-25.24	-0.44	383
Regional VET mismatch					
at 1st year	-10.34	5.80	-37.77	0.00	1,070
at 2nd year	-10.39	5.76	-37.77	0.00	1,069
at 3rd year	-10.30	5.73	-25.80	0.00	383
Control variables					
Gender					
male	51.48				555
female	48.52				523
Migration background					
native	70.18				746
migration background	29.82				317
Age	17.68	1.11	15.17	22.75	1,078
SES background	48.60	19.16	14.21	88.70	1,039
Educational certificate					
low	38.00				410
medium	45.69				493
high	16.31				176
Regional competition	-102.66	4.96	-13.65	-86.68	1,065

Table 1. Descriptive statistics.

Notes: N(valid) refers to the number of individuals with valid information; descriptive statistics of time-varying variables are calculated for each time point, time-constant variables based on the first time point; percentages for the search time categories indicate how many individuals of the sample are observed at each time point.



4.3.1. Dependent Variable

To capture VET applicants' willingness to be spatially mobile, respondents were asked to provide the distance in time to the furthest applied-to VET position, with the categories: *up to 20 minutes* (1), *21 to 40 minutes* (2), *40 minutes to 1 hour* (3), *more than 1 hour* (4), and *I would have had to move* (5). As the mobility radius was surveyed each year, information is available on the initial mobility radius in the first year they applied for a VET position and adaptations in the mobility radius in the second and third years of their search. The average mobility radius by search time indicates a slight increase over time (see Table 1). Differences in the mean level of the mobility radius over time are statistically significant (p < 0.001) with a Cohen's d of -0.16 standard deviations between the first and second years and -0.29 between the first and third years, indicating small to medium effect sizes (Gignac & Szodorai, 2016). Differences between the second and third years are slightly smaller (Cohen's d = -0.13) and statistically significant at a lower confidence level (p < 0.05). Figure A1 in the Supplementary File depicts the detailed distribution of the mobility radius by search time.

4.3.2. Independent Variables

As VET applicants were asked about their application behavior each year, a measurement of the *search time* in years (first year, second year, third year) was used, with the first year as the reference category. All VET applicants were observed in the first and second years; 35.87% of the VET applicants in the sample remain seeking VET in the third year.

To assess the *occupational aspirations* of VET applicants, the first occupation they applied for was used, classified by NEPS via the International Standard Classification of Occupations (International Labor Office, 2012). The status of the aspired occupation was measured based on the International Socio-Economic Index from 2008 (ISEI; Ganzeboom, 2010), which NEPS assigned to the aspired occupations. The ISEI provides a well-established continuous measure of occupational stratification, ranging from 10 to 90, with higher scores indicating higher occupational status aspirations. Figure A2 in the Supplementary File depicts the distribution of VET applicants' occupational status aspirations in the sample. High-status aspirations (>60) are mainly related to occupations in IT or healthcare, while low-status aspirations (<30) refer to occupations in e.g., agriculture, construction, or retail.

VET applicants' perceived regional opportunity structure is measured through an indicator of the *regional mismatch* between their aspired occupations and the availability of these occupations in their home region, as Flohr et al. (2022) proposed. In the first step, information on the first occupation they applied for is used and categorized by the occupational segment this occupation belongs to, based on the occupational segment categorization from the Classification of Occupations in Germany (KldB 2010; Paulus & Matthes, 2013). These occupational segments consist of 14 distinct groups of occupations categorized by similarity in task profiles and required skills at the two-digit level of the KldB 2010 (Matthes et al., 2015). Figure A3 in the Supplementary File provides an overview of the aspired occupational segments of VET applicants in the sample. The three most frequently aspired to occupational segments among VET applicants are "occupations concerned with production technology" (14.94%), "medical and non-medical health care occupations" (14.82%), and "occupations in commerce and trade" (13.91%). Only up to 3% of VET applicants aspire to occupations in each of the segments "safety and security occupations" and "occupations in agriculture, forestry, and horticulture."



