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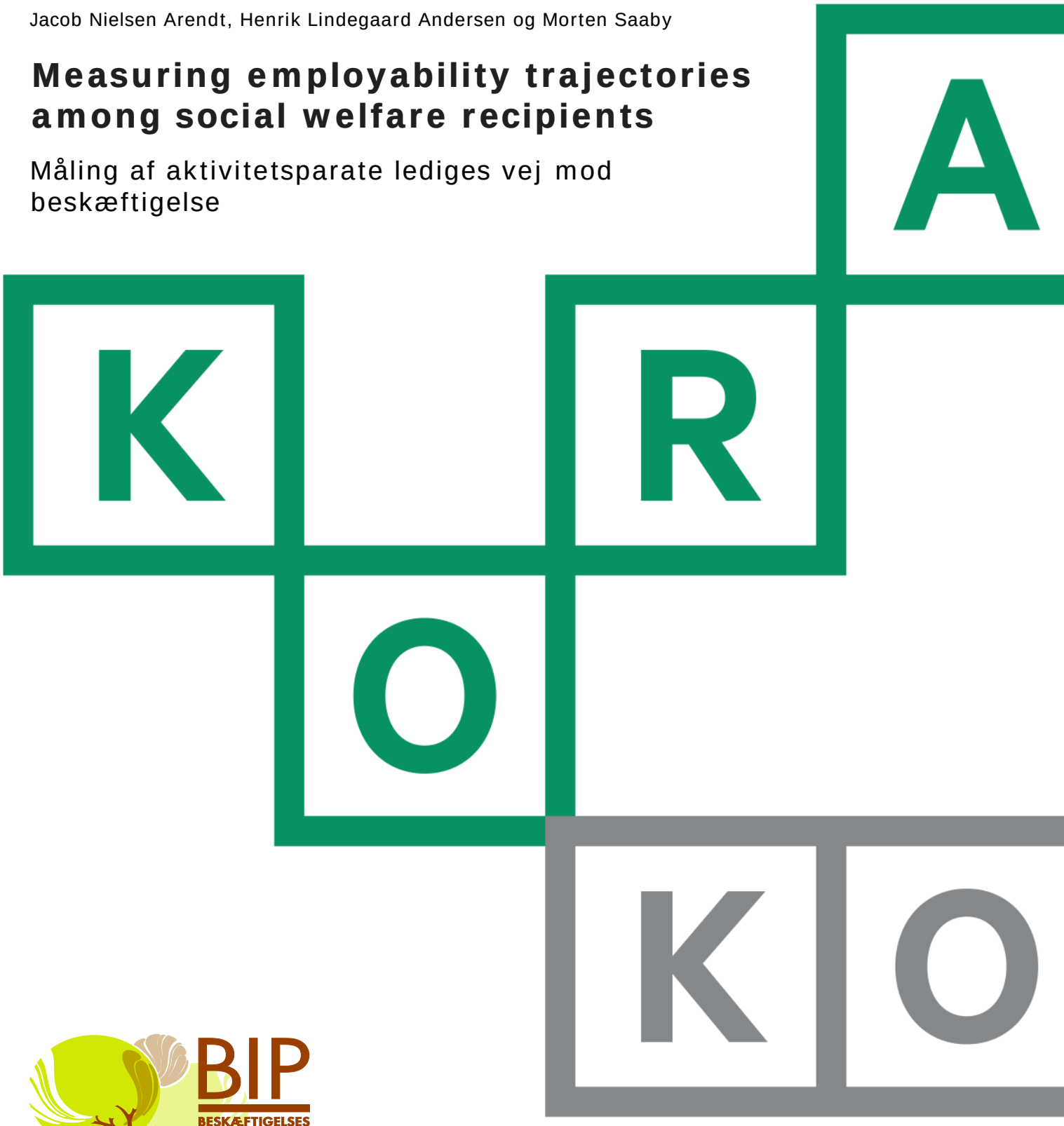
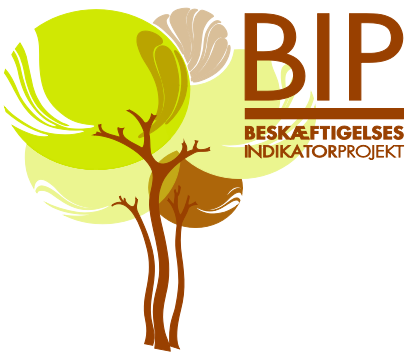
Measuring employability trajectories among social welfare recipients

Måling af aktivitetsparate lediges vej mod beskæftigelse





Det Nationale Institut
for Kommuners og Regioners
Analyse og Forskning

Measuring employability trajectories among social welfare recipients – Måling af aktivitetsparate lediges vej mod beskæftigelse

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Analyse og Forskning

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Forord

Denne rapport omhandler måling af arbejdsmarkedsparathed. Mange forskellige faktorer har formentlig indvirkning på, om ledige er parate til at komme i job, men der findes forbavsende få empiriske analyser, der forsøger at indkredse, hvordan det kan måles. Det til trods for, at et godt måleredskab formentlig både kan bruges direkte i arbejdet med aktivitetsparate ledige, hvor vejen mod job kan være lang, og kan være et mere fintmasket redskab til at måle effekter af indsatser for aktivitetsparate ledige end den sjældne og langsigtede beskæftigelseseffekt. Rapporten indeholder et af de første danske forsøg på at konstruere progressionsmål og på at bruge dem til at måle effekten af aktivering. Rapporten er skrevet på engelsk, så den kan supplere den sparsomme internationale litteratur, men er forsynet med en omfattende dansk sammenfatning.

