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Office Level Variation in Benefit Duration for Service Users Receiving Work Assessment Allowance: A Norwegian Longitudinal Multilevel Register Study

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Abstract

Purpose: Long-term work disability is a key predictor of permanent disability and poses a significant challenge to public health, impacting both individuals and society. This study investigates the duration of Work Assessment Allowance (WAA) benefit across seven local Norwegian Labour and Welfare Administration (NAV) offices within a shared housing and labour marked region in Norway (Nord-Jæren). *Methods*: Using individual-level data covering the period 2015-2019 (n= 8,582), this study examines the association between local NAV office affiliation and WAA duration using generalized linear model regression analysis adjusted for a range of relevant individual level factors. *Results*: Two of the seven offices, specifically the smallest and largest NAV offices, exhibited significantly longer WAA durations compared to the medium size reference office. Individuals at these offices had 4.10 and 1.52 months longer average WAA duration, respectively, holding all other variables at their means (both $p < 0.001$). Moreover, the number of activation programs granted were significantly associated with WAA duration ($p < 0.001$). *Conclusion*: While residual confounding cannot be rule out, these findings suggest that local NAV offices significantly influence the duration of WAA benefit, and that there are unwarranted variations in service users' outcomes. By understanding and addressing these variations, policy and practice adjustments can be informed to promote greater efficiency, quality, and equity in public service delivery.

Keywords:
work disability;
return-to-work;
variation;
disability duration;
long-term sickness absence

Practical Relevance

- Local NAV offices within a shared labor and housing region showed significant variation in service users Work Assessment Allowance (WAA) duration, highlighting potential unwarranted variation and inefficiencies in service delivery.
- The findings indicate that both the largest and smallest NAV offices exhibit longer WAA durations compared to medium-sized offices. This suggests a need for further investigation into how office size and other characteristics affect service delivery and benefit duration.
- Providing knowledge on between office variations, and office-specific characteristics or organizational practices associated with longer WAA duration, can enable policy makers and practitioners to enhance the quality, efficiency and equity of public service delivery.
- Variation in activation practices and the use of activation measures across the NAV offices suggest a need for further investigation into the impact of the context in which the activation programs are implemented.

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Introduction

Long term work disability, characterized by a prolonged inability to work due to health related-reasons, is a significant public health problem, affecting both the individual (Thomas, 2005; Waddell et al., 2006) and society at large (OECD, 2019). It not only affects the economic standing, social well-being, and overall health of individuals (Thomas, 2005; Waddell et al., 2006), but also serves as a strong predictor of permanent work life exclusion (Gjesdal & Bratberg, 2003; Hultin et al., 2012; Klein et al., 2021; Lund et al., 2008). Shortening the duration of benefits can be cost-effective from both an employer and societal standpoint, through enhancing productivity while reducing lost income and tax revenue.

The Scandinavian countries of Norway, Sweden and Denmark are known for their robust social security and sickness insurance systems, providing comprehensive support to individuals unable to work due to illness or injury (Pedersen & Kuhnle, 2017). Local social insurance offices, such as the Norwegian "NAV" (the Norwegian Labour and Welfare Administration), hold key positions in facilitating the return to work (RTW) process for individuals attempting to resume employment following illness or injury (Hakvaag et al., 2022). Through administrating sickness benefits and offering and monitoring activities aimed at improving RTW outcomes such as duration of benefit recipiency and number of hours worked, social insurance offices hold an important coordinating role in the RTW process.

In NAV, the public employment service, the national sickness insurance, and the social services are co-located, and the central aim of the organization is to provide holistic and individualized services (Christensen & Lægreid, 2011). In Norway, sick-listed workers can receive sickness benefits for up to a year (52 weeks), and if unable to RTW after this period, or if individuals i.e., due to income requirements, are not eligible for sickness benefit they can apply for Work Assessment Allowance (WAA called *Arbeidsavklaringspenger or* AAP in Norwegian (NAV, n.d.-b)). WAA is a temporary health-related benefit lasting up to three years for individuals with certified illnesses or injuries affecting their work ability. Following a government reform in 2018 the maximum duration for receiving WAA benefit was reduced from four to three years. This legislative change, combined with other measures to narrow the entrance of individuals to the benefit and increase work incentives, was intended to facilitate faster and more individually tailored support for the recipients (Prop. 74L, 2016).

The overall aim of the WAA benefit is to clarify service users' employment prerequisites and the WAA spell can result in full or partial transition to work and/or permanent disability pension. Participation in the WAA program requires active medical treatment or engagement in activation programs aiming to clarify the individuals' workability or to promote RTW (NAV, n.d.-b). These activities, organized by local NAV offices or external providers e.g., include job training, wage subsidies, shorter labor marked courses to improve individual qualifications and employment opportunities, and education (NAV, n.d.-a). Common for the activation programs is that the NAV advisor is responsible for assessing the service user's follow-up needs and initiate necessary and beneficial measures to promote RTW.

The duration of the work disability and the benefit duration is an important parameter that can affect the likelihood of returning to work (Gjesdal & Bratberg, 2003; Hultin et al., 2012; Lund et al., 2008). Despite this, little is known about the impact of the follow-up from the local social insurance office (in Norway: the local NAV office) on service users' RTW outcomes. Norway, Sweden, and Denmark are known for having advanced systems for collecting and managing administrative data, which provide detailed insights into service users' benefit trajectories over time (*DREAM*, n.d.; *Forløpsdatabasen-Trygd*, 2002; *Statistikmyndigheten SCB*, n.d.). However, effectively utilizing this data to assess the impact of RTW interventions, as well as the follow-up from local social insurance offices, is challenging due to the inherent complexity of the RTW process. Challenges such as risk of reversed causation and selection issues make it difficult to accurately estimate the effectiveness of RTW interventions. This highlights the importance of understanding the specific policy context and how interventions are implemented.

Our study extends the existing literature by investigating inter-office variations in service users' outcomes within local NAV offices in Rogaland County. The study applies a generalized linear regression model analysis to investigate the association between local NAV office

affiliation and service users' benefit duration within the same social policy context and labor market region. A retrospective observational design was employed to investigate the characteristics of seven local NAV offices within the Nord-Jæren region in Norway. The study utilized individual-level data (*n*= 8,582), aggregated to office level, to follow service users through former disability spells. This approach allowed for a comprehensive analysis of WAA benefit duration, and to identify characteristics of the local NAV offices' practices related to WAA duration and the use of activation measures within the local NAV-offices.

Theoretical Framework

Loisel et al (2005) provides a comprehensive framework for understanding the factors that influence RTW, emphasising that work ability and RTW are not solely dependent on the individual and his or her individual characteristics, but are also influenced by workplace conditions, healthcare providers, the insurance context, and the collaboration among these stakeholders. Through the administration of compensation for lost income, the insurance context can exert a significant influence on the RTW process (Loisel et al., 2005). Moreover, systemic factors and administrative practices can play a pivotal role in shaping the experiences and outcomes of individuals attempting to RTW (Collie et al., 2019; Frøyand et al., 2018; Gray et al., 2019; Hakvaag et al., 2022; Lane et al., 2022; Lippel, 2007; MacEachen et al., 2010).