Next, the regional mismatch indicator is constructed to map the regional availability of occupations in the aspired segments as a measure of VET applicants' perceived regional opportunity structure. For this purpose, administrative data (German Federal Employment Agency, 2022) on the total labor force are used. Precisely, the share of employees in the aspired occupational segment within respondents' home regions at the small-scale district level (NUTS-3 regions) is merged. This constitutes an individualized measurement of the (mis)match between VET applicants' regional opportunities in alignment with their aspirations. A higher regional share of employees in VET applicants' aspired occupational segments indicates a higher match between their aspired occupations and their availability in the home region. Lastly, this measurement was inverted for ease of interpretation, so higher values represent a lower availability and, hence, a higher regional mismatch. As reported in Table 1, there is substantial variation in the regional mismatch indicator, ranging from low mismatch regions (around 38% of employees in the aspired occupational segment). To ensure that this variation is due to regional differences and not rooted in the over-regional availability of occupational segments, Figure A4 in the Supplementary File depicts the distribution of the regional mismatch indicator for each occupational segment.

As an alternative measure for the regional opportunity structure, an indicator of the *regional VET mismatch* is constructed to map the availability of VET positions in the region. The same approach as detailed above was applied, but administrative data (BIBB, 2023) on the regional share of newly signed apprenticeship contracts per year in the aspired occupational segments were used. The regional VET mismatch indicator shows a similar distribution to the regional mismatch indicator (see Table 1), and the correlation between the two measurements is 0.65 (see Table A1 in the Supplementary File).

4.3.3. Control Variables

First, a distinction is made between the two majority *gender groups*, female and male (reference category). NEPS did not provide further categories to measure gender.

A dichotomous variable indicates the respondents' *migration background*. Respondents with a migration background include those who have immigrated to Germany themselves or through at least one parent. Respondents without a migration background form the reference group.

The *age* of respondents at the start of their search was determined based on their date of birth and the date of the first interview after leaving school. To account for the multicollinearity between age and search time, age at the start of the search is included as a time-constant variable.

Respondents were classified according to the highest school-leaving certificate (*educational certificate*) they attained before the observation period. This classification distinguishes between three levels, reflecting the three-tiered school system in Germany: low (basic secondary education certificate [*Hauptschulabschluss*] or no school leaving certificate), medium (secondary education certificate [*Mittlere Reife*]), and high (university entrance certificate [*Fachhochschulreife/Abitur*]) educational certificate, with low educational certificates as the reference category.

In line with respondents' occupational status aspirations, *SES background* was measured by the highest ISEI-08 value associated with parents' occupations.



Administrative data on the supply-demand ratio (BBSR, 2022) in the respondents' home regions were merged to measure *regional competition*. The supply-demand ratio is based on the sum of newly signed apprenticeship contracts and unfilled training positions divided by the sum of newly signed apprenticeship contracts and applicants still seeking placement or unplaced applicants per year, multiplied by 100. This measurement was inverted, so higher values indicate higher regional competition.

4.4. Analytic Strategy

Multilevel linear growth curve models were employed using Stata 17 (StataCorp, 2021) to analyze adaptations in the mobility radius over time. Due to the panel structure of the data, with up to three observations per individual, two-level random intercept models were estimated using the "xtmixed" command. Additionally, ordered logistic regression models were estimated to account for the ordinal nature of the dependent variable. The results did not differ substantially from the linear estimation (for full regression results see the Supplementary File, Tables A2 and A3). For ease of interpretation of the interaction effects, figures plotting the predicted values based on the linear growth curve models are presented in the following section.

Addressing the first research question, a preliminary model predicting the mobility radius by search time was estimated. Second, the main predictor variables, status aspirations, regional mismatch, and interactions between these variables and search time were included. Next, a third model was estimated to incorporate a three-way interaction between the main predictor variables to examine the interplay between status aspirations and regional mismatch over time in predicting VET applicants' mobility radius. Further, a sensitivity analysis was conducted by including the control variables to assess the stability of the results. Lastly, supplementary models were estimated using the alternative regional VET mismatch indicator, which yielded similar results (for full regression results see Supplementary File, Table A4).

