ORIGINAL ARTICLE



Outcomes of Comprehensive Service Delivery and Early Interventions in Countering Youth Exclusion

Marthine Thøgersen¹

Received: 19 January 2024 / Revised: 8 April 2024 / Accepted: 11 April 2024 © The Author(s) 2024

Abstract

The high rates of young people not in employment, education, or training (NEET) are an international concern. At the core of the European Union's (EU), policy agenda is the reduction of youth unemployment and the active engagement of as many young people as possible in the workforce. The need for holistic services, interagency collaboration, and early intervention have been highlighted as important measures to reduce the risk of youth becoming NEET and subject to long-term unemployment. However, although highlighted as important, little is known about how these factors affect NEET rates. This study addresses this issue by exploring whether comprehensive service delivery, including holistic and collaborative approaches, and early interventions aimed at preventing youth from disengaging from education or employment, may explain the outcome of local NEET rates. Empirically, this study consists of multiple steps. An initial multilevel regression analysis of all Norwegian municipalities provided the basis for strategically selecting 18 municipalities based on their consistently higher or lower NEET rates than predicted when controlling for individual and structural factors that are shown to impact NEET risk. Semi-structured interviews in these municipalities regarding local work with NEETs provided the data, which were analysed using a fuzzy-set qualitative comparative method (fsQCA). The results suggest that the engagement of public employment and social services (PESS) in early intervention measures aimed at preventing youth from ending up in a NEET situation, combined with either extensive collaboration with other services or a holistic-oriented local (mental) healthcare service, may indeed explain lower NEET rates.

Keywords Early intervention \cdot fsQCA \cdot NEET \cdot Interagency collaboration \cdot Complex problems \cdot Holistic services

Published online: 09 May 2024

Centre for the Study of Professions, OsloMet – Oslo Metropolitan University, Oslo, Norway



Marthine Thøgersen marthinet@oslomet.no; marthinet@hotmail.com

Introduction

The high rates of young people not in employment, education, or training (NEET) are an international concern. Accordingly, reducing youth unemployment is a key focus of the European Union's (EU) policy agenda (European Commission 2020). Early exclusion from education and the job market can result in long-term disconnection, which can have serious societal and individual repercussions (Monsef and Mehrjardi 2018; Clark and Lepinteur 2019; Eurofound 2017). Thus, early intervention to avoid youth unemployment and inactivity is essential. The need to reinforce the prevention strategy directed at young people at risk of becoming unemployed or inactive is a priority in the reinforced EU Youth Guarantee (European Commission 2020). This includes, among other things, early warning and tracking systems to identify at-risk youth, more outreach work from public employment services, individualised support, and the strengthening of integrated service delivery.

In Europe, the term 'NEET' is an indicator used to refer to young people aged 15 to 29 who are in a situation of not being in employment, education, or training (Eurofound 2024). However, different definitions are being used and vary from country to country (Eurofound 2012; p. 20). The NEET term is the subject of ongoing critical debate, criticised for its tendency to generalise despite encompassing a wide range of young people in various situations with different needs, ranging from those choosing temporary NEET status and not requiring services from the support system to those facing more complex challenges in need of services from multiple actors, each with different needs and expectations to the service delivery (Eurofound 2016). Tailored services and person-centred approaches are thus important (Frøyland et al. 2022; Haug et al. 2023). Additionally, the NEET term has been faulted for attributing responsibility for disengagement to individuals themselves and familial factors, rather than addressing societal structural barriers to participation, including shifting values and perceptions regarding what defines a satisfactory quality of life for youth today, e.g. flexible work schedules and fair wages (McPherson 2021; Wrigley 2024). Suttill (2021) demonstrated that young NEETs were eager to present themselves not as lazy individuals disinterested in work but as 'typical youths' facing barriers in their search for the right job. Acknowledging youth's aspirations and the impact of their networks, as well as addressing the challenges they face across all areas of life, are of great importance (Ågren and Kallio 2023; Norvell Gustavsson and Jonsson 2024). Adopting a holistic approach to supporting young individuals entails considering these factors. While not all youth in the situation of being NEET face complex issues, many grapple with challenges in different areas such as education, health, finances, and social issues (Frøyland et al. 2022; Ose and Jensen 2017; Assmann and Broschinski 2021). The value of both a holistic approach and interagency collaboration in addressing youth exclusion is underscored repeatedly in both policy documents and youth research (e.g. European Commission 2018; Eurofound 2017; Saltkjel et al. 2021).