Although centrally governed by the Directorate of Labour, local NAV offices differ across various parameters, including the office size (number of employees), caseload, competence, and organization of work and practices (Fossestøl et al., 2016; Langeland & Galaasen, 2014; Proba, 2015). These variations in the NAV offices organizational settings can shape service delivery (Jewell & Glaser, 2006), and influence outcomes such as benefit duration for service users. Investigating inter-office variations in service users' outcomes have the potential to reveal unwarranted variations in benefit duration. By identifying variation that cannot be explained by individual-level factors and examining potential office-specific characteristics or organizational practices associated with longer WAA durations, policy makers and practitioners can pinpoint areas requiring interventions. Addressing unwarranted variation can enhance equity and fair treatment in public service delivery, both within and between regions. Additionally, addressing unwarranted variations can lead to improved outcomes for individuals seeking to RTW and potential cost savings.

Methods

Study design and participants

This study applied individual-level data to infer insights to the characteristics of the local NAV offices investigated in this study. The data was obtained from NAV and the official Norwegian register over state paid sickness absence compensations (FD-trygd) (SSB, n.d.-b) and linked using anonymized national identity numbers, enabling us to follow the service users retrospectively through former disability spells. The study encompassed service users associated with seven different NAV offices within the same labour marked region (Nord-Jæren in Norwegian), (*n*= 8,582). We designated the NAV offices from A to G, selecting office F as the reference category based on initial analysis (not shown).

Focusing the study on NAV-offices situated within the same labour and housing market context offered methodological advantages in terms of comparability. Exploring NAV offices within the same geographic zone ensured that all the included offices functioned within the same regional constraints encompassing policy guidelines and governance, employment opportunities, as well as access to healthcare services and educational institutions. This approach mitigates potential confounding factors that could influence WAA duration.

The data utilized in this study is derived from a larger dataset comprising individuals aged 18-67 who had applied for and/ or received WAA between 2015 and 2019 in Rogaland County (*n*= 24,872). For this study, only service users within Nord-Jæren were included (n= 9643). Service users who never disbursed WAA-benefit (n=248), where benefit duration was missing (n=591), and those who received WAA for more than 6 years (n=56) were removed from the sample. Service users turning 67 years during the study period were also removed from the

sample (n= 166). Finally, 8,582 individuals, nested within seven local NAV offices, remained in the sample. The study was approved by The Regional Ethics Committee (REK Vest), August 8th. 2020, (ref: 57610), and granted exemption from confidentiality from NAV (12.05.2020 and 22.04.2021). The data was stored and analysed using the software "Services for Sensitive Data" (TSD, n.d.).

Measures

Outcome variable

The dependent variable in this study is the duration of WAA benefit during the follow-up period, measured in number of calendar months of WAA disbursement. The duration of each WAA spell was computed by considering the first and last month of WAA disbursement. The analyses included a maximum of two WAA disability spells per service user during the follow-up from 2015-2019. In instances where individuals resumed benefit recipiency within 12 months of a previous benefit spell, this was defined as one single spell. The standard maximum duration of WAA benefit during the study period was four-years. Individuals receiving WAA benefit for more than 48 months have been granted exemption from the maximum duration. The use of exemptions from the maximum duration was rather widespread in NAV for individuals who had not returned to work or been granted permanent disability pension within the four-year period (Proba, 2015; Sørbø & Ytterborg, 2015).

Individual and office level characteristics

The analyses were adjusted for variables that are hypothesised to correlate with both benefit duration and office characteristics. The selection of variables was informed by prior studies exploring prognostic factors of sick-leave and work benefit duration (Cornelius et al., 2011; Lane et al., 2022; Steenstra, 2005) and the availability of variables from the providers of the data (NAV and Statistics Norway). We categorize the data into two levels: *individual level* and *office level*. On the *individual level*, sex, country background (coded in two categories, *Norwegian* representing service users with one or two Norwegian born parents, and *other nationality*), age group (18–29, 30–39, 40–49, 50-59, 60-67 years), number of children (no children, one, two, three or more children), employment status and sector (employment sector is coded according to the main categories in the standard Industrial Classification 2007, the category *unemployed* is added for individuals registered with zero working hours (SSB, n.d.-a)), and disability status (encompassing disability pensions granted both before and at end of WAA spell, dichotomised 0/1) were included.

On the *office level*, number of activation programs granted to the service users (including initiation of new activation programs/ not encompassing extensions of programs already granted), centrality of location (ranged according to Statistics Norway's 2018 centrality index (SSB, n.d.-c)), size of the local NAV office (categorized according to number of state employees as "large" (> 40 employees), "medium" (11-40 employees) and "small" (<11employees)), and caseload (calculated by dividing number of service users by number of state employees in 2018 (*Kommunedatabasen*, n.d.)) were included in the analysis. Using number of employees as a measure of size for NAV offices is relatively common in the literature (Fossestøl et al., 2015; Langeland & Galaasen, 2014; Roaldsnes, 2018; Sadeghi & Terum, 2022; Terum & Sadeghi, 2021). In this study we have utilized the categorization previously applied by NAV internal guidelines (Fossestøl et al., 2016).

Statistical Analysis

Statistical analyses were computed using Stata/IC 17.0 for Windows. *First*, to provide an overview of the data we conducted descriptive analysis to examine the distribution of observations and associations (chi-square) between the key predictor, the different local NAV offices, number of activation programs granted, and the individual level variables: sex, country background, age, number of children, employment status and sector, and granted disability pension (Table 1). *Second*, we ran chi-square test between WAA-duration and the above-mentioned variables (Table 2). *Third*, we ran a generalized linear model (GLM) regression

analysis with gamma distribution and log link function. In the linear predictions, only the significant variables from table 1 and 2 were included.

To mitigate collinearity issues, office-level variables were introduced both separately and stepwise in the model specification. The sensitivity tests revealed significant covariance between the key predictor, local NAV office and the office level variables, caseload, office size and centrality of location. This was anticipated given the similarity of the three variables, leading to the omission of these variables from the analysis. Notably, when included separately in the model with the individual level predictors, the activation program variable exhibited a higher R-squared value (R2= 7.33) compared to our key predictor, local-NAV office (R2= 5.53). Furthermore, when both variables, our key predictor, the NAV office, and activation programs, were included in the same model, the R-squared value marginally increased compared to the model encompassing only individual-level variables and the granting of activation programs (R2= 7.55). Finally, post-estimation tests were conducted to calculate the average marginal effects of the predictors on WAA duration, see table 4.

Ethical considerations

This study is a register study encompassing sensitive personal data on approximately 10,000 service users. Since the study relies on secondary data from registers, obtaining individual informed consent was not feasible, which raises ethical concerns regarding individuals' lack of control over how their data is used. To address these concerns, stringent measures have been implemented to ensure data confidentiality. A privacy impact assessment was conducted in collaboration with the Norwegian Data Protection Authority (Datatilsynet) to identify and mitigate potential risks to individuals' privacy. Among the measures taken, special care was taken in the collection and categorization of data to reduce the likelihood of individuals being identifiable. The data was anonymized and de-identified before providing access to the researchers, thereby protecting the privacy of the participants. Furthermore, the data are stored and handled using the TSD (Tjenester for Sensitive Data) system, with access restricted to the three researchers involved in the project. These steps ensure that the highest standards of data protection are maintained.

Results

In total, 8,582 service users received WAA benefits and follow-up services from the seven NAV offices during the five-year follow-up period. Of the service users, 41.0% were male, and 59.0% were female. The sample predominantly comprised Norwegian service users, with 79.8% having one or two Norwegian-born parents. Regarding age distribution, the majority fell into one of three age-groups: 30 – 39 years (20.6%), 40 – 49 years (24.0%), and 50 – 59 years (25.8%). The two age categories, 18 – 29 years (16.3%) and 60 – 67 years (13.3%), encompassed the lowest proportion of service users. The NAV offices varied in terms of office size and location, see table 1 for office overview of the office characteristics.