To deal with missing values in the dependent and independent variables, multiple imputations using Blimp 3.1.2 (Enders et al., 2018) were performed. A two-level multiple imputation procedure with random intercepts was applied. All variables used in the analysis models were included. For every missing value, 50 imputations were calculated.

5. Results

5.1. Adaptations in VET Applicants' Mobility Radius Over Time

Figure 2 depicts the linear predictions of VET applicants' mobility radius in the first, second, and third years of their search (see Model 1 in the Supplementary File, Table A2). The results confirm the search time hypothesis, indicating a significant increase in VET applicants' mobility radius over time (H1). Compared to the first year, VET applicants increase their mobility radius by 0.11 standard deviations in the second year and by 0.24 standard deviations in the third year.







5.2. The Role of Individual Status Aspirations for VET Applicants' Mobility Radius Over Time

Figure 3 depicts the predicted mobility radius of VET applicants with lower (-1 *SD*) and higher (+1 *SD*) status aspirations over time (see Supplementary File, Table A2, Model 2). Notable differences appear, particularly in the first year: VET applicants with higher status aspirations begin with a mobility radius 0.07 standard deviations above the average, while those with lower status aspirations start 0.23 standard deviations below the average. Over time, both groups exhibit an upward trend in mobility radius: VET applicants with higher status aspirations between the first and third years, whereas those with lower status aspirations see a slightly more pronounced increase of 0.28 standard deviations over the same period. Hence, the results align with the status aspirations hypotheses, stating that VET applicants with higher status aspirations have a higher initial mobility radius (H2a) and that VET applicants with lower status aspirations exhibit a higher increase in their mobility radius over time (H2b).

5.3. The Role of Regional Mismatch for VET Applicants' Mobility Radius Over Time

Figure 4 depicts the predicted mobility radius of VET applicants over time in regions with lower (-1 SD) and higher (+1 SD) levels of regional mismatch (see Supplementary File, Table A2, Model 2). No significant differences in the initial mobility radius in the first year are observed, and both groups display a similar upward trajectory in mobility radius over time. Therefore, the regional mismatch hypotheses, that VET applicants from regions with a higher mismatch exhibit a higher initial mobility radius (H3a) and/or a higher increase over time (H3b), cannot be confirmed.





Figure 3. Mobility radius by status aspirations over search time. Notes: Continuous variables are *z*-standardized; point estimates with 95% confidence intervals.



Figure 4. Mobility radius by regional mismatch over search time. Notes: Continuous variables are *z*-standardized; point estimates with 95% confidence intervals.

5.4. The Interplay of Individual Status Aspirations and Regional Mismatch for VET Applicants' Mobility Radius Over Time

Figure 5 depicts the predicted mobility radius of VET applicants with lower (-1 SD) and higher (+1 SD) status aspirations in regions with lower (-1 SD) and higher (+1 SD) regional mismatch (see Supplementary File, Table A2, Model 3). Overall, differences in the mobility radius of VET applicants with lower and higher status aspirations are more pronounced in regions with a lower mismatch than regions with a higher mismatch. Variations in the mobility radius of VET applicants with lower status aspirations mainly drive this convergence.

For VET applicants with higher status aspirations, no significant differences in the mobility radius are evident, contingent on the regional mismatch. In both lower and higher mismatch regions, they start with a mobility radius approximately 0.1 standard deviations above the average in the first year. This contradicts the first reinforcement hypothesis (H4a), which posits that VET applicants with higher status aspirations exhibit a higher initial mobility radius in regions with a higher mismatch than in lower mismatch regions. Likewise, there are no substantial differences in the development of their mobility radius over time between these regions.