Despite being highlighted as valuable and important measures, research on the NEET-related outcomes of early interventions and comprehensive approaches is



scarce. The existing literature implies the need for additional research aimed at gaining insights into strategies for reducing the number of youths who are NEET (Mawn et al. 2017; Frøyland et al. 2022). In line with this, this study explores the outcomes of comprehensive service delivery and early interventions in countering youth exclusion. While this study adds to the existing literature on effective measures to reduce the number of young people disengaging from education or employment, it is important to acknowledge that the youths' overall quality of life extends beyond merely staying in or re-entering the educational system or job market (Norvell Gustavsson and Jonsson 2024; Ågren and Kallio 2023).

With the assumption that no single factor alone can explain the complexity of youth disengagement, I employ fuzzy-set qualitative comparative analysis (fsQCA) (Ragin 2008) to explore how a combination of conditions may contribute to counter youth exclusion. In the field of youth studies, several researchers have adopted this approach to examine the relationships between various conditions and youth wellbeing (e.g. Coello et al. 2022; Liu and Li 2023; Mellberg et al. 2022; Assmann and Broschinski 2021). In this study, I specifically explore how the combination of interagency collaboration, holistic service delivery, and early intervention potentially could explain the outcomes of lower NEET rates in Norwegian municipalities.

Early Interventions Directed at NEETs and At-Risk Youth

Youth in a situation of being NEET at the age of 16–17 face a significant risk of remaining in that situation in the long term (Crawford et al. 2011). Long-term unemployment negatively affects a person's health, financial situation, and overall well-being (Eurofound, 2017; Monsef and Mehrjardi, 2018; Clark and Lepinteur 2019). Early interventions aimed at preventing long-term exclusion from education or employment are therefore presumed important. However, early intervention can take various forms, encompassing a range of measures implemented at different points in time. Early Intervention Foundation (2023) defines it as:

Early intervention means identifying and providing effective early support to children and young people who are at risk of poor outcomes. Effective early intervention works to prevent problems from occurring, or to tackle them head-on when they do, before problems get worse.

The literature on early interventions in the context of youth exclusion often focuses on tackling problems like unemployment *after* they occur (e.g. targeted interventions within a few months of unemployment) (European Commission 2020; Ministry of Labour and Social Inclusion 2023). Less attention has been paid to early intervention measures to *prevent* the problem from occurring (i.e. how public employment (and social) services can work (in interagency collaboration) to prevent youth from falling into NEET status). This study focuses particularly on the latter. Early intervention approaches include outreach to young people who are not yet in contact with PESS. This is important for connecting with youth who need help but have not yet contacted the service, facilitating information sharing to prevent



school dropouts, and increasing awareness of available services (Eurofound 2019; Eurofound 2017).

Efforts to support young people in qualifying initiatives are important for securing positive long-term outcomes (Hawley et al. 2012; European Commission 2020). It could therefore be assumed that initiatives aimed at *keeping* young individuals engaged in education or training are more effective when working towards the goal of reducing the number of NEETs. Early intervention aimed at providing tailored guidance and sharing information about alternative education pathways is central. Holliman et al. (2023) examined obstacles and facilitators in supporting youth at risk of becoming NEET. The study revealed that early identification and intervention were hampered by a lack of collaboration and information sharing, both with the pupils and across services, underscoring the importance of positive and continuous communication and collaboration between different services to effectively assist young people with complex needs.

Interagency Collaboration for Holistic Service Delivery to At-Risk Youth

To effectively assist NEETs and at-risk youth facing complex challenges, interagency collaboration and holistic approaches are important. Given that this study aims to explore the collaboration among different professionals across various services, I adopt the term 'interagency collaboration', defined as 'the process whereby different professional services collaborate to seek positive impacts on care' (Cooper et al. 2016; p. 327). I refer to holistic services as a 'whole person' approach that addresses a person's needs comprehensively rather than just the isolated problem. This involves considering family dynamics, housing, health, interests, and other factors, as well as understanding how they interconnect contributing to the current situation.

Saltkjel et al. (2021) argued that the problems faced by youth in vulnerable life situations cannot be resolved by one service alone. Collaboration between impactful services, such as education, employment, and health, is therefore assumed to be critical to the success of such endeavours (Hawley et al. 2012; Eurofound 2019; European Commission 2018). Integrated service delivery through interagency collaboration is both rewarded and challenged by the fact that different organisational resources, knowledge, and skills of various professionals (differentiation) are to be merged into a new shared knowledge base of opportunities that would be unattainable if they were working on their own (Willumsen 2008; Green and Johnson 2015).