Upon examination of the key parameter, WAA duration, the distribution showed that the most common benefit duration among service users across the different NAV-offices was "two years", with an average of 23.3% of the service users concluding their WAA benefit period during the second year of the trajectory. Conversely, as expected, the "> five years" category had the fewest number of service users. Notably, it is worth mentioning that 13.7% of the service users ended their WAA spell after the standard four-year maximum duration. As shown in Table 1, the median duration ranged from 2.66 to 3.11 years, and the interquartile range (IQR) remained consistent for all NAV offices (IQR = 2).

Table 1. NAV office characteristics

	Office A	Office B	Office C	Office D	Office E	Office F	Office G
Office size (n= number of employees)	Large (n=88)	Medium (n=27)	Small (n=13)	Large (n=42)	Medium (n=35)	Medium (n=32)	Medium (n=33)
Caseload	40.5	34.5	34.2	31.4	39.7	36.5	24.9
Number of service users	3,251	811	411	1,167	1,230	988	724
Location	Central	Suburban	Suburban	Central	Central	Central	Central

While there were commonalities in benefit duration patterns, with the majority of cases concentrated around the median, inter-office disparities were evident (see table 2). Notably, office G distinguished itself by exhibiting a higher percentage of cases in the "one year" category (24.5%) and a relatively lower percentage of service users ending their WAA spell within the four- (18.0%) and > five-year (10.8%) categories, compared to the remaining offices. Furthermore, office G also had a slightly higher proportion of its service users falling into the oldest age categories (27.6% and 16.9%) than the average across NAV offices (25.8% and 13.3%). As shown in table 3, service users within the two oldest age categories (50-59 and 60-67) had a higher percentage service users exiting the benefit within the "one year" category (26.0% and 20.7%).

Conversely, we observed that office C exhibits the lowest percentage of cases concluding their benefit period within the first year (14.5%), while also having the highest percentage of cases in the "> five year" category (19.7%). Examining the demographics at office C, we noted that it served a slightly higher proportion of more female service users (63.5% compared to the NAV office average of 59.0%). Furthermore, we also found that the office C served a greater percentage of unemployed service users (39.7% compared to the general average 34.5%).

Table 2: Number of cases by NAV office

Office	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**Total**
	3,251	811	411	1,167	1,230	988	724	8,582
	(37.9)	(9.5)	(4.8)	(13.6)	(14.3)	(11.5)	(8.4)	(100.0)
Duration WAA								
1 year	609	164	59	243	282	194	175	1,726
	(19.0)	(20.5)	(14.5)	(21.0)	(23.3)	(19.9)	(24.5)	(20.4)
2 years	719	200	87	260	273	255	177	1,971
	(22.4)	(25.0)	(21.4)	(22.5)	(22.5)	(26.1)	(24.8)	(23.3)
3 years	709	159	92	268	296	236	156	1,916
	(22.1)	(19.9)	(22.6)	(23.2)	(24.4)	(24.2)	(21.9)	(22.6)
4 years	682	178	89	213	211	201	128	1,702
	(21.3)	(22.2)	(21.9)	(18.4)	(17.4)	(20.6)	(18.0)	(20.1)
>5 years	491	100	80	171	151	90	77	1,160
	(15.3)	(12.5)	(19.7)	(14.8)	(12.5)	(9.2)	(10.8)	(13.7)
Median	2.91	2.81	3.11	2.83	2.73	2.73	2,66	2.83
(IQR)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Total	3,210	801	407	1,155	1,213	976	713	8,475
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
								$Chi^2(24) = 85.81$, p =0.000
Gender, service users								
Male	1,344	320	150	476	557	403	272	3,522
	(41.3)	(39.5)	(36.5)	(40.8)	(45.3)	(40.8)	(37.6)	(41.0)
Female	1,907	491	261	691	673	585	452	5,060
	(58.7)	(60.5)	(63.5)	(59.2)	(54.7)	(59.2)	(62.4)	(59.0)

Total	3,251	811	411	1,167	1,230	988	724	8,582
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
								$Chi^2(6) = 17.29$, p =0.008
Age group. Service users								
18 – 29 years	576	106	67	189	232	145	87	1,402
	(17.7)	(13.1)	(16.3)	(16.2)	(18.9)	(14.7)	(12.0)	(16.3)
30 – 39 years	723	145	92	241	255	179	129	1,764
	(22.2)	(17.9)	(22.4)	(20.7)	(20.7)	(18.1)	(17.8)	(20.6)
40 – 49 years	768	194	77	290	291	250	186	2,056
	(23.6)	(23.9)	(18.7)	(24.9)	(23.7)	(25.3)	(25.7)	(24.0)
50 – 59 years	767	258	125	315	286	265	200	2,216
	(23.6)	(31.8)	(30.4)	(27.0)	(23.3)	(26.8)	(27.6)	(25.8)
60 – 67 years	417	108	50	132	166	149	122	1,144
	(12.8)	(13.3)	(12.2)	(11.3)	(13.5)	(15.1)	(16.9)	(13.3)
Total	3,251	811	411	1,167	1,230	988	724	8,582
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
								$Chi^2(24) = 83.84$, p =0.000
Number of children								
No children	1,883	475	227	698	787	613	433	5,116
	(57.9)	(58.6)	(55.2)	(59.8)	(64.0)	(62.0)	(59.8)	(59.6)
1 child	520	131	75	223	182	154	119	1,404
	(16.0)	(16.2)	(18.3)	(19.1)	(14.8)	(15.6)	(16.4)	(16.4)
2 children	526	139	71	160	181	146	114	1,337
	(16.2)	(17.1)	(17.3)	(13.7)	(14.7)	(14.8)	(15.8)	(15.6)
3 children	255	56	28	70	67	65	42	583
	(7.8)	(6.9)	(6.8)	(6.0)	(5.5)	(6.6)	(5.8)	(6.8)
≥ 4 children	67	10	10	16	13	10	16	142
	(2.1)	(1.2)	(2.4)	(1.4)	(1.1)	(1.0)	(2.2)	(1.7)
Total	3,251		411	1,167	1,230	988	724	8,582
	(100.0)	811(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100)
								$Chi^2(24) = 46.58$, p =0.004
Country background								
Norwegian	2,548	701	350	930	966	765	592	6,852
born parents	(78.4)	(86.4)	(85.2)	(79.7)	(78.5)	(77.4)	(81.8)	(79.8)
Other	703	110	61	237	264	223	132	1,730
	(21.6)	(13.6)	(14.8)	(20.3)	(21.5)	(22.6)	(18.2)	(20.2)
Total	3,251	811	411	1,167	1,230	988	724	8,582
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
								$Chi^2(6) = 40.$, p =0.000
Service users' daily rate, WAA benefit								
Not high	3,028	736	376	1,075	1,130	896	658	7,899
	(93.2)	(91.0)	(91.7)	(92.4)	(91.9)	(91.0)	(91.4)	(92.2)
High	221	73	34	88	100	89	62	667
	(6.8)	(9.0)	(8.3)	(7.6)	(8.1)	(9.0)	(8.6)	(7.8)
Total	3,249	809	410	1,163	1,230	985	720	8,566
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
								$Chi^2(6) = 9.36$, p =0.154
Service user's employment status								
Employed	2,119	558	248	756	768	681	492	5,622
	(65.2)	(68.8)	(60.3)	(64.8)	(62.4)	(68.9)	(68.0)	(65.5)
Unemployed	1,132	253	163	411	462	307	232	2,960
	(34.8)	(31.2)	(39.7)	(35.2)	(37.6)	(31.1)	(32.0)	(34.5)
Total	3,251	811	411	1,167	1,230	988	724	8,582
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
								$Chi^2(6) = 21.34$, p =0.002
Granted disability pension								
Not granted	2,116	478	250	760	765	625	386	5,380
	(65.1)	(58.9)	(60.8)	(65.1)	(62.2)	(63.3)	(53.3)	(62.7)
Granted	1,135	333	161	407	465	363	338	3,202
	(34.9)	(41.1)	(39.2)	(34.9)	(37.8)	(36.7)	(46.7)	(37.3)
Total	3,251	811	411	1,167	1,230	988	724	8,582
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
								$Chi^2(6) = 43.91$, p =0.000