In contrast, VET applicants with lower status aspirations demonstrate divergent adaptive patterns in their mobility radius depending on the extent of regional mismatch. These results do not align with the second reinforcement hypothesis (H4b), predicting that VET applicants with lower status aspirations experience a higher increase in their mobility radius in regions with a higher mismatch than regions with a lower mismatch. Precisely, in lower mismatch regions, they start with a noticeably lower initial mobility radius, 0.38

Figure 5. Mobility radius by status aspirations and regional mismatch over search time. Notes: Continuous variables are *z*-standardized; point estimates with 95% confidence intervals.

standard deviations below the average, but demonstrate a substantial increase over time, rising by 0.43 standard deviations. In contrast, in higher mismatch regions, VET applicants with lower status aspirations start with a significantly higher initial mobility radius, just 0.11 standard deviations below the average, and show a more modest increase over time, ultimately reaching a mobility radius of 0.07 standard deviations above the average in the third year—similar to their counterparts in lower mismatch regions.

5.5. Sensitivity Analysis

Sensitivity analyses were conducted to evaluate the robustness of the findings and to gain a deeper understanding of the associations under investigation. First, a model was estimated controlling for gender, migration background, and age, as these factors could potentially confound the relationship between the main predictor variables and both the initial level and subsequent changes in mobility radius (see Supplementary File, Table A2, Model 4). Including these control variables did not result in significant changes to the overall results, reinforcing the stability of the findings. Yet, the impact of status aspirations was slightly reduced, possibly due to the interrelation between post-school age, educational certificates, and status aspirations.

Second, the analysis was expanded by incorporating SES background and educational certificate to account for socio-structural influences related to status aspirations (see Supplementary File, Table A2, Model 5). Figure 6 shows the joint role of status aspirations and regional mismatch in predicting the mobility radius over time, with these additional controls included. The differences in mobility radius between individuals

Figure 6. Mobility radius by status aspirations and regional mismatch over search time. Controls: gender, migration background, age, SES background, educational certificate. Notes: Continuous variables are *z*-standardized; point estimates with 95% confidence intervals.

with lower and higher aspirations decrease considerably. However, while notable differences based on status aspirations persist in regions with a lower mismatch, these differences disappear in regions with a higher mismatch once socio-structural factors are controlled for. This result is primarily attributable to considering educational certificates rather than SES background (see Supplementary File, Table A2, Models 6 and 7). Lastly, a model was estimated to account for the regional supply-demand ratio, including regional competition as an additional control variable. This did not influence the findings in a significant way (see Supplementary File, Table A2, Model 8).

6. Discussion

6.1. Key Findings

This study illuminates how VET applicants adapt their willingness to be spatially mobile over time, emphasizing the interplay between individual status aspirations and the regional opportunity structure. The results reveal a significant expansion of the mobility radius of VET applicants during their search. This supports the theoretical assumption that youths adapt their willingness to be mobile as an agentic action to increase their chances of a successful transition in line with the agency-structure framework (Schoon & Heckhausen, 2019).

Notably, VET applicants' status aspirations emerge as a key driver of this agentic behavior. Overall, those with higher status aspirations exhibit a higher willingness to be mobile, indicating that their higher agentic goals act as motivational drivers in pursuing VET opportunities. This is consistent with previous research identifying status aspirations as a key predictor of spatial mobility and successful school-to-work transitions (Hitlin & Johnson, 2015; Hoffmann & Wicht, 2023; Schoon & Polek, 2011).

Moreover, the results reveal differentiated adaptations in the willingness to become mobile over time based on status aspirations, corroborating presumed distinct goal engagement strategies depending on agentic goals (Heckhausen & Buchmann, 2019; Schoon & Heckhausen, 2019). VET applicants with higher status aspirations rather maintain their initially higher willingness to be mobile, indicating early and steady engagement in action planning to achieve their goals. Conversely, those with lower status aspirations begin with a significantly lower mobility radius but adapt by increasing it over time. This suggests a shift towards action regulation in response to barriers encountered during their search for a successful transition.