However, successful interagency collaboration faces numerous challenges. Considering collaboration through the concept of integration and differentiation, multiple factors on different levels influence success (Willumsen 2008). Specifically in the field of services to young people, divergent 'world views' have been identified as a main challenge, as conflicting perspectives on the problem and its solutions could hinder collaborative efforts (Morgan et al. 2019). These varied perspectives are shaped by factors such as education, personal experiences, attitudes, and organisational dynamics, thereby intersecting across multiple levels. Cooper et al. (2016) and



Timonen–Kallio (2019) also pointed to problems related to differences in perspectives and the absence of shared knowledge and communication among the collaborating actors. In a related vein, Mellberg et al. (2022) found a link between municipalities with low NEET populations and shared understandings of the problem and its solutions, suggesting that overcoming these differences is important.

This necessitates recognising the value of collaborative efforts and maintaining communication despite differences (Andersson et al. 2011). Accordingly, Cooper et al. (2016) advise practitioners to develop a greater understanding of other services, establish effective communication channels, and foster positive individual relationships. Research conducted in Norwegian municipalities with varying NEET rates found that those with lower rates demonstrated more integrated services, fostering collaboration and breaking down differences among services, whereas higher NEET rate municipalities emphasised differences and boundaries, resulting in fragmented services (Thøgersen 2024).

However, assessing the outcomes of interagency collaboration remains challenging. Cooper et al. (2016) found varied outcomes in their literature review, indicating both positive effects like increased service utilisation and fair distribution, and negative impacts on service use and quality. Reeves et al. (2017) observed slight enhancements in clinical processes and patient outcomes, but insufficient evidence for definitive conclusions. Despite this ambiguity in outcomes, young service users and professionals generally perceive interagency collaboration as beneficial and important for successful service delivery (Cooper et al. 2016; Morgan et al. 2019).

Study Context

Like the other Nordic countries, Norway has a lower share of NEETs (9.7%, aged 15–29) compared to the OECD average (12.6%) (Statistics Norway 2023; OECD 2024). However, Norwegian NEET youth have a higher risk of health problems and higher rates of early school leaving compared to the EU average (OECD 2018). Assmann and Broschinski (2021) found that Norway has many NEETs with disabilities, and the number of young people receiving disability benefits continues to increase yearly (NAV 2023).

Hence, Norwegian NEETs are likely to be a group with complex and intersecting problems that risk long-term exclusion from the labour market, which requires interagency collaboration. In the Norwegian welfare state, central services for young people in vulnerable life situations include the Norwegian Labour and Welfare Administration (NAV), the Follow-Up Services (FUS), and local healthcare services, including services for mental health and substance use disorders (LHC).

In Norway, NAV represents both the public employment services and parts of the local social services and is responsible for both state-funded labour market services and social services (including preventive work). NAV's mission is to contribute to creating an inclusive society, working life, and a well-functioning labour market. NAV is also responsible for the provision of income through different benefit schemes. In this paper, I refer to NAV as PESS (public employment and social services).



FUS primarily assists youth aged 15–21 not in education or employment to find employment, training, or skill-enhancing opportunities. They are notified when a pupil drops out of school (or is at risk of dropping out) and are obliged to contact the youth and offer support. FUS operates within the educational sector and upper secondary schools, though organisational structures may vary across Norwegian counties.

Finally, LHC has the primary task of helping people with addiction and/or mental health problems master their life skills, achieve better health, and increase their quality of life. Although they do not focus solely on young people, they often have dedicated professionals who work specifically with young adults.

Data and Methodology

This study is part of a larger research project with a research team actively engaged in the data collection process. The research design was formulated by a Swedish research team (see Mellberg et al. 2022).

Empirically, this study applies a two-step procedure in which a quantitative study provides the basis for a qualitative study of the selected cases. Interviews form the basis for the fsQCA which allows for an in-depth study within each case, as well as systematic comparison across cases. QCA aims to explore causal relationships between conditions and outcomes within a smaller to medium-sized dataset (10–100 cases).

Case Selection

Cases were selected based on a multilevel random intercept logistic regression analysis of anonymised register data from Statistics Norway for the entire Norwegian population. We followed a procedure developed by a Swedish research team (see Mellberg et al. 2022), based on the definition of NEETs used, including 16 to 24-year-olds who worked or studied only to a very limited extent during a calendar year.

The likelihood of an individual being NEET was regressed on a set of individual and municipal variables, including the municipalities' local labour market, the unemployment rate, education, and care provision, as well as individual factors, such as age, gender, immigrant background, level of education, and whether one had children aged 6 years or under.

The analysis spanned a 5-year period (2014–2018), with each year analysed separately. The municipalities were ranked according to their estimated random intercept (i.e. municipal-level residual) in each year, with positive residuals indicating a greater NEET likelihood than otherwise expected, while negative residuals indicate a lower likelihood. Using the average rank over 5 years, we selected ten municipalities where the observed NEET rate was consistently lower than what could be expected based on their pre-conditions, and ten municipalities where the observed NEET rate was consistently higher than what could be expected (see Appendix D



for each municipality's results). I will refer to these municipalities as municipalities with 'lower NEET rates' and 'higher NEET rates'.