Activation programs granted								
Mean	1.06	0.89(2)	0.82	0.93	0.90	0.66	0.89	0.94
(IQR)	(2)		(1)	(2)	(1)	(1)	(1)	(2)
SD	1.22	1.14	1.08	1.23	1.13	1.03	1.17	1.18
								$Chi^2(42) = 164.90, p = 0.000$

***** Percentage of the total is reported in parentheses

Table 3: Number of cases by year

Duration WAA	**1 year**	**2 years**	**3 years**	**4 years**	**+5 years**	**Total**
	1,800	2,018	1,946	1,715	1,162	8,641
	(20.8)	(23.4)	(22.5)	(19.9)	(13.5)	
Gender						
Men	763	851	783	641	439	3,477
	(44.2)	(43.2)	(40.9)	(37.7)	(37.8)	(41.0)
	963	1,120	1,133	1,061	721	4,998
	(55.8)	(56.8)	(59.1)	(62.3)	(62.2)	(59.0)
Total	1,726	1,971	1,916	1,702	1,160	8,475
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
						$Chi^2(4) = 23.82, p = 0.000$
Children						
No children	1,153	1,209	1,150	935	613	5,060
	(66.8)	(61.3)	(60.0)	(54.9)	(52.8)	(59.7)
1 child	252	319	295	310	209	1,385
	(14.6)	(16.2)	(15.4)	(18.2)	(18.0)	(16.3)
2 children	227	267	321	294	210	1,319
	(13.2)	(13.6)	(16.8)	(17.3)	(18.1)	(15.6)
3 children	76	140	121	131	103	571
	(4.4)	(7.1)	(6.3)	(7.7)	(8.9)	(6.7)
4 or more children	18	36	29	32	25	140
	(1.0)	(1.8)	(1.5)	(1.9)	(2.2)	(1.7)
Total	1,726	1,971	1,916	1,702	1,160	8,475
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
						$Chi^2(16) = 94.24, p = 0.000$
Country backgrounds						
Norwegian born parents	1,446	1,585	1,500	1,322	908	6,761
	(83.8)	(80.4)	(78.3)	(77.7)	(78.3)	(79.8)
Other	280	386	416	380	252	1,714
	(16.2)	(19.6)	(21.7)	(22.3)	(21.7)	(20.2)
Total	1,726	1,971	1,916	1,702	1,160	8,475
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
						$Chi^2(4) = 26.54, p = 0.000$
Age group						
18 – 29	289	284	303	289	207	1,372
	(16.7)	(14.4)	(15.8)	(17.0)	(17.8)	(16.2)
30 – 39	302	397	398	368	273	1,738
	(17.5)	(20.1)	(20.8)	(21.6)	(23.5)	(20.5)
40 – 49	330	432	474	450	340	2,026
	(19.1)	(21.9)	(24.7)	(26.4)	(29.3)	(23.9)
50 – 59	448	538	513	443	264	2,206
	(26.0)	(27.3)	(26.8)	(26.0)	(22.8)	(26.0)
60 – 67	357	320	228	152	76	1,133
	(20.7)	(16.2)	(11.9)	(8.9)	(6.6)	(13.4)
Total	1,726	1,971	1,916	1,702	1,160	8,475
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
						$Chi^2(16) = 216.19, p = 0.000$
Service user's employment status						
Employed	1,251	1,323	1,251	1,056	675	5,556
	(72.5)	(67.1)	(65.3)	(62.1)	(58.2)	(65.6)
Unemployed	475	648	665	646	485	2,919
	(27.5)	(32.9)	(34.7)	(38.0)	(41.8)	(34.4)

Total	1,726	1,791	1,916	1,702	1,160	8,475
	(100)	(100)	(100)	(100)	(100)	(100)
					Chi2(4) = 76.02, p =0.000	
Disability pension granted, any grade						
No	993	1,095	1,240	1,215	772	5,315
	(57.5)	(55.6)	(64.7)	(71.4)	(66.6)	(62.7)
yes	733	876	676	487	388	3,160
	(42.5)	(44.4)	(35.3)	(28.6)	(33.5)	(37.3)
Total	1,726	1,971	1,916	1,702	1,160	8,475
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
					$Chi^2(4) = 128,36$ p =0.000	
Activation programs granted						
Mean	0.61	0.82	0.96	1.09	1.31	0.93
(IQR)	(1)	(1)	(2)	(2)	(2)	(2)
SD	1.05	1.11	1.15	1.22	1.28	1.17
					$Chi^2(28) = 415.47$, p=0.000	

We further discovered a significant association between number of activation programs granted and WAA duration ($p < 0.001$). Upon closer examination of the distribution of activation programs in Table 3, we observed an increasing trend in the granting of activation programs, with the highest number typically allocated in the fifth year. On average, users were allocated 0.61 activation programs in the first year (IQR=1), while users in their fifth year on WAA benefit on average receive 1.31 activation programs (IQR 2). Moreover, significant inter-office variations were found in the granting of activation programs across the local NAV offices ($p < 0.001$), see Table 2. Office A stood out for providing the highest average number of activation programs (1.06) to the service users. However, office A also exhibited the highest standard deviation, indicating a relatively wide range in the NAV office practice and distribution of activation programs (SD= 1.22). Conversely, office F showed the lowest mean, with an average of 0.66 activation programs granted per service user, and displayed the lowest standard deviation, indicating a consistent practice related to granting of activation programs (SD= 1.03).

Postestimations

The results from the adjusted analyses and post-estimations (Table 4) revealed a significant association between the local NAV office and the average duration of WAA, even after adjusting for the included variables. Particularly, office C exhibited the highest Average Marginal Effect (AME), with individuals at this office experiencing a noteworthy 4.10-month longer average WAA duration ($p < 0.001$), compared to the reference office (office F) holding all other variables at their means. Receiving follow-up at office A was also associated with having substantially longer WWA duration with an AME of 1.52 months longer WAA duration ($p <0.05$). In contrast, office G showed an AME of -1.06 months indicating a shorter duration, although this effect was not statistically significant ($p = 0.167$). Interestingly, it was observed that the largest (office A) and smallest (office C) NAV-offices exhibited significantly longer WAA durations when compared to the medium-sized reference category, office F Moreover, the number of activation programs granted from the NAV office was associated with longer benefit durations ($p < 0.001$). For each additional activation program granted, the average WAA duration increased with 2.19 months, holding all other variables at their means.