The findings reveal no significant differences in VET applicants' willingness to be mobile based solely on regional mismatch, diverging from previous research that highlights the regional availability of aspired occupations as a key factor in perceived opportunity structure (Flohr et al., 2022; Hoffmann & Wicht, 2023; Ulrich et al., 2006).

However, subgroup analyses indicate a more complex reality, suggesting that the level of regional mismatch, in conjunction with VET applicants' status aspirations, plays a significant role in determining their willingness to be mobile. Contrary to the theoretical expectations, an unfavorable regional opportunity structure does not reinforce distinct goal engagement strategies of VET applicants with higher and lower status aspirations. Instead, the regional opportunity structure appears more impactful for VET applicants with lower-status aspirations.

VET applicants with higher status aspirations maintain a consistently high mobility radius and are relatively unaffected by regional mismatches or search durations. This suggests that their willingness to be mobile is more likely motivated by their higher agentic goals rather than an adaptive strategy when faced with difficulties. In contrast, those with lower status aspirations adjust their willingness to be mobile depending on regional opportunities. In regions with a lower mismatch, they initially display low willingness to be mobile, likely perceiving fewer barriers and thus feeling less need for agentic actions. However, in the event of an unsuccessful transition, they markedly increase their mobility radius over time. Conversely, in regions with a higher mismatch, they commence with a higher initial mobility radius, suggesting that they anticipate limited regional opportunities and employ compensatory agentic actions by increasing their mobility radius from the outset. Aligned with the agency-structure framework (Heckhausen & Buchmann, 2019; Schoon & Heckhausen, 2019), these findings indicate that, despite lower motivational drive from higher agentic goals, youths with lower status aspirations still engage in agentic actions to improve their chances of successful transition to VET—whether through action regulation in response to prolonged search challenges or action planning when faced with limited regional opportunities.

Further sensitivity analyses identified educational certificates as a key factor in mitigating the influence of status aspirations on VET applicants' willingness to become mobile. This aligns with the notion that status aspirations are closely tied to educational certificates, especially in countries like Germany, where a highly stratified educational system is strongly linked to a market-dependent VET system. In this context, educational certificates predetermine access to VET opportunities (Becker & Blossfeld, 2022; DiPrete et al., 2017; Solga et al., 2014). Consistent with previous research (Holtmann et al., 2017; Schoon & Lyons-Amos, 2017; Wicht & Ludwig-Mayerhofer, 2014), the findings indicate that part of the impact of status aspirations can be attributed to educational certificates and institutionally predefined opportunities that alter the utility of agentic goal engagement strategies. Particularly in regions with a higher mismatch, no differences in the mobility radius of VET applicants with higher and lower status aspirations are observed once educational certificates are accounted for. In this case, institutional and regional opportunity structures appear to present such substantial barriers that spatial mobility is an unfeasible agentic strategy for VET applicants to overcome cumulative disadvantages. Conversely, in regions with a lower mismatch, the findings reveal that differentiated adaptations in VET applicants' willingness to be mobile based on status aspirations persist even after controlling for educational certificates. This supports the theoretical assumption that, within favorable opportunity structures, spatial mobility can be a strategic agentic action for VET applicants to achieve their aspirations and increase the chances of a successful transition. Moreover, these findings highlight the complex interplay between agency and structure over time in shaping youths' adaptive goal engagement strategies in the transition to VET.