Data Collection

Subsequently, semi-structured interviews in the 20 selected municipalities were conducted in late 2021 or early 2022. The interviews covered various topics, including the informants' backgrounds, local youth characteristics, organisational details, and interagency collaboration. Due to insufficient data in two of the municipalities, this study covered 18 cases, including nine with lower NEET rates than predicted and nine with higher NEET rates.

The key informants were those holding the managerial level of the concerned services. First, local PESS managers were interviewed, as PESS is a core service concerning NEET follow-up. These managers often have considerable local autonomy and are ultimately responsible for the delivery of services. Therefore, they are key in terms of how the local PESS interprets its mandate and approaches young NEETs. Based on general knowledge of relevant services for NEETs, we interviewed FUS and LHC. In some cases, we also selected services that the PESS manager mentioned as important collaborating partners.

This study included interviews with 64 professionals; of these, 28 informants represented the local PESS, 18 informants represented the FUS, 14 informants represented LHC, primarily from services targeting mental health and substance abuse problems, and four informants represented other services. Thirty-eight informants had a management position, and 26 were operative staff (primarily from FUS, where the staff has a kind of combined position of both being involved in individual cases and being a local network partner).

Fuzzy-Set Qualitative Comparative Analysis

There are several analytical approaches in QCA, including multi-value and temporal QCA, crisp-set, and fuzzy-set, with the latter two being the main variants (Schneider and Wagemann 2012). Crisp-set categorise cases as either members (1) or non-members (0) of sets, while fuzzy-set allows for degrees of membership in sets with values between 0 (full-non membership) and 1 (full membership). Given the complexity of social science, it is advised to use a fuzzy-set unless clear dichotomies are being examined (Rihoux and Ragin 2009). Accordingly, I used the fsQCA approach to examine organisational arrangements related to NEET follow-up to explore their potential impact on NEET shares.

QCA is grounded in set theory, where cases can have varying degrees of membership in different sets defined as conditions and outcomes (Schneider and Wagemann 2012). This approach explores complex causality by assessing how conditions interact across cases and which ones (and combinations thereof) are necessary and/or sufficient for a particular outcome (Rihoux and Ragin 2009). A condition is necessary if the outcome cannot occur without it. If the condition is insufficient, this cause alone is not enough for the outcome to occur. A condition is sufficient if the



outcome always is present whenever a condition occurs. However, in this case, the outcome can occur without the condition, meaning that other causes can also produce the outcome (Rihoux and Ragin 2009).

Calibration of the Outcomes and Conditions

The membership scores for each condition and outcome were assigned through 'calibration'. Researchers may take different approaches to calibration. In this study, two approaches were used. First, the outcome under study was 'lower NEET rates than predicted'. This was calibrated through the direct method in the software fsQCA 4.1 (Ragin and Davey 2022) and was based on raw data from the initial twolevel random intercept logistic regression analysis, which was used to select the municipalities. Full membership was assigned to the lowest average intercept and full non-membership to the highest average intercept, ranging from 0.05 to 0.95. The inflection point was set to 0, separating the positive residuals from the negative residuals. The five conditions in this study are informed by domain-specific knowledge (Matkke et al. 2022) regarding measures deemed essential in supporting young people in NEET situations, as well as external definitions derived from empirical and theoretical knowledge. The conditions were calibrated through comprehensive qualitative analyses of the interviews using a four-value fuzzy scale (0, 0.4, 0.6, 1) (Oana et al. 2021). For example, the first condition (EI-PESS) was calibrated based on interviews with PESS managers, using the 'cutting and sorting' technique (Ryan and Bernard 2003) looking for descriptions of the target group, how PESS encounters youth, and efforts to prevent disengagement (see Appendix A for details for all conditions). Thresholds were established using a four-value fuzzy scale (Oana et al. 2021) based on qualitative distinctions among the cases (for the qualitative thresholds and criteria, see Appendix B). Multiple steps were taken to ensure validity in the process of assigning membership scores to the cases, including cross-referencing scores with raw data, testing (and adjusting) thresholds, and consulting colleagues involved in the data collection. In line with de Block and Vis's (2019) recommendations for good practice, I aimed for full transparency in the calibration process of transforming qualitative data into fuzzy-set scores. Detailed descriptions are found in Online Resources.