Table 4: Average marginal effects of key predictors on WAA duration in months

Duration WAA	**dy/dx***	**Std. err.**	**z**	**p**	**95 confidence interval**	
Gender (reference = Men)						
Woman	2.50	0.39	6.4	0.000	1.73	3.28
Country background (ref. = Norwegian born parents)						
Other country background	1.36	0.47	2.90	0.004	0.44	2.29
Age (ref. = 18-29 years)						

30 – 39 years	0.61	0.63	1.0	0.330	-0.62	1.85
40 – 49 years	1.94	0.66	2.96	0.003	0.65	3.23
50 – 59 years	0.19	0.60	0.32	0.749	-0.98	1.36
60 – 67 years	-4.81	0.63	-7.69	0.000	-6.04	-3.59
Number of Children						
(ref. = no children)						
1 child	0.86	0.52	1.65	0.099	-0.16	1.88
2 children	1.71	0.58	2.96	0.003	0.58	2.83
3 children	2.17	0.80	2.70	0.007	0.59	3.74
4 or more children	0.57	1.43	0.40	0.689	-2.23	3.37
Employment sector						
(ref. = sales) **						
Unemployed	1.67	0.68	2.48	0.013	0.35	3.00
Mining and quarrying	-4.10	0.99	-4.16	0.000	-6.04	-2.17
Industry	-1.99	1.00	-1.99	0.046	-3.94	-0.03
Information and communication	-3.19	1.57	-2.03	0.042	-6.27	-0.11
Financial and insurance activities	-4.46	2.18	-2.05	0.041	-8.72	-0.19
Public administration and defence	-3.37	1.25	-2.70	0.007	-5.81	-0.93
Education	-2.96	0.92	-3.20	0.001	-4.77	-1.50
Human health and social work activities	-2.82	0.71	-3.94	0.000	-4.22	-1.42
Art, entertainment, and recreation	-3.28	1.76	-1.86	0.062	-6.74	0.17
Other service activities	-3.47	1.41	-2.45	0.014	-6.24	-0.70
Granted disability pension						
(ref. = no pension)						
	-3.40	0.38	-8.84	0.000	-.4.16	-2.65
R-squared (in %)	5.09					
Number of observations	8,582					
Local NAV Office						
(reference = office F)						
Office A	2.26	0.58	3.9	0.000	1.12	3.40
Office B	1.29	0.76	1.7	0.090	-0.20	2.79
Office C	4.27	1.02	4.18	0.000	2.27	6.28
Office D	1.21	0.69	1.75	0.080	-0.14	2.57
Office E	-0.08	0.67	-0.13	0.900	-1.39	1.23
Office G	-0.35	0.76	-0.45	0.650	-1.84	1.15
Gender (ref.= Men)						
Woman	2.43	0.39	6.15	0.000	1.65	3.20
Country background						
(ref. = Norwegian born parents)						
Other country background	1.40	0.47	2.97	0.003	0.47	2.32
Age (ref. = 18-29 years)						
30 – 39 years	0.66	0.63	1.05	0.293	-0.57	1.90
40 – 49 years	2.12	0.66	3.22	0.001	0.83	3.41
50 – 59 years	0.22	0.60	0.37	0.713	-0.95	1.39
60 – 67 years	-4.78	0.62	-7.65	0.000	-6.00	-3.55
Number of Children						
(ref. = no children)						
1 child	0.77	0.52	1.47	0.141	-0.25	1.78
2 children	1.55	0.57	2.7	0.007	0.42	2.68
3 children	1.97	0.80	2.46	0.014	0.40	3.54
4 or more children	0.27	1.42	0.19	0.847	-2.50	3.05
Employment sector						
(ref. = sales) **						
Unemployed	1.84	0.67	2.74	0.006	0.52	3.16
Mining and quarrying	-3.73	0.99	-3.77	0.000	-5.67	-1.79
Information and communication	-3.05	1.57	-1.95	0.051	-6.12	0.02
Public administration and defence	-3.16	1.25	-2.54	0.011	-5.60	-0.72
Education	-2.67	0.92	-2.89	0.004	-4.48	-0.86
Human health and social work activities	-2.52	0.71	-3.53	0.000	-3.92	-1.12

Other service activities	-3.20	1.42	-2.26	0.024	-5.98	-0.43
Granted disability pension (ref. = no pension)						
	-3.35	0.39	-8.68	0.000	-4.10	-2.59
R-squared (in %)	5.61					
Number of observations	8,582					
Local NAV Office (reference = office F 1164)						
Office A	1.52	0.59	2.58	0.010	0.36	2.68
Office B	0.68	0.77	0.89	0.373	-0.82	2.19
Office C	4.10	1.04	3.96	0.000	2.07	6.13
Office D	0.72	0.70	1.02	0.306	-0.65	2.08
Office E	-0.53	0.68	-0.78	0.437	-1.85	0.80
Office G	-1.06	0.77	-1.38	0.167	-2.56	0.44
Gender (ref. = Men)						
Woman	2.56	0.39	6.49	0.000	1.79	3.33
Country background (ref. = Norwegian born parents)						
Other country background	1.39	0.47	2.96	0.003	0.47	2.31
Age (ref. 18-29 years)						
30 – 39 years	1.30	0.62	2.11	0.035	0.09	2.50
40 – 49 years	3.24	0.65	4.97	0.000	1.96	4.51
50 – 59 years	1.60	0.60	2.68	0.007	0.43	2.77
60 – 67 years	-3.02	0.63	-4.75	0.000	-4.26	-1.77
Number of Children (ref. = no children)						
1 child	0.66	0.52	1.28	0.201	-0.35	1.68
2 children	1.46	0.57	2.54	0.011	0.34	2.59
3 children	1.70	0.80	2.13	0.033	0.14	3.25
4 or more children	0.25	1.42	0.18	0.859	-2.52	3.03
Employment sector (ref. = sales) **						
Mining and quarrying	-3.24	1.00	-3.24	0.001	-5.21	-1.28
Education	-1.94	0.94	-2.06	0.039	-3.79	-0.10
Human health and social work activities	-2.18	0.72	-3.04	0.002	-3.58	-0.77
Other service activities	-2.89	1.43	-2.02	0.043	-5.69	-0.09
Granted disability pension (ref. = no pension)						
	-2.94	0.39	-7.63	0.000	-3.70	-2.19
Number of activation programs granted (ref. = no activation programs granted)	2.19	0.17	12.99	0.000	1.86	2.52
R-squared (in %)	7.36					
Number of observations	8,582					

* The dy/dx column represents the average marginal effect of each variable on the dependent variable, calculated with other variables held at their means

**Average marginal effects for employment sector variables that are not statistically significant at the 10% level or better are not reported

We also discovered that several individual-level predictor variables significantly affected WAA duration. Gender emerged as a significant factor, with women experiencing an average 2.56 month longer WAA duration compared to men ($p < 0.001$), highlighting gender-related disparities within the sample. Age was another influential factor. Notably, individuals in the "60 – 67 years" age category had an average -3.02-month shorter WAA duration ($p < 0.001$), compared to the reference category ("18-29 years"). The "40 – 49 years" age group also exhibited a significant influence, with an average AME of 3.24 months longer WAA duration

($p < 0.001$). The number of children also affected benefit duration. Service users with 2 (AME +1.46 months, $p < 0.05$) or 3 (AME +1.70 months, $p < 0.05$) children tended to have longer WAA durations, compared to individuals with no children. Employment status was also associated with WAA duration. Before adjusting for number of activation programs, unemployed service users had an AME of +1.84 months ($p < 0.05$), signifying longer WAA durations compared to employed individuals. However, employment status was no longer significant when adjusting for number of activation programs. Additionally, service users with a granted disability pension experienced significantly shorter WAA durations (AME = -2.94, $p < 0.001$), and those with a country background other than Norwegian-born exhibited longer benefit durations (AME = 1.39, $p < 0.001$).