Vi takker Væksthuset for muligheden for at bruge data fra BeskæftigelsesIndikatorProjektet og for konstruktiv dialog i forhold til fortolkning af data. Tak også til Leena Eskelinen og to eksterne reviewere for konstruktive kommentarer til rapporten.

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Sammenfatning

Baggrund

Ledige med problemer ud over ledighed har en lav afgangsrate til beskæftigelse eller uddannelse, og vores viden om, hvilke indsatser der kan hjælpe dem i job eller uddannelse, er sparsom (se fx Arendt 2014; Eplov & Korsbek 2012). Således var kun 10 % af de aktivitetsparate kontanthjælpsmodtagere, der i 2014 deltog i en beskæftigelsesindsats, kommet i job 1 år efter (jobindsats.dk).

Men selvom aktivitetsparate ledige ikke nødvendigvis kommer i job eller begynder på en uddannelse, fx efter deltagelse i flere beskæftigelsestilbud, kan de alligevel have gjort fremskridt på forhold, der er vigtige for at finde et job. Med andre ord kan de have øget deres arbejdsmarkedsevne eller arbejdsmarkedsparathed.

Der findes teoretisk litteratur om arbejdsmarkedsparathed, der bl.a. fokuserer på lediges tilpasningsevne (fx Ashford & Taylor 1990; Fugate m.fl. 2004). Emnet er heller ikke nyt i dansk sammenhæng, hvor fx Madsen m.fl. (2006) har afdækket kommunernes arbejde med begrebet; New Insight (2010) har afdækket metoder til at screene og arbejde med ikke-arbejdsmarkedsparate, og Graversen (2011) har gennemgået forskellige metoder til at måle arbejdsmarkedsparathed. På trods af vigtigheden af at kunne arbejde med og dokumentere en sådan fremgang er den empiriske litteratur om arbejdsmarkedsparathed derimod stærkt begrænset. I en litteraturgennemgang har KORA for nylig identificeret 24 studier, der afdækker mulige indikatorer for arbejdsmarkedsparathed, ved at beskrive, om indikatorerne forudsiger senere muligheder for at komme i job (Arendt & Jacobsen 2017). Ingen af disse studier ser på, om *ændringer* over tid i arbejdsmarkedsparathedsindikatorer udviser en sammenhæng med sandsynligheden for at komme i beskæftigelse, som vi mener, må være omdrejningspunktet, når vi taler om muligheder for at måle *progression*.

Væksthuset[1] har finansieret Beskæftigelses Indikator Projektet (BIP)[2], som er et praksisforskningsprojekt mellem 10 jobcentre og et ekspertpanel bestående af forskere og praktikere. Væksthusets Forskningscenter har varetaget projektledelsen. Formålet med projektet er at udvikle værktøjer til at kvalitetssikre og evaluere effekten af beskæftigelsesindsatsen, samtidig med at det kan gavne beskæftigelsesmedarbejdernes arbejde med de ledige. På baggrund af en litteraturindsamling og et omfattende arbejde mellem praktikere og forskere er der i projektet udviklet et spørgeskema med 9 spørgsmål til ledige og 11 spørgsmål til den lediges sagsbehandler, med det formål at afdække den lediges styrker og svagheder i forhold til at få job[3]. Spørgeskemaet indeholder derfor 20 indikatorer for arbejdsmarkedsparathed. Skemaerne er udfyldt for ca. 4.000 aktivitetsparate borgere på kontanthjælp, af borgerens sagsbehandler og den ledige selv. Spørgeskemaerne er indsamlet cirka kvartalsvis fra ultimo 2012 til og med udgangen af 2016, hvilket både i dansk og international sammenhæng er unikt.

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1 Væksthuset er en socialøkonomisk virksomhed med ekspertise i arbejdet med udsatte ledige. Væksthuset er en erhvervsdrivende fond, og fondens formål er at støtte forskning, udvikling og videndeling til gavn for beskæftigelsesindsatsen i Danmark.

2 For nærmere detaljer henvises til: http://vaeksthusets-forskningscenter.dk/projects/beskaeftigelses-indikator-projektet/.