Conditions

As conditions, I considered five dimensions of organisational arrangements concerning local NEET follow-up:

- 1. Public employment and social service's engagement in early intervention to prevent youth from disengaging (EI-PESS);
- 2. Public employment and social service's engagement in organised collaborative efforts with other services for NEETs (EC-PESS);
- 3. Knowledge exchange among all services (KE);
- 4. Intervention agreement among all services (IA);



5. Holistic-oriented local (mental) healthcare service (HO).

Conditions 1 and 2 were derived from interviews with local PESS managers and Thøgersen's (2023) research, indicating diverse approaches to working with youth, including proactive and reactive approaches, in addition to more hybrid approaches that are proactive along some dimensions and reactive along others. A proactive approach includes outreach to young people not yet in contact with PESS, collaboration across relevant services, and concrete and targeted preventive efforts for youth at risk of becoming NEET, while the reactive approach indicates that measures were implemented after a problem had developed, such as early school leaving or losing a job (Thøgersen 2023). The scoring of condition 1 assessed the degree to which PESS actively engaged in activities to prevent disengagement or primarily focused on (older) youth who had already disengaged. The scoring of condition 2 assessed the degree to which PESS described extensive collaboration with other relevant services at various levels.

Conditions 3 and 4 were included based on the assumption that knowledge exchange among services leads to a more comprehensive and agreed-upon service delivery which enhances interagency collaboration. Unlike conditions 1 and 2, which only included the PESS managers' perspectives, these were based on responses from all respondents in each municipality, with equal weighting. The scoring of condition 3 assessed the presence of an effective knowledge-sharing system among services, while the scoring of condition 4 evaluated agreement among services on approaches to working with NEETs.

Given the prevalence of mental health issues among at-risk youth and NEETs, local healthcare services (LHS) play a crucial role in providing support. Thus, I included condition 5 to assess the degree to which LHS adopts a holistic approach to youth work by considering the complexity of issues and collaborating with other services.

For each municipality's fuzzy-set score for the outcome and condition, see Appendix C.

Limitations

Firstly, there is a time gap between the data used for municipality selection and the interview data collection due to register data availability. We mitigated this by basing municipality selection on 5-year outcomes, capturing long-term differences, and querying informants about coordination measures from 2014 to 2018, along with any recent changes. Secondly, this study relied on a limited number of informants who held positions that enabled them to offer comprehensive insights into interagency collaboration concerning local NEETs. Yet, the findings are based on the informants' experiences, potentially not representing all perspectives within the municipality. Thirdly, the study contains a limited number of strategically selected cases. A larger, random sample could have yielded stronger generalisability, as well as more empirically observed configurations in the analysis. Furthermore, despite the increasing use of QCA in exploring causal relationships in social science, there



are critical perspectives regarding its analytical process and suitability compared to other methods (e.g. Tanner 2014; Paine 2016; Lucas and Szatrowski 2014; Hug 2013). However, QCA is appreciated for its ability to discover conjunctural causation (combinations of conditions leading to an outcome), considering equifinality (multiple factors can produce the same outcome), as well as asymmetry (the presence of specific conditions leading to an outcome does not automatically imply that their absence leads to the opposite outcome) (Ragin 2008; Schneider and Wagemann 2012).

Results

The findings are presented in this section, starting with the analysis of necessity, which is followed by the truth table and the analysis of sufficiency. All analyses were conducted in RStudio using the QCA package (Dusa 2019).

Analysis of Necessity

Three parameters of fit were considered in analysing whether any of the conditions (or combinations) in this study were necessary for the outcome of a 'low NEET rate' to occur. The *consistency* score can take any number between 0 (completely outside) and 1 (completely inside) and indicate whether a condition is necessary. The recommended necessity consistency threshold is 0.9. To avoid the identification of a trivial necessary condition, the *coverage* score and the *relevance of necessity (RoN)* were calculated. Coverage measures how much of the outcome is covered by the necessary condition(s), whereas the RoN assesses the variance in the condition, and both should exceed 0.60 (Mattke et al. 2022). Table 1 presents the results.

Table 1 Analysis of necessity

Condition tested	Consistency (incl.)	Relevance of necessity (RoN)	Coverage
Intervention agreement (IA)	0.721	0.549	0.565
Knowledge exchange (KE)	0.686	0.719	0.658
Early intervention (EI-PESS)	0.594	0.942	0.882
Extensive collaboration (EC-PESS)	0.663	0.807	0.727
Holistic-oriented local health service (HO)	0.685	0.804	0.734
IA+~EI-PESS+EC	0.927	0.123	0.507
~KE+EI-PESS+EC-PESS	0.938	0.385	0.600
KE+EI-PESS+~EC-PESS	0.902	0.268	0.540
~KE+EI-PESS+HO	0.906	0.476	0.622
EI-PESS+~EC-PESS+HO	0.906	0.311	0.556
EI-PESS+EC-PESS+~HO	0.901	0.330	0.561
IA+KE+~EI-PESS+HO	0.927	0.123	0.507



No individual condition met the recommended necessity consistency threshold of 0.9 and, therefore, was not deemed necessary for the outcome. When examining combinations of conditions (configurations) meeting the consistency threshold of 0.9, their RoN values were below 0.5, indicating trivial necessary configurations.