Discussion

This study revealed significant variations in Work Assessment Allowance (WAA) duration among NAV offices operating within the same labour and housing market context. These variations persisted when adjusting for a range of relevant individual variables, indicating a significant association between NAV-office affiliation and service users WAA benefit duration. Particularly, among the seven NAV offices studied, both the largest (office A) and smallest (office C) offices demonstrated statistically significant associations with WAA duration in the adjusted model, holding all other variables at their means. Office C showed the highest average marginal effects (AME), with an average of 4.10 month longer WAA duration ($p < 0.001$) compared to the medium-sized reference office (F). Meanwhile, office A showed an AME of 1.52 months longer WAA duration ($p < 0.05$), compared to office F.

The substantial inter-office variations in WAA duration among highly comparable NAV offices, which persist when adjusting for individual variables, suggest the presence of unwarranted variation in service users WAA duration. While our aim was to explore potential variations in benefit duration with the local NAV office as our key predictor, it was not possible to disentangle the potential influence of office characteristics, such as office size, caseload, and centrality of location from the NAV office itself in our regression model. However, we did observe that the size of the local NAV-office appears to be an important factor in our results.

A notable proportion of service users exceeded the standard maximum duration of four years (13.7%). This finding aligns with previous research that has noted prolonged benefit periods in the WAA program (Mandal et al., 2015; Proba, 2015; Sørbø & Ytterborg, 2015). Additionally, evaluations of the WAA program have indicated that inadequate follow-up and capacity issues at NAV offices have led to service users' work capacity not being determined within the standard four year benefit period (Mandal et al., 2015; Proba, 2015).

Internationally, service user's experiences of workers compensation claims process have been found to predict benefit duration (Collie et al., 2019), and factors such as prolonged case processing time in workers compensation claims have been associated with negative perceptions of the RTW-process and lower odds of RTW for service users (Cocker et al., 2018; Collie et al., 2019; Sinnott, 2009). Interestingly, the largest NAV office (office A) and the smallest office (office C) exhibited the highest proportion of service users ending their WAA spell in the four-year and >five-year categories.

Previous research within the Norwegian context has identified characteristics related to the size of the local NAV office as important for service provision (Fossestøl et al., 2016; Langeland & Galaasen, 2014; Proba, 2015; Roaldsnes, 2018). Larger NAV offices have been associated with greater caseloads, larger administrative burdens, and more organization and workflow challenges (Fossestøl et al., 2016; Langeland & Galaasen, 2014). Smaller NAV-offices are found to be less susceptible to challenges associated with large caseloads. However, advisors in smaller offices often serve as generalists, providing guidance to service users across multiple benefit areas. These generalist advisors typically face difficulties accessing professional environments and may also have a limited expertise regarding the legal regulations of the WAA program compared to specialised advisors employed in larger NAV-offices (Proba, 2015; Prop. 74L, 2016).

Employees in NAV typically hold a three-year higher education degree as a minimum requirement for employment (Sadeghi & Fekjær, 2019). While about one-third of NAV's workforce has a background in social work, it is also common to have backgrounds in e.g., economics, administration, and law (Sadeghi & Fekjær, 2019). NAV advisors' educational background can play an important role in shaping perspectives on work capacity and advisors alignment with policy goals related to labour market orientation (Sadeghi & Fekjær, 2019).

The lack of a uniform educational background in NAV may contribute to unwarranted variations in advisor's practices and service delivery as the absence of a shared knowledgebase can lead to diverse interpretations and implementation of public service delivery (Van Berkel & Van Der Aa, 2012). For many conditions there exist conflicting or insufficient evidence regarding which measures that best promote RTW. This underscores the importance of advisor's perspectives and beliefs in guiding their interactions with service users and other stakeholders in the RTW process. Non-specific musculoskeletal disorders represent a case where the absence of clear evidence can impact follow-up efforts. Løchting (2020) found that NAV advisors experienced increased complexity and challenges in facilitating RTW for individuals sick-listed due to non-specific musculoskeletal disorders.

NAV advisors' perceptions of users' work capacity and their beliefs about what promotes good health for service users facing health challenges, might also influence activation timing and practices, including advisors' selection of service users for activation. Previous studies within the Scandinavian context have indicated that the practices of social insurance offices regarding the selection of users for interventions (Ahlgren A. et al., 2008), the timing of interventions, and the use of different types of interventions (Markussen & Røed, 2014) can influence users' outcomes. Aligning with previous research from the Swedish sickness insurance context (Ahlgren A. et al., 2008; Ahlgren et al., 2005; Marklund et al., 2015), our study observed that the majority of activation programs were allocated during the later stages of the WAA trajectory. Additionally, that the largest NAV office, office A, on average consistently granted a significantly higher number of activation programs and experienced longer average WAA spells. While, office F, on average allocating the fewest activation programs, had notably shorter WAA spells.

In the Norwegian context, delayed implementation of activation measures have commonly been attributed to resource constraints and large caseloads (Proba, 2015; Prop. 74L, 2016). However, in their study of individualization of activation services in NAV, Terum and Sadeghi (2021) surprisingly found no direct relationship between office size and NAV advisors' reported individualization of activation services. The study underscores that caseload alone may not fully reflect advisor's workload and that workload perception is influenced by individual preferences and work approaches, impacting employees' experiences and interactions with service users.

The observed variations in WAA duration and activation practices in our study, emphasizes the importance of further exploring both the effectiveness of activation programs on service users' outcomes and the contextual factors influencing their implementation. In our analysis, the goodness of fit (R-squared, R2 (in %) = 7.36) indicates relatively low explanatory power. It's important to acknowledge that the duration of WAA benefit and NAV advisors' selection to the activation programs is likely influenced by numerous factors not considered in our study. Nevertheless, we observed substantial variations in benefit duration among WAA recipients across NAV offices operating within a shared labor and housing market.

Uncovering unwarranted inter-office variations represents an important opportunity for improving the quality and efficiency of service delivery, especially since practices at the local level can be relatively easily adapted and improved when knowledge is provided on factors contributing to extended benefit durations (Collie et al., 2016). For example, outcome monitoring in mental health services in England revealed substantial between-service variation, with organizational features predicting these outcomes, and improving these organizational aspects led to enhanced outcomes (Clark et al., 2018).

The results of this and similar studies can have direct relevance for practices both within and outside the Nord-Jæren region, and potentially for similar social insurance contexts, such as Sweden and Denmark. By identifying office characteristics or organizational practices associated with longer WAA duration, this research has the potential to inform policy and

practice adjustments and potentially ensure more efficient allocation of resources. Additionally, investigating the impact of NAV office size on service delivery, both locally and nationally, holds potential for further exploration. Notably, our study found that the largest and smallest NAV offices exhibited significantly longer WAA durations compared to the medium-sized reference category. Further studies are needed to elaborate the drivers of these variations.