3 I alt indeholder spørgeskemaet 12 spørgsmål til ledige og 13 spørgsmål til sagsbehandler. Der er 5 spørgsmål, vi ikke anvender: Et spørgsmål til borgeren om, hvad vedkommende skal have i løn for at tage et job, samt et om jobsøgekanaler og et åbent spørgsmål til både ledige og sagsbehandler om kommentarer til spørgeskemaet. Endelig spørges sagsbehandler om, hvilke aktiviteter den ledige har deltaget i de seneste 3 måneder. Spørgsmålet om jobsøgekanaler anvender vi som et intermediært outcome i stedet for som indikator for arbejdsmarkedsparathed, og spørgsmålet om aktiviteter anvender vi i afsnit 3.

Væksthuset finansierer en række analyser af projektet, der udkommer i 2017. Indeværende analyse er foretaget, mens dataindsamlingen stadig pågår. Resultaterne af senere analyser af BIP-data kan derfor afvige fra resultaterne i denne rapport.

Metoderne og datakilder, der er anvendt til at analysere disse spørgsmål, er opsummeret til sidst i denne sammenfatning.

Formål

KORAs undersøgelse har to overordnede formål:

1. At undersøge, om indikatorerne fra BIP kan samles i overordnede indeks, som kan bruges til måling af progression mod job, samt i så fald
2. At måle effekten af deltagelse i beskæftigelsestilbud på progressionen mod job givet ved disse indeks.

Første delformål belyses i tre trin:

i. Ved at undersøge, om de 20 indikatorer fra BIP kan danne grundlag for at konstruere ét eller flere indeks for arbejdsmarkedsparathed
ii. Ved at undersøge, om indeksene for arbejdsmarkedsparathed forudsiger jobsøgning og sandsynligheden for senere at komme i job
iii. Ved at undersøge, om forskellene i arbejdsmarkedsparathed, givet ved de fundne indeks, mellem deltagere i forskellige beskæftigelsesindsatser er som forventet.

Andet delformål belyses ved at:

iv. Analysere sammenhængen mellem deltagelse i aktivering og efterfølgende ændringer i arbejdsmarkedsparathedsindeksene, konstrueret under delformål 1.

Et progressionsindeks vil i denne undersøgelse bestå af summen af indikatorer, der er dannet med formålet af belyse arbejdsmarkedsparathed. Indeksene konstrueres på baggrund af en faktoranalyse af spørgeskemaerne, der samler de 20 oprindelige indikatorer i grupper. Vi definerer et godt progressionsindeks ved, at forbedringer over tid i indekset har en positiv sammenhæng med sandsynligheden for senere at komme i job.

Læsevejledning

Rapporten er skrevet på engelsk, fordi vi vurderer, at dataindsamlingen er unik, og at resultaterne derfor kan have international interesse. Denne danske sammenfatning indeholder en letlæselig gennemgang af de væsentligste resultater. Den interesserede læser henvises i gennemgangen til de specifikke resultater i rapporten. Rapportens øvrige dele indeholder følgende:

Kapitel 1: Her beskrives baggrunden for studiet og de indsamlede data.

Kapitel 2: Indeholder en kort gennemgang af relaterede empiriske studier om arbejdsmarkedsparathed.

Kapitel 3: Beskriver data og indeholder beskrivende statistik over indikatorer og aktivering.

Kapitel 4: Beskriver de statistiske metoder, der anvendes til at måle sammenhænge mellem indeks og henholdsvis beskæftigelse, jobsøgning samt aktivering.

Kapitel 5: Indeholder resultaterne. Afsnittet er inddelt i fire afsnit. Først beskrives resultaterne fra en faktoranalyse til at belyse delformål 1.i (afsnit 5.1), dernæst gennemgås sammenhæng mellem indeks og beskæftigelse og jobsøgning til at belyse delformål 1.ii (afsnit 5.2 og 5.3), og endelig gennemgås sammenhængen mellem indeks og aktivering til belysning af delformål 2 (afsnit 5.4).

Afsnit 6: Her opsummeres og diskuteres resultaterne.

Resultater

Første delformål: Kan BIP-spørgeskemaet måle progression mod job?

Dette første delformål besvares som nævnt i tre trin:

1. Ved at belyse, hvilke indikatorer for arbejdsmarkedsparathed der kan dannes på baggrund af de 20 indikatorer
2. Ved dernæst at se på, om disse underdimensioner forudsiger sandsynligheden for at komme i job og for at være jobsøgende
3. Ved til sidst at se på, om der er forskelle på indeksniveauet mellem ledige i forskellige beskæftigelsesindsatser.

Trin 1: Hvilke indeks for arbejdsmarkedsparathed kan dannes fra BIP-indikatorerne?

Vi danner 8 forskellige indeks for arbejdsmarkedsparathed

Vi taler om og måler ofte arbejdsmarkedsparathed som ét begreb (fx når kommunerne visiterer ledige til job- eller aktivitetsparathed). Den teoretiske litteratur om arbejdsmarkedsparathed omtaler også ofte begrebet samlet, men understreger samtidigt, at der er flere forskellige dimensioner af begrebet, som fx relaterer sig til en persons faglige kompetencer, sociale kompetencer, tilpasningsevne og netværk. I første del af analysen undersøger vi, om de 20 indikatorer i spørgeskemaet er højt korrelerede, hvilket er en forudsætning for, at de måler forskellige sider af samme sag. Vi undersøger dernæst, hvilke indeks der er mere korrelerede end andre, og dermed hvilke undergrupper af arbejdsmarkedsparathed de kan tænkes at afspejle.