6.2. Limitations and Directions Towards Future Research

The present study is not without limitations. First, a notable limitation of this study is the inability to account for potential adaptations in VET applicants' occupational aspirations over time. Data on respondents' aspired occupations were constrained to the first year they applied for VET, preventing the modeling of any subsequent adaptations. Based on the agency-structure framework and previous research (Ackermann & Benz, 2023; Fischer-Browne, 2022; Nießen et al., 2022), it can be assumed that youths adjust their occupational aspirations during their search for a VET position. Adaptations may occur in youths' occupational aspirations, willingness to become mobile, or both. Not accounting for this could potentially

introduce bias. If adaptations in aspirations over time could be accounted for, the results might indicate more pronounced adaptations in the willingness to be mobile. Research suggests that youth lower their status aspirations over time (Schels & Abraham, 2023; Tomasik et al., 2009). These adaptations may be primarily relevant for VET applicants with higher initial status aspirations. They may contribute to why the results indicate fewer adaptations in the mobility radius for this group. Future studies based on appropriate longitudinal data should investigate the possible interplay between adaptations in VET applicants' willingness to be mobile and the development of occupational aspirations over time.

Second, the results do not fully support the relevance of the regional opportunity structure for VET applicants' willingness to become spatially mobile. One reason for this could be that the indicator-the regional mismatch reflecting the availability of their occupational aspirations based on the share of employees in the aspired occupational segments-may not adequately capture all aspects relevant to VET applicants' perceptions of their regional opportunity structures and subsequent mobility decisions. To address this issue, additional analyses were conducted using the regional VET mismatch as an alternative indicator based on the share of newly signed apprenticeship contracts in the aspired occupational segment. Both measures are highly correlated (0.65) and lead to similar results. Although the share of newly signed apprenticeship contracts might more accurately reflect VET applicants' actual opportunities in the local VET market, this measurement is more prone to fluctuations over time. It is affected by multiple factors that may not be immediately apparent to young people. Yet, based on previous research and theorizing, the regional mismatch is intended to reflect youths' perceived opportunity structures. The share of employees in the aspired segment should be a more stable and reliable measure, which VET applicants are more likely to assess when forming their perceptions of the regional availability of their aspired occupations, e.g., through the employed individuals in their surroundings and the prevailing occupational structure in their home region. This is further supported by previous research based on the same measurement (Flohr et al., 2022; Hoffmann & Wicht, 2023; Malin & Jacob, 2019).

An alternative explanation is that the regional opportunity structure may already shape youths' willingness to be mobile and/or their occupational aspirations before they apply for VET. This is supported by previous studies highlighting the relevance of the regional opportunity structure in shaping youths' occupational aspirations while still in compulsory education (Flohr et al., 2020; Hartung et al., 2022), as well as the finding that in higher mismatch regions VET applicants with lower status aspirations exhibit a higher mobility radius from the start. Unfortunately, the study lacked suitable data on youths' willingness to be mobile before they applied for a VET position. Future research should further explore the influence of regional opportunity structures on the willingness to become spatially mobile, considering various time points and employing alternative measures to capture these dynamics and early adaptations better.

Third, the sensitivity analyses indicated that educational certificates reflect institutionally predefined opportunity structures that shape and constrain VET applicants' engagement in spatial mobility as a strategy to achieve their aspirations. These findings might be attributed to the specific structure of Germany's stratified education and VET system (DiPrete et al., 2017; Ebner et al., 2013; Protsch & Solga, 2016). Future country-comparative research is needed to evaluate the generalizability of these results. Such studies should examine whether youths' status aspirations are a stronger driver of goal engagement to achieve successful transitions in countries with less stratified systems, such as the US or France.

Furthermore, as this study focuses on changes in the application behavior of unsuccessful VET applicants over time, it is based on a small and selective subsample. This selectivity might lead to underestimating the willingness to be spatially mobile, as the restricted sample may share specific central characteristics influencing their chances of securing a VET position and mobility decisions. To address the sample selectivity, Table A5 in the Supplementary File compares the descriptive statistics of the analysis sample with a sample of VET applicants who successfully attained a VET position in the first year. The restricted analysis sample of unsuccessful VET applicants is characterized by a higher percentage of females, youths with migration backgrounds, and lower educational certificates. No prevalent differences between the samples are observed regarding the percentage of youths with high educational certificates, their mean status aspirations, SES background, the regional indicators, and mobility radius. To test the generalizability of the findings, further research is needed. Yet, as spatial mobility is theoretically conceptualized as an adaptive strategy to overcome obstacles and facilitate successful transitions, unsuccessful VET applicants constitute a suitable sample to test the presumed mechanisms. Additionally, focusing on this vulnerable group, which has received less attention in research so far, may provide new insights relevant for policymakers and practitioners to develop targeted measures to support successful transitions.