Strengths and limitations

This study's main strength is that it is based on a large, longitudinal, and representative dataset formed by merging several data sources. Another strength is that all the participants and NAV offices belong to the same housing and labour market. Additionally, the aggregation of individual-level data allows us for the identification of trends at the broader office level. However, our study is limited by the availability of variables in the administrative data sets made available by statistics Norway and NAV. There are likely a range of other factors that would influence WAA duration, but which we are unable to assess. Notably, the absence of service users' medical diagnosis and education level is a significant limitation. Without information on medical diagnoses, we cannot account for the specific health conditions influencing individuals' return to work outcomes. Similarly, lacking data on education level prevents us from being able to conduct intersectional analyses that could reveal how socioeconomic factors interact with other variables in influencing benefit duration (Haukenes et al., 2019). Moreover, it is possible that the service users within the same NAV office share unobserved characteristics unrelated to the local NAV office. Therefore, attributing the observed differences solely to the influence of the NAV offices risks the ecological fallacy, as numerous observable and unobservable factors may impact benefit duration.

Conclusion

We found significant and substantial variations in service user's WAA duration across seven local NAV offices within the same labor and housing market context. These variations persisted even after adjusting for a range of relevant individual-level variables. While residual confounding cannot be ruled out, this finding suggests that affiliation with a particular NAV office significantly influences the duration of service user's WAA benefit. Importantly, our study finds that both the largest and smallest NAV offices exhibit longer WAA durations compared to medium-sized offices, pointing to potential inefficiencies in service delivery and unwarranted variations in service users' outcomes.

These findings may be valuable for similar administrative contexts across other regions or countries, underscoring the need for further investigations into the underlying mechanisms driving these differences in WAA duration. By understanding and addressing unwarranted variations, we can inform relevant policy and practice adjustments that promote efficiency, quality and equity of public service delivery.

Conflicts of Interest

No conflict of interest.

References

Ahlgren A., Bergroth A., Ekholm J., & Ekholm K.S. (2008). Selection of clients for vocational rehabilitation at six local social insurance offices: A combined register and questionnaire study on rehabilitation measures and attitudes among social insurance officers. *Journal of Rehabilitation Medicine*, *40*(3), 178–184. https://doi.org/10.2340/16501977-0157

Ahlgren, A., Broman, L., Bergroth, A., & Ekholm, J. (2005). Disability pension despite vocational rehabilitation? A study from six social insurance offices of a county: *International Journal of Rehabilitation Research*, *28*(1), 33–42. https://doi.org/10.1097/00004356-200503000-00005

Christensen, T., & Lægreid, P. (2011). Complexity and Hybrid Public Administration—Theoretical and Empirical Challenges. *Public Organization Review*, *11*(4), 407–423. https://doi.org/10.1007/s11115-010-0141-4

Cocker, F., Sim, M. R., Kelsall, H., & Smith, P. (2018). The Association Between Time Taken to Report, Lodge, and Start Wage Replacement and Return-to-Work Outcomes. *Journal of Occupational & Environmental Medicine*, *60*(7), 622–630. https://doi.org/10.1097/JOM.0000000000001294

Collie, A., Lane, T. J., Hassani-Mahmooei, B., Thompson, J., & McLeod, C. (2016). Does time off work after injury vary by jurisdiction? A comparative study of eight Australian workers' compensation systems. *BMJ Open*, *6*(5), e010910. https://doi.org/10.1136/bmjopen-2015-010910

Collie, A., Sheehan, L., Lane, T. J., Gray, S., & Grant, G. (2019). Injured worker experiences of insurance claim processes and return to work: A national, cross-sectional study. *BMC Public Health*, *19*(1), 927. https://doi.org/10.1186/s12889-019-7251-x

Cornelius, L. R., Van Der Klink, J. J. L., Groothoff, J. W., & Brouwer, S. (2011). Prognostic Factors of Long Term Disability Due to Mental Disorders: A Systematic Review. *Journal of Occupational Rehabilitation*, *21*(2), 259–274. https://doi.org/10.1007/s10926-010-9261-5

DREAM. (n.d.). Udvikling af økonomiske modeller. Analyser af dansk økonomi. Beslutninger baseret på data. Retrieved August 31, 2024, from https://dreamgruppen.dk/

Forløpsdatabasen-Trygd. (2002, June 18). ssb.no. https://www.ssb.no/sosiale-forhold-og-kriminalitet/artikler-og-publikasjoner/forlopsdatabasen-trygd

Fossestøl, K., Breit, E., Andreassen, T. A., & Klemsdal, L. (2015). Managing Institutional complexity in public sector reform: Hybridization in front-line service organizations. *Public Administration*, *93*(2), 290–306. https://doi.org/10.1111/padm.12144

Fossestøl, K., Breit, E., & Borg, E. (2016). Hvorfor lykkes ikke NAV-kontorene med å jobbe mer arbeidsrettet? *Søkelys på arbeidslivet*, *33*(1–02), 5–23. https://doi.org/10.18261/issn.1504-7989-2016-01-02-01

Frøyand, K., Schafft, A., & Spjekavik, Ø. (2018). Tackling increasing marginalization: Can support-side approaches contribute to work inclusion. In *Work and Wellbeing in the Nordic Countries* (1st Edition, p. 22). Routledge.

Gjesdal, S., & Bratberg, E. (2003). Diagnosis and duration of sickness absence as predictors for disability pension: Results from a three-year, multi-register based* and prospective study. *Scandinavian Journal of Public Health*, *31*(4), 246–254. https://doi.org/10.1080/14034940210165154

Gray, S. E., Lane, T. J., Sheehan, L., & Collie, A. (2019). Association between workers' compensation claim processing times and work disability duration: Analysis of population level claims data. *Health Policy*, *123*(10), 982–991. https://doi.org/10.1016/j.healthpol.2019.06.010

Hakvaag, T. C., Knapstad, M., Bjornestad, J. R., & Tjora, T. (2022). A scooping review of Scandinavian studies of sick-listed' and social insurance officers' experiences of their encounters'. *Social Policy & Administration*, *56*(4), 543–692. https://doi.org/10.1111/spol.12796

Haukenes, I., Löve, J., Hensing, G., Knudsen, A. K., Øverland, S., Vahtera, J., Sivertsen, B., Tell, G. S., & Skogen, J. C. (2019). Inequity in disability pension: An intersectional analysis of the co-constitution of gender, education and age. The Hordaland Health Study. *Critical Public Health*, *29*(3), 302–313. https://doi.org/10.1080/09581596.2018.1469730

Hultin, H., Lindholm, C., & Möller, J. (2012). Is There an Association between Long-Term Sick Leave and Disability Pension and Unemployment beyond the Effect of Health Status? – A Cohort Study. *PLOS ONE*, *7*(4), e35614. https://doi.org/10.1371/journal.pone.0035614

Jewell, C. J., & Glaser, B. E. (2006). Toward a General Analytic Framework: Organizational Settings, Policy Goals, and Street-Level Behavior. *Administration & Society*, *38*(3), 335–364. https://doi.org/10.1177/0095399706288581

Klein, J., Reini, K., & Saarela, J. (2021). Sickness Absence and Disability Pension in the Very Long Term: A Finnish Register-Based Study With 20 Years Follow-Up. *Frontiers in Public Health*, *9*, 556648. https://doi.org/10.3389/fpubh.2021.556648

Kommunedatabasen. (n.d.). Retrieved August 20, 2024, from https://kommunedatabasen.sikt.no/

Lane, T. J., Sheehan, L., Gray, S., & Collie, A. (2022). Regional Differences in Time Off Work After Injury: A Comparison of Australian States and Territories Within A Single Workers' Compensation System. *Journal of Occupational Rehabilitation*, *32*(2), 252–259. https://doi.org/10.1007/s10926-020-09947-2

Langeland, S., & Galaasen, A. M. (2014). Oppfølgningsarbeidet i NAV under lupen: Strekker ressursene til? *Arbeid Og Velferd*, *1*, 64–77.