KORAs analyse bekræfter hypotesen om, at de 20 indikatorer meningsfuldt kan slås sammen til ét samlet progressionsindeks, dvs. at de alle bidrager til at måle ét begreb, som vi kan tolke som arbejdsmarkedsparathed. Dette resultat er opnået på baggrund af en faktoranalyse af spørgeskemaerne (se rapportens afsnit 5.1). Analysen viser, at et vægtet gennemsnit af alle indikatorer kan forklare 76 % af variationen i svarene på de 20 indikatorer, mens en opsplitning i to forskellige vægtede gennemsnit kan forklare over 90 % af variationen. Denne opsplitning isolerer besvarelserne fra sagsbehandleren og den ledige i to forskellige grupper. Yderligere opdelinger af indikatorerne i spørgeskemaet giver indholdsmæssigt mening i op til 5 underopdelte grupper.

Vi tolker de 5 grupperinger af indikatorerne (i ikke-prioriteret rækkefølge) som udtryk for: 1) en sagsbehandlervurdering af den lediges arbejdsmarkedsparathed, 2) den lediges sociale kompetencer, 3) den lediges selvvurderede sundhed og tro på job, 4) den lediges jobidentitet og 5) den lediges sociale støtte. Faktoranalysen giver et bud på, hvordan indikatorerne kan vægtes sammen til enten én, to eller disse fem faktorer. Faktorløsningen er tilnærmelsesvis kendetegnet ved, at nogle indikatorer vægter højt på en faktor, mens andre vægter lavt. Da de spørgsmål med høje vægte tilnærmelsesvis har ens vægte, svarer faktorløsningen i store træk blot til en samlet sumscore over svarene på de indikatorer, der indgår i en given faktor med høj vægt (dvs., hvor svarene på disse indikatorer, der er tillagt en værdi fra 1 til 5 i spørgeskemaet, blot lægges sammen). Hvilke indikatorer det drejer sig om, er illustreret med forskellige farver i rapportens

tabel 5.1 (se også fodnote 3). På baggrund af faktorløsningerne med én, to og fem faktorer foreslår vi derfor tre simple bud på sammenvejninger af indikatorerne til dannelse af indeks for arbejdsmarkedsparathed: 1) en samlet sumscore, 2) en sumscore opdelt på svar fra den ledige og fra sagsbehandleren, og 3) endelig 5 sumscorer, der er en blanding af indikatorer til den ledige og sagsbehandleren og er dannet på baggrund af de fem dominerende faktorer i faktoranalysen.

Trin 2: Hvilke indeks forudsiger job og jobsøgning?

Alle indeks forudsiger job

Ovenfor blev det beskrevet, at de 20 indikatorer kan samles i grupper, der giver indbyrdes mening og kan bruges som indeks for arbejdsmarkedsparathed (begrebsvaliditet). Det er imidlertid ikke ensbetydende med, at de beskriver progression mod job, dvs. at de har forudsigelseskraft i forhold til senere beskæftigelse (prædiktiv validitet). Det undersøges i andet trin i analysen af, hvilke af de 8 indeks der er gode progressionsindeks.

Vi måler sammenhængen mellem ændringer i indeksene, og om de ledige finder job i de efterfølgende 6 måneder. Vi registrerer alle ordinære job, hvor den ledige har indbetalt arbejdsmarkedsbidrag i blot én måned inden for de 6 måneder, dvs. at vi tæller kortvarige job med, også selvom den ledige modtager offentlige indkomstydelser i samme måned. Over hele den målte periode er det blot 8 % af de ca. 4.000 ledige, som indgår i undersøgelsen, der finder job.

Vi finder, at ændringer over tid i de 8 forskellige indeks for arbejdsmarkedsparathed alle hver for sig forudsiger senere job, og at sammenhængen som forventet er positiv. Resultaterne viser, at både det samlede overordnede indeks samt de opdelte indeks baseret på den ledige og sagsbehandlerens vurdering forudsiger job. Det bekræfter, at BIP-spørgeskemaet kan bruges til at måle progression mod job. Det gælder dog ikke alle de fem underliggende dimensioner af den lediges arbejdsmarkedsparathed, når de inkluderes samtidigt.

"Selvvurderet helbred og tro på job" og sagsbehandlervurdering forudsiger job bedst

Når vi inkluderer de fem underliggende dimensioner i samme model og ser på, hvilke af disse dimensioner der forudsiger sandsynligheden for at komme i job, viser resultaterne, at det er indikatoren, vi kalder "Selvvurderet helbred og tro på job", der har den stærkeste sammenhæng med jobchancen. Næst efter denne har sagsbehandlerens vurderinger også stor betydning for jobchancen. Betydningen af sociale kompetencer samt arbejdsmarkedsidentitet varierer afhængig af metode og periode, som progressionen er målt over. Derimod har social støtte fra familie og venner ingen betydning, når der tages højde for de andre progressionsindeks.