Analysis of Sufficiency

This analysis examined whether any of the conditions (or configurations) in this study were sufficient for the outcome 'low NEET rate'. The analysis started with a truth table, followed by the logical minimisation of this table to find the simplest relevant solutions that explained the outcome by eliminating all logically redundant conditions (i.e. conditions that were irrelevant to produce the outcome). In this step, three different solutions can be generated (complex/conservative, intermediate, and parsimonious), each addressing logical remainders and limited diversity differently. The choice of solution is debated, with some arguing in favour of the complex solution (e.g. Saridakis et al. 2022), others for the intermediate solution (e.g. Schneider and Wagemann 2012), while some suggest that the parsimonious solution is the appropriate choice (e.g. Baumgartner and Thiem 2020). The selection of the solution should align with the study's aim (Oana et al. 2021; Glaesser 2023). Simulation studies show the parsimonious solution as the only one to detect causal relationships (Baumgartner and Thiem 2020; Thiem 2019). Given this study's objective to assess if interventions like interagency collaboration, early intervention, and holistic-oriented service delivery can explain lower NEET rates, the parsimonious solution was chosen. Accordingly, an 'enhanced standard analysis' (ESA) was conducted to generate the most parsimonious solution, excluding any untenable assumptions (Schneider and Wagemann 2012; Dusa 2022).

Truth Table

The truth table lists all possible configurations, with each row representing a distinct condition combination. For example, row 17 describes a situation in which there is consensus about preferred solutions, but there is little to no knowledge exchange between the actors, the local PESS works neither preventively nor in extensive collaboration with other actors, and the LHS does not have a holistic orientation towards working with young people.

In this study, using five conditions, there were 32 possible configurations (minterms). Only 10 minterms had cases, which means that there were 22 unobserved configurations (logical remainders). This is common and expected in social research (Schneider and Wagemann 2012; Schneider 2019; Glaesser 2023). However, this limits the conclusions that can be drawn, as multiple possible configurations cannot be tested empirically in this analysis.

Table 2 shows the complete truth table (after removing contradictory simplifying assumptions from the logical remainders). Those minterms that are consistent with the outcome 'low NEET rates' are displayed with '1' in the OUT-column, those that



Table 2 Truth table with parameters of fit. Note: Cases in bold are the cases with low NEET rates

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Cases PRI incl п OUT Holistic-oriented LHS (HO) Early intervention Extensive collabora-(EI-PESS) tion (EC-PESS) exchange (KE) Knowledge agreement (IA) Intervention Table 2 (continued) Row no. 15 16 19 21 22 23 24 28 4

are not are displayed with '0', and the logical remainders are displayed with '?'. The truth table shows three positive outputs, 11 negative outputs, and 18 remainders.

The truth table contains some noteworthy results. Five of the nine municipalities with lower NEET rates are covered by the first configuration in row 32 (IA * KE * EI * EC * HS). This indicates a consensus about the preferred solutions in their different networks, extensive knowledge exchange between services, the local PESS being concerned with both early intervention and extensive collaboration with other actors, and the LHS having a holistic orientation in their work with young people.

Cases 7 and 17 (rows 31 and 30) also show a consensus about preferred solutions in their different networks, extensive knowledge exchange between services, and that PESS is concerned with early intervention; however, Case 17 did not have a PESS involved in extensive collaboration with other actors but did have a holistic-oriented LHS. The inverse was observed for Case 7. Two municipalities with a lower NEET rate (Cases 1 and 12) belonged to configurations that were also covered by municipalities with a higher NEET rate, suggesting multiple paths to the outcome.

The municipalities with higher NEET rates are distributed across seven rows in the table, but the configuration in row 17 (IA * ~KE * ~EI * ~EC * ~HS) was covered by three of the municipalities with higher NEET rates. Also, none of the cases with higher NEET rates had membership scores higher than 0.5 for the 'EI-PESS' condition. Only two of nine cases had membership in the set 'EC-PESS', and three cases had membership in the set 'HO'. The results also show that knowledge exchange and agreement about solutions among services were present in municipalities that had both high and low shares of NEETs.

To assess whether either of these configurations could explain the outcome of lower NEET rates, the truth table was logically minimised to assess the parameters of fit (pof) for the sufficiency analysis.