7. Conclusion

This study provides new insight into adaptations in VET applicants' willingness to become spatially mobile over time, highlighting the interplay between individual status aspirations and the regional opportunity structure. Using longitudinal data on actual application behavior, the findings indicate that VET applicants adjust their willingness to be mobile as an adaptive strategy to increase their chances of a successful transition.

Consistent with the agency-structure framework (Holtmann et al., 2017; Schoon & Heckhausen, 2019), the study highlights the vital role of individual agency and structural opportunities for youths' transitions. Specifically, it uncovers differences in adaptive goal engagement strategies based on status aspirations and regional opportunity structures. VET applicants with higher status aspirations demonstrate a consistently high willingness to be spatially mobile from the outset. In contrast, those with lower status aspirations adapt their mobility radius significantly over time in more favorable regions and initially in less favorable regions. Additionally, educational certificates appear to impose predefined institutional barriers, mitigating the impact of status aspirations on VET applicants' willingness to engage in spatial mobility.

Given the critical role of spatial mobility in mitigating structural inequalities and increasing the likelihood of successful transitions, practitioners should focus on measures to promote spatial mobility, especially for unsuccessful VET applicants with limited opportunities, to counteract cumulative disadvantages for this vulnerable group. In particular, early interventions implemented at the beginning of the application phase are crucial to prevent disadvantageous transitions into NEET status.

Acknowledgments

I would like to thank the editors of the thematic issue and the anonymous reviewers for their helpful feedback. I am also very grateful to Professor Alexandra Wicht (University of Siegen and Federal Institute of Vocational Education and Training, Germany) for her valuable supervision in preparing this article. Earlier versions of this research were presented at the ISA World Congress of Sociology (June 30, 2023, Melbourne, Australia), the RC 28 Spring Meeting (May 18, 2024, Shanghai, China), the 16th Conference of

the European Sociological Association (August 24, 2024, Porto, Portugal), and the 31st annual workshop "Transitions in Youth" (September 5, 2025, Warsaw, Poland). I would like to thank the participants for their helpful feedback.

Funding

This article was written as part of the junior research group Career Orientations and Their Realization: Young People's Transitions to Vocational Education and Training in a Spatial Context, based at the Federal Institute for Vocational Education and Training (BIBB). The work of the research groups is funded by the German Federal Ministry of Education and Research (BMBF). Open access publication of this article was funded by the Open Access Publication Fund of the Federal Institute for Vocational Education and Training (BIBB).

Conflict of Interests

The author declares no conflict of interest.

Data Availability

This article uses data from the National Educational Panel Study (NEPS), Starting Cohort Grade 9, https:// doi.org/10.5157/NEPS:SC4:15.0.0 (Blossfeld & Roßbach, 2019; NEPS Network, 2025). The NEPS is carried out by the Leibniz Institute for Educational Trajectories (LIfBi, Germany) in cooperation with a nationwide network. The data are available for scientific use under restricted conditions to comply with the relevant data protection regulations and to ensure the anonymity of the participants. The regional data and code for replicating the data preparation and analyses are available at https://doi.org/10.7802/2871.

Supplementary Material

Supplementary material for this article is available online in the format the author provides (unedited).

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About the Author

Linda Hoffmann is a doctoral researcher at the junior research group Career Orientations and Their Realization: Young People's Transitions to Vocational Education and Training in a Spatial Context, led by professor Alexandra Wicht at the Federal Institute for Vocational Education and Training (BIBB). Her dissertation examines spatial mobility and its interplay with individual and regional factors.