Sammenhængen med sandsynligheden for at komme i job er betydelig

Resultaterne viser, at sammenhængen mellem progressionsindeksene og sandsynligheden for at komme i job er forholdsvis stor: Hvis den lediges progressionsindikator forbedres med en enhed på den målte 5-punkts-skala, der er knyttet til hvert indikator, er denne ændring associeret med en forbedring i sandsynligheden for at have været i beskæftigelse inden for den givne periode på 0,3-1,7 procentpoint. Da nogle indeks kan tage værdier op til 15 og andre op til 100, er det meget store sammenhænge, særligt i forhold til at kun 8 % som nævnt finder job i hele perioden. Det gælder vel og mærke med kontrol for en lang række karakteristika ved den ledige, der potentielt kunne forklare sammenhængen (se boks 1). Resultaterne kan ses i rapportens tabel 5.3.

Indeksene kan bruges som progressionsmål, ikke nødvendigvis handlingsanvisende

Vi har vist, at indeksene har en statistisk sammenhæng med sandsynligheden for senere at komme i job, og dermed at de udviser prædiktiv validitet. Sammenhængen forsvinder heller ikke, når vi kontrollerer for en lang række baggrundsforhold for den ledige, som potentielt kan forklare

de observerede sammenhænge (fx hvis ledige med sundhedsproblemer scorer lavere på indeksene og samtidigt i mindre grad finder job). Ikke desto mindre er det vigtigt at understrege, at sammenhængene stadig kan skyldes forhold ved den ledige, som vi ikke kan måle. Hvis ledige med en relativt lav beskæftigelseschance også er de ledige, der i gennemsnit oplever mindst progression i indeksene over tid uagtet timingen af ændringerne, kan det skabe en falsk sammenhæng mellem indeksene og jobchancen. Hvorvidt det er tilfældet, kan vi delvist undersøge ved at fokusere på ændringerne over tid for det enkelte individ i såkaldte fixed effect-modeller. Når vi gør det, bliver sammenhængen mellem indeksene for arbejdsmarkedsparathed og sandsynligheden for at komme i job markant mindre, men flere er stadig signifikante.

Resultaterne bekræfter, at indeksene er korreleret med forhold ved den ledige, som vi ikke observerer. Det betyder, at selvom fx indikatoren for selvvurderet helbred og tro på egne evner udviser sammenhæng med sandsynligheden for at komme i job, er det ikke givet, at en indsats, der forbedrer fx selvvurderet helbred, også forbedrer sandsynligheden for at komme i job. Vi påpeger derfor, at indeksene ikke nødvendigvis kan anvendes som handlingsanvisende, dvs. hvor indsatserne målrettes efter at opnå forbedringer på de specifikke indeks, hvor den ledige scorer lavt. Indeksene er korreleret med forhold med betydning for at komme i job og kan bruges som måling af, om der sker progression mod job og dermed også som resultatmål til vurderinger *efter* deltagelse i en indsats.

Sammenhængen med selvangivet jobsøgning ligner sammenhængen med job

Som supplement til analysen af sammenhængen med sandsynligheden for at komme i job belyser vi også sammenhængen mellem ændringer i indeksene og senere målinger fra den lediges selvangivne jobsøgning. Over to tredjedele af de ledige angiver, at de ikke anvender nogen søgekanaler til jobsøgning. Vi tolker brugen af søgekanaler som udtryk for jobsøgning og undersøger, om ændringer i indeksene har sammenhæng med en højere sandsynlighed for, at den ledige anvender søgekanaler til jobsøgning. Hvis en ændring i indeksene er udtryk for en forøget arbejdsmarkedsparathed, vil vi forvente, at den er positivt korreleret med omfanget af jobsøgning.

Resultaterne viser, at de samme indeks, der udviser sammenhæng med sandsynligheden for at komme i job, også udviser sammenhæng med jobsøgning. Korrelationen med jobsøgning er større og oftere signifikant end korrelationen med sandsynligheden for at komme i job. Resultaterne skal tages med forbehold, idet vi ikke med sikkerhed kan vide, om brug af søgekanaler er udtryk for mere aktiv jobsøgning, og fordi resultaterne kan overestimere sammenhængen som følge af, at jobsøgning er selvangivet. Ikke desto mindre understøtter resultaterne fortolkningen af indeksene som udtryk for arbejdsmarkedsparathed, fordi de er som forventet. Resultaterne ses i rapportens tabel 5.4.

Trin 3: Er der forskelle i indeksniveau mellem deltagere i forskellig aktivering?