Logical Minimisation

In this step, the Quine–McCluskey algorithm was applied to create the simplest and most relevant solutions. The sufficiency consistency threshold was set to 0.8.

No simultaneous subset relations were found. However, the parsimonious solution for both 'low NEET rates' and 'high NEET rates' outcomes included rows 13 and 29. These were contradictory simplifying assumptions (a form of untenable assumption), thus excluded from the minimisation process (Schneider and Wagemann 2012; Dusa 2022). After excluding rows 13 and 29, the new analysis showed that rows 10 and 26 were used in the parsimonious solution for both outcomes, thus needing to be excluded as logical remainders from the truth table. In total, rows 10, 13, 26, and 29 were excluded from the minimisation process. Table 3 shows the 'enhanced most parsimonious solutions' (ePS).

The ePS suggests two configurations leading to lower NEET rates than predicted: (1) early intervention (EI-PESS) in combination with extensive collaboration (EC-PESS) or (2) early intervention (EI-PESS) in combination with a holistic-oriented LHS (HO).



Table 3	Enhanced mo	ost parsimonious	solution fo	or the outcome	'low NEET rates'
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Overall solution	EI-PESS * EC-PESS + EI-PESS * HO => low NEET rate						
	Consist- ency (incl).	PRI	PRODUCT	Solution coverage	Unique coverage	Cases	
EI-PESS * EC- PESS	0.925	0.913	0.845	0.482	0.022	7; 5, 6, 8, 9, 11	
EI-PESS * HO	0.881	0.859	0.757	0.497	0.037	17; 5, 6, 8, 9, 11	
Overall solution	0.885	0.866	0.766	0.519			

To assess whether the configurations were meaningful or inconclusive, the PRI and PRODUCT scores needed to be considered. PRI consistency measures whether a configuration serves as sufficient for explaining both the high and low levels of an outcome simultaneously. Combining the consistency score (incl.) with the PRI score produces the PRODUCT score. Both solutions had high PRI and PRODUCT scores, indicating clear non-simultaneous subset relations, and could safely be interpreted as sufficient for the outcome of low NEET rates (Mattke et al. 2022; Schneider and Wagemann 2012).

Each solution's coverage score fell below 0.60, suggesting that there are aspects of the outcome that remain unexplained. The unique coverage assesses the extent of the dataset explained solely by one configuration. Both solutions had low unique coverage scores, indicating overlap with another sufficient configuration. EI-PESS led to the outcome in both solutions, paired with either EC-PESS or HO. Only two cases were uniquely covered by each solution, while five cases were covered by both solutions (5, 6, 8, 9, and 11), meaning that these cases had a PESS focusing on early intervention and engaged in extensive interagency collaboration concerning NEETs, along with a holistic-oriented LHS.

Discussion

The purpose of this study was to explore whether holistic service delivery, interagency collaboration, and early interventions aimed at preventing youth from disengaging may explain the outcome of lower NEET rates in Norwegian municipalities. Although highlighted as important in the follow-up of at-risk youth with complex needs, little is known about the concrete outcomes of these measures. Using fuzzy-set qualitative comparative analysis (fsQCA), this study contributes to an understanding of how comprehensive service delivery, including holistic and collaborative approaches, and early intervention approaches can work in cohesion to successfully provide the services needed to reduce the number of youth NEET. The results suggest that PESS engaging in early interventions aimed at preventing youth from ending up in a NEET situation, combined with either engagement in extensive interagency collaboration or a holistic-oriented local (mental) healthcare service (LHS), may indeed explain lower NEET rates.



Being excluded from the educational system or employment at a young age can result in long-term disconnection (Crawford et al. 2011), and long-term unemployment affects both society at large and an individual's health, finances, and wellbeing (e.g. Monsef and Mehrjardi 2018; Frøyland et al. 2022). Although not every person who falls within the category of NEET requires help from the support system, all youth facing important transitions between school and work may value personal guidance about available services and opportunities at an early stage. Early intervention can take the form of various measures at different times, such as a quick response after a problem has occurred to limit the 'damage' or measures taken to prevent the problem from occurring in the first place (Early Intervention Foundation 2023). This study considered both forms through the 'early intervention' condition, wherein a high score indicated a PESS engaged in efforts to prevent youth from ending up in a NEET situation, and a low score showed that PESS acted only after, to reintegrate youth into education or employment. A noteworthy result of this study is that the municipalities with higher NEET rates showed low scores on this condition, which means that they described few or no efforts aimed at preventing youth from becoming NEET, while a high score on this condition is associated with lower NEET rates.