Lippel, K. (2007). Workers describe the effect of the workers' compensation process on their health: A Québec study. *International Journal of Law and Psychiatry*, *30*(4–5), 427–443. https://doi.org/10.1016/j.ijlp.2007.06.013

Løchting, I., Grotle, M., Storheim, K., Foldal, V., Standal, M. I., Fors, E. A., & Eik, H. (2020). Complex return to work process – caseworkers' experiences of facilitating return to work for individuals on sick leave due to musculoskeletal disorders. *BMC Public Health*, *20*(1), 1822. https://doi.org/10.1186/s12889-020-09804-0

Loisel, P., Buchbinder, R., Hazard, R., Keller, R., Scheel, I., Van Tulder, M., & Webster, B. (2005). Prevention of Work Disability Due to Musculoskeletal Disorders: The Challenge of Implementing Evidence. *Journal of Occupational Rehabilitation*, *15*(4), 507–524. https://doi.org/10.1007/s10926-005-8031-2

Lund, T., Kivimaki, M., Labriola, M., Villadsen, E., & Christensen, K. B. (2008). Using administrative sickness absence data as a marker of future disability pension: The prospective DREAM study of Danish private sector employees. *Occupational and Environmental Medicine*, *65*(1), 28–31. https://doi.org/10.1136/oem.2006.031393

MacEachen, E., Kosny, A., Ferrier, S., & Chambers, L. (2010). The "Toxic Dose" of System Problems: Why Some Injured Workers Don't Return to Work as Expected. *Journal of Occupational Rehabilitation*, *20*(3), 349–366. https://doi.org/10.1007/s10926-010-9229-5

Mandal, R., Ofte, H. J., Jensen, C., & Ose, S. O. (2015). *Hvordan fungerer arbeidsavklaringspenger (AAP) som ytelse og ordning? Et samarbeidsprosjekt mellom SINTEF og Nasjonalt kompetansesenter for arbeidsretta rehabilitering.* Sintef. https://www.sintef.no/publikasjoner/publikasjon/1280167/

Marklund, S., Lundh, G., Gustafsson, K., Linder, J., Svedberg, P., & Alexanderson, K. (2015). The actions of the social insurance agency regarding long-term sickness absentees before and after a medical assessment – a study of 384 case files. *Disability and Rehabilitation*, *37*(18), 1683–1691. https://doi.org/10.3109/09638288.2014.976716

Markussen, S., & Røed, K. (2014). The impacts of vocational rehabilitation. *Labour Economics*, *31*, 1–13. https://doi.org/10.1016/j.labeco.2014.08.001

NAV. (n.d.-a). *Opplæring*. nav.no. Retrieved June 25, 2024, from https://www.nav.no/opplaring

NAV. (n.d.-b). *Work assessment allowance (AAP)*. Retrieved March 27, 2022, from https://www.nav.no/en/home/benefits-and-services/relatert-informasjon/work-assessment-allowance-aap

OECD. (2019). *OECD Economic Surveys: Norway 2019*. OECD Publishing. https://doi.org/10.1787/c217a266-en.

Pedersen, A. W., & Kuhnle, S. (2017). The Nordic welfare state model. In O. Knutsen (Ed.), *The Nordic models in political science: Challenged, but still viable?* (pp. 249–272). Fagbokforlaget.

Proba. (2015). *Klage- og påvirkningsmuligheter for søkere og mottakere av AAP* (2015–03). https://proba.no/wp-content/uploads/proba-rapport-2015-03-klage-og-pavirkningsmuligheter-for-sokere-og-mottakere-av-aap1.pdf

Prop. 74L. (2016). *Endringer i folketrygdeloven mv. (Arbeidsavklaringspenger og tilleggsstønader til arbeidsrettede tiltak mv.)*. Arbeids og sosialdepartementet.

https://www.regjeringen.no/contentassets/6f90bde1792d4cc9bae01194837f7bf5/no/pdfs/prp201620170074000dddpdfs.pdf

Roaldsnes, A. (2018). NAVs hovedmål sett fra NAV-kontoret. En kvantitativ analyse av overgang til arbeid. *Arbeid Og Velferd*, *1*, 57–80.

Sadeghi, T., & Fekjær, S. B. (2019). Frontline workers' competency in activation work. *International Journal of Social Welfare*, *28*(1), 77–88. https://doi.org/10.1111/ijsw.12320

Sadeghi, T., & Terum, L. I. (2022). Dedication to work: Social workers in a Norwegian activation work context. *European Journal of Social Work*, *26*(3), 532–546. https://doi.org/10.1080/13691457.2022.2063812

Sinnott, P. (2009). Administrative Delays and Chronic Disability in Patients With Acute Occupational Low Back Injury. *Journal of Occupational & Environmental Medicine*, *51*(6), 690–699. https://doi.org/10.1097/JOM.0b013e3181a033b5

Sørbø, J., & Ytterborg, H. (2015). Arbeidsavklaringspenger: Hva har skjedd med de som har passert fire år? *Arbeid Og Velferd*, *3*, 123–133.

SSB. (n.d.-a). *Classification of Standard Industrial Classification*. Retrieved December 7, 2023, from https://www.ssb.no/klass/klassifikasjoner/6

SSB. (n.d.-b). *FD-trygd*. SSB. Retrieved May 23, 2022, from https://www.ssb.no/en/data-til-forskning/utlan-av-data-til-forskere/variabellister/fd-trygd

SSB. (n.d.-c). *Ny sentralitetsindeks for kommunene*. ssb.no. Retrieved September 9, 2022, from https://www.ssb.no/befolkning/artikler-og-publikasjoner/ny-sentralitetsindeks-for-kommunene

Statistikmyndigheten SCB. (n.d.). Statistikmyndigheten SCB. Retrieved August 31, 2024, from https://www.scb.se/

Steenstra, I. A. (2005). Prognostic factors for duration of sick leave in patients sick listed with acute low back pain: A systematic review of the literature. *Occupational and Environmental Medicine*, *62*(12), 851–860. https://doi.org/10.1136/oem.2004.015842

Terum, L. I., & Sadeghi, T. (2021). Hva gjør individuell tilpasning av aktivitetskrav utfordrende?: En studie av veiledere ved lokalkontorene i Nav. *Søkelys på arbeidslivet*, *38*(1), 41–58. https://doi.org/10.18261/issn.1504-7989-2021-01-03

Thomas, C. (2005). Employment transitions and mental health: An analysis from the British household panel survey. *Journal of Epidemiology & Community Health*, *59*(3), 243–249. https://doi.org/10.1136/jech.2004.019778

TSD. (n.d.). *Services for sensitive data (TSD)*. Services for Sensitive Data (TSD). Retrieved May 23, 2022, from https://www.uio.no/english/services/it/research/sensitive-data/index.html

Van Berkel, R., & Van Der Aa, P. (2012). Activation Work: Policy Programme Administration or Professional Service Provision? *Journal of Social Policy*, *41*(3), 493–510. https://doi.org/10.1017/S0047279412000062

Waddell, G., Burton, A. K., Great Britain, & Department for Work and Pensions. (2006). *Is work good for your health and well-being?* The Stationary Office.https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/214326/hwwb-is-work-good-for-you.pdf