Klare forskelle i arbejdsmarkedsparathed på ledige med forskellig aktiveringsstatus

Som en sidste test af brugbarheden af BIP-spørgeskemaet til måling af arbejdsmarkedsparathed undersøger vi, om der er forskel i indeksniveauet mellem deltagere i forskellige beskæftigelsesindsatser. Oplysninger om beskæftigelsesindsatser kommer fra DREAM-registret. Den hyppigst anvendte aktiveringsform for målgruppen af aktivitetsparate ledige er vejledning og opkvalificering efterfulgt af virksomhedspraktik. Det er kun en lille andel, der deltager i andre beskæftigelsestilbud, som vi derfor grupperer i en samlet restgruppe (den indeholder primært løntilskud, men også fx nyttejob). Næsten en tredjedel af de aktivitetsparate er ikke aktiveret i et givent kvartal. Vi har belyst, om deltagerne i disse fire forskellige grupper udviser forskellig arbejdsmarkedsparathed ved niveauet af indeksene. Baseret på tidligere analyser (fx Skipper 2010) og beskrivelser af overgang til beskæftigelse opdelt på deltagelse i aktive tilbud (jobindsats.dk) har vi en forventning om, at deltagere i restgruppen er mere arbejdsmarkedsparate end deltagere i andre aktiviteter. Vi vil også forvente, at ledige, der kommer i virksomhedspraktik, er mere arbejdsmarkedsparate end ledige, der deltager i vejledning og opkvalificering, og endelig at de, der ikke aktiveres, er længst fra arbejdsmarkedet.

Resultaterne viser, at der er store forskelle i arbejdsmarkedsparathed for deltagere i forskellige tilbud, og at forskellene er som forventet: Arbejdsmarkedsparathed – målt ved indeks, der samler de 20 BIP-indikatorer i grupper – stiger gradvist på tværs af grupperne fra ”passive” (ledige, der ikke var i aktivering), deltagere i vejledning og opkvalificering, virksomhedspraktik og andre tilbud. I statistiske termer betyder det, at indeksene diskriminerer mellem aktiverede. Dette mønster kan ikke ses ligeså tydeligt ved inspektion af sædvanlige registerdata (fx sundhedsydelser). Det er derfor både en indikation på, at indeksene diskriminerer mellem forskellige grupper af ledige i forhold til deres arbejdsmarkedsparathed, og samtidig tegn på, at de diskriminerer bedre end indeks dannet på baggrund af registerdata. Resultaterne er vist i rapportens tabel 5.5.

Andet delformål: Er der en sammenhæng mellem aktivering og progression mod job?

Tegn på, at aktivering fremmer progression mod job

Afslutningsvis er det undersøgt, om deltagelse i de tre grupper af aktive beskæftigelsestilbud (vejledning og opkvalificering, virksomhedspraktik og restgruppen af andre tilbud; primært løntilskud) påvirker indeksene. Analysen belyser dermed, om vi opnår nye indsigter ved at måle på de intermediære resultatmål, som progressionsindeks er. Som sammenligningsgrundlag har vi estimeret effekterne af aktivering på beskæftigelse, og resultaterne bekræfter tidligere fund (fx Arendt 2014; Graversen 2012), nemlig at virksomhedsrettede tilbud udviser størst effekt, og at vejledning og opkvalificering ikke har nogen signifikant effekt på sandsynligheden for at komme i beskæftigelse. Resultaterne viser tilsvarende positive effekter af virksomhedsrettede tilbud på progressionsmålene. Men i modsætning til beskæftigelseseffekterne ses også effekter af vejledning og opkvalificering på enkelte af indeksene, heriblandt selvvurderet helbred og tro på job og den samlede sagsbehandlervurdering, der begge udviste robuste sammenhænge med sandsynligheden for at komme i sandsynligheden for at komme i job. Virksomhedspraktik har en positiv effekt på alle de 8 indeks. Disse sammenhænge optræder alene i samme kvartal, som aktivering påbegyndes, og ikke i kvartalet efter. Grundet den korte varighed af aktivering tyder det på, at der er progression under, men ikke efter aktivering.

Vi har derfor vist, at der er klare gevinster ved at anvende progressionsindeks som effektmål som supplement til beskæftigelse. Resultaterne kan ses i rapportens tabel 5.6 og 5.7.

Opsummering

Samlet set har denne rapport vist, at BIP-spørgeskemaerne måler på meningsfulde dimensioner, der alle forudsiger sandsynligheden for at komme i job. Når dette er sagt, danner indikatorerne ikke entydige og teoretisk velfunderede underdimensioner af arbejdsmarkedsparathed. Det er derfor vigtigt stadig at være kritisk over for brugen af begrebet arbejdsmarkedsparathed, og der er behov for yderligere forskning i, om og hvornår begrebet giver mening, og hvordan empiriske målinger til progression bedst udvikles og anvendes. Med dette in mente har vi vist, at aktivering, der ikke umiddelbart har en synlig effekt på beskæftigelse, har effekter på flere af progressions-indeksene. Vi har udsat progressionsindeksenes prædiktive egenskaber af sandsynligheden for at komme i job for en hård test, men tolker ikke sammenhængene som kausale. Derfor kan de bruges som progressionsmål, men ikke nødvendigvis som handlingsanvisende. Indeksene er der-for egnet til at vurdere progression og resultater efter deltagelse i indsatser og ikke nødvendigvis til at bestemme, hvilken indsats der skal gives. Der tages forbehold for, at der ikke er taget højde for potentielt skævt frafald over tid i data, og at selvrapporterede mål i sig selv kan medføre skæve estimater. Disse emner er oplagte for yderligere følgeforskning.