Whenever a PESS engaged in these early intervention activities, it also included other services, such as secondary schools and upper secondary schools. This could be the reason why early intervention measures from PESS appeared in both sufficient solutions, combined with either a PESS being engaged in extensive collaboration with other services or a holistic-oriented LHS. Thus, it is not sufficient for a single service to work on preventing dropout, and involving PESS in this effort seems to be particularly important. In line with other research in the field of youth with complex problems (e.g. Hawley et al. 2012; Saltkjel et al. 2021; Eurofound 2019), the findings of this study suggest that adopting a holistic approach, including interagency collaboration, plays a crucial role in countering youth exclusion. However, as the literature reveals, different perspectives on the problem and its solutions serve as important hindering factors for successful collaboration (Morgan et al. 2019; Cooper et al. 2016; Timonen-Kallio 2019). Mellberg et al. (2022) found that shared perceptions of the problem and the appropriate solutions were associated with lower NEET rates than predicted. However, the results of this study did not show such results. Agreements and disagreements about preferred solutions were found in municipalities with both high and low NEET rates and were not associated with either outcome.

Regardless of common perspectives, effective communication, constructive systems for information sharing, and actors' willingness to address differences have been highlighted as essential for fostering collaborative relationships. Including conditions related to knowledge exchange between services in this study aimed to capture these dynamics. However, knowledge exchange was also observed irrespective of whether municipalities had higher or lower NEET rates. This aligns with Thøgersen's (2024) findings and could be attributed to the *content* of the information exchanged rather than the act itself. This study does not capture the specifics of exchanged information as to whether it involves accentuating boundaries and differences or breaking through the differences to collaborate more effectively.



Nevertheless, the conditions related to collaboration and holistic approaches within PESS and LHS capture whether the services are fragmented or integrated, and the findings indicate that both conditions were associated with lower NEET rates (in combination with early intervention), highlighting the significance of collaboration in addressing youth exclusion. This suggests that the municipalities with lower NEET rates managed to handle the different perspectives and 'world views' without creating disconnections, whereas those with higher NEET rates exhibit more fragmented service delivery.

Conclusion

The findings of this study improve our understanding of how local organisational practices of tackling youth exclusion affect NEET rates. According to the QCA literature, a sufficient configuration points to the outcome being present whenever a combination of conditions is present (Ragin 2008). This means that when PESS engages in early intervention measures aimed at preventing youth from ending up in a NEET situation, in combination with either PESS engaging in extensive collaboration or a holistic-oriented LHS, the outcome of a low NEET rate will also occur.

This study has the potential to inform policy decisions, both at the local and national levels, as they provide valuable insights into which strategies to employ in the follow-up of NEETs and at-risk youth to ultimately reduce the number of young people who end up in a situation of being NEET. However, an underlying principle of fsQCA is that different factors and configurations not considered in this study may lead to the same outcome (equifinality). Thus, the results of this study suggest two ways to achieve the outcome but do not exclude other possible causes.

There is generally a lack of research on how interventions at different levels impact NEET rates, leaving significant scope for further research in this field. By employing fsQCA, this study demonstrates a method suitable for exploring this association in future research. While this study operates at the organisational level of service delivery, attention should also be paid to the individual-level service quality, including factors such as close individual follow-up, user involvement, and tailored services. Additionally, questions arise regarding the organisation of PESS. Is it the integration of employment and social services that makes PESS such a central actor in this study, or is a proactive approach of public employment services without integrated social services sufficient to impact the level of NEET? This suggests potential for future comparative studies across countries with differing organisational structures.

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s43151-024-00126-1.

Acknowledgements This research article is part of the project 'Organizing for Outcome (O4O): Links between Service Integration and Transitions to Employment for Citizens with Complex Service Needs'. This project is based on a study design developed by Renate Minas and Thomas Korpi, at Stockholm University. Their generosity is greatly appreciated. I thank the project's research team for collaboration in the data collection process: Therese Saltkjel, Tone Alm Andreassen, Eric Breit, and Chris Rønningstad, and a special thank you to Tone Alm Andreassen and Therese Saltkjel for their valuable comments on earlier



drafts of the article. I thank the project's stakeholder panel for valuable discussions in the early phase of the article. I also wish to express my thanks to the informants who have shared their thoughts and ideas with us. Finally, I would like to thank the journal's anonymous reviewers for very valuable suggestions for the improvement of the final version of this article.

Funding Open access funding provided by OsloMet - Oslo Metropolitan University. The research project of which this study is a part was supported by the Research Council of Norway [grant number 301943].

Data Availability The author confirms that all relevant data analysed during this study are included in the Online Resources in this published article. If readers would like any additional data, this could be provided on request to the corresponding author.

Declarations

Competing Interests The authors declare no competing interests.

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