Boks 1. Metode

Der er anvendt spørgeskema-data fra BIP-projektet kombineret med registerdata fra Danmarks Statistik. Data indeholder cirka 12.000 besvarelser for cirka 4.000 borgere, hvoraf nogle kan følges i 3 år fra december 2012 til december 2015.

Spørgsmål 1: Måler BIP samme konstruktion?

Der anvendes en eksplorativ faktoranalyse for at belyse, om spørgeskemaet meningsfuldt afdækker et samlet koncept tolket som arbejdsmarkedsparathed, og hvilke af indikatorerne der eventuelt afdækker underdimensioner heraf.

På baggrund af faktoranalyse danner vi en række progressionsindikatorer givet ved kombinationer af de 20 indikatorer i spørgeskemaet.

Spørgsmål 2: Forudsiger progressionsindikatorerne fra BIP senere jobchance?

Analysen af, hvilke af disse progressionsindikatorer der rent faktisk afdækker progression mod job, udføres ved at undersøge sammenhængen mellem ændringer i indikatorerne over 2, 3 eller 4 kvartaler og sandsynligheden for at komme i beskæftigelse inden 6 måneder efter sidste måling.

Spørgsmål 3: Hvad er effekten af aktivering på progressionsindikatorerne?

Analysen af, om aktivering påvirker progression, udføres ved at måle sammenhængen mellem deltagelse i aktivering i forhold til ingen aktivering i et givent kvartal og progressionen i samme og efterfølgende kvartal.

Analyserne til spørgsmål 2 og 3 udføres ved hjælp af en lineær regressionsmodel. I regressionsanalyserne tages der højde for følgende baggrundsforhold ved de ledige:

- Ledighedsforløb 3 år tilbage i tid
- Uddannelse
- Indkomst
- Køn
- Alder
- Ægteskabelig status
- Etnicitet
- Domme for kriminalitet
- Brug af sundhedsydelser
- Arbejdsmarkedsparathed (matchgruppe).

Der kontrolleres også for systematiske forskelle mellem kommuner, sagsbehandlere og ledige. Resultatmålet er beskæftiget eller ej i 6 måneder efter hver progressionsmåling. Man regnes for beskæftiget, hvis der er registreret indbetalt arbejdsmarkedsbidrag i mindst en måned, ekskl. løntilskudsjob, uafhængigt af om der samtidig modtages offentlige indkomstoverførsler.

1 Introduction

A substantial body of literature has shown that the effects of job training programs for long-term unemployed individuals are, at best, modest (Klüve, 2010; Card et al., 2010; Arendt, 2014; Svarer & Rosholm, 2009; Pedersen et al., 2012). However, even though long-term unemployed persons may not make the transition into employment they may have progressed towards it in terms of increasing their employability. That is often the purpose of the labor market programs, and it is therefore important to measure such short-term progression in addition to the actual employment effects, in order to be able to determine the actual effectiveness of various employment programs. Nevertheless, little is known about the potential effects of active employment programs on intermediate outcomes such as employability despite the obvious policy relevance.

In this paper, we examine the employability trajectories among social welfare recipients in Denmark, using a unique survey-linked administrative register data set with repeated quarterly information on a questionnaire specifically developed to reflect employability. The aim is to construct measures of employability and to measure the effect of active labor market interventions on these intermediate outcomes.

The questionnaire contains 20 different questions related to employability, including job-related self-efficacy, self-assessed and caseworker-assessed job aspirations, as well as self and caseworker-assessed health, health coping skills and social skills. The survey was developed under "the Employability Indicator Project" financed by a Danish foundation, *Væksthuset.* Væksthuset owns a non-profit company of the same name that offers tailor-made labor market qualifying programs to unemployed individuals, with the purpose of assessing the barriers against and progression towards employment. An independent research group was connected to the project, and 10 municipal employment agencies were involved in the survey development and data collection.

We offer new insights into the measurement of employability by examining the construct and predictive validity of the survey. Construct validity is described using factor analysis. Previous analysis of employability has examined predictive validity mainly by the correlation between the *level* of employability and subsequent employment. If the employability indices are to be used as a tool to detect progression towards employment, we argue it is pivotal to consider the relation between *the change* in the index and employment. Finally, we look at the effects of several specific types of active labor market programs on the change in each employability indicator and compare them to effects on employment, in order to examine whether the employability indicators are useful for capturing small steps towards employment.

The study is structured as follows: In the next section, we examine previous studies of employability. Section 3 describes the data, and Section 4 the empirical methods. The results are presented in Section 5 and discussed in Section 6.

2 Previous literature

In spite of the obvious benefits of measuring employability using simple questionnaires effectively, relatively little research has been conducted on the development of such employability indicators. The obvious obstacle is, of course, to construct the employability indicator. Various strands of research have made an effort to define and operationalize such a concept. According to Apel et al. (2008), labor market policy analysis has traditionally focused on the ability to find and keep a job, emphasizing traditional demand-side factors, whereas a more recent human resource management approach has emphasized health, attitudes towards work and social network. Other strands of literature have emphasized personal circumstances, such as housing and other external resources.

Ashford & Taylor (1990) defined the construct of employability as person-centered active adaptation and proactivity. Fugate et al. (2004) further developed these constructs and defines employability as a multidimensional aggregate of three dimensions: career identity, personal adaptability, and social and human capital. These concepts are very broad, are likely related to various other personal capabilities and can be measured in numerous ways. For instance, McArdle et al. (2007) cites research findings that a proactive personality has been linked to feelings of control, perseverance, self-efficacy, self-direction, coping and information-seeking, and that job loss research has shown that factors such as an internal locus of control, self-efficacy and problem-focused coping play important roles in gaining re-employment.

While there are numerous possible determinants of employment, and hence definitions of employability, our focus is on the identification of factors that can help the work of caseworkers in employment agencies. We therefore focus on employability factors that relate to a single individual, are relevant for an unemployed person and are changeable over time. The latter makes it possible to actually measure progression over time.

We are only aware of a handful of studies attempting to empirically test the various constructs of employability. McArdle et al. (2007) tested the construct from Fugate et al. (2004), and further tested whether self-esteem and job search mediated the relation between employability and re-employment. They used a sample of 416 Australian unemployed persons over the course of 6 months (response rate 60%). 126 of these unemployed persons were re-interviewed 6 months later to assess their employment status (response rate 30%). They examine the relationships between different survey instruments used to capture the employability dimensions and employment, controlling for education, age and gender. They find that the employability construct significantly affects the employment probability, whereas the mediating channels through self-esteem and job search are not significant. Adaptability (measured by proactive personality) was the strongest component of employability, followed by human capital, whereas career identity (identity awareness) and social support did not affect re-employment.

Apel & Fertig (2009) and Apel et al. (2008) test a survey constructed to measure the employability of German unemployed persons on both welfare and unemployment insurance. They identify six dimensions of employability, using principal component analysis: Qualifications and competencies, Motivation level, Psychological and somatic health, Willingness to compromise[4], job searching activities and finally Personal circumstances / social environment, which constitute a single component. They use principal component analysis to construct indicators of each of these dimensions from a survey of 3,600 German workers (response rate 50%). The survey was linked to administrative register data to assess employment status 6 months later. Using probit models

[4] Apel et al. (2008) call the dimension Willingness for concessions, and refer to it as willingness to cope with unpleasant circumstances in order to obtain or keep a job, e.g. long commuting distance, lower income, or non-normal working hours.

to model the employment probability, Apel & Fertig (2009) found that only the dimensions measuring qualifications and competencies and job searching are related to future chance of gaining employment. This is more or less the direct opposite of the findings in McArdle et al. (2007). Revisiting the data, Apel et al. (2008) however found that health is the most important predictor of later employment, whereas willingness to compromise and job searching are only of minor importance.

Koen et al. (2013) also revisit the Fugate-model, distinguishing five dimensions of employability (adaptability (career exploration and career planning), career identity, self-reported qualifications and social capital). They use a sample of 2,541 Dutch (mostly long-term) unemployed persons, with a 1-year follow-up for 897 of them (response rate 35.3%). Their results showed that adaptability and career identity were significantly related to job searching behaviour, whereas self-reported qualifications and social capital were not. Three of the employability dimensions (self-reported qualifications social capital and career identity) and job searching explained employment probabilities beyond unemployment duration, demographics and standard human capital controls. Finally, they found that participation in an employment program affects all dimensions of employability, with the exception of social capital.

Van Hooft (2014) employs a 3-wave Dutch survey with assessment of job seekers' attitudes and behaviors in relation to work and job searching. The waves were collected from 225 participants on referral to the employment agency, and 4 and 6 months later. Using logistic regression he found that perceived health problems is the most consistent predictor of job searching and re-employment status, whereas attitudes towards job searching and job-searching efficacy did not predict employment. Furthermore, employment counselors' assessments of job seekers' job searching intensity were significantly more strongly related to reemployment success than job seekers' self-ratings of job searching.

Andersson (2015) examined the predictive validity of attitudes and job searching behavior on re-employment chances among 142 workers. Information on attitudes was collected 1 week after persons losing their job, and employment was examined 15 months later. Using logistic regression, he found that work-related self-efficacy (measured by a 9-item job-related self-efficacy scale), predicted later employment, while personal initiative (also measured by a 9-item scale) did not.

3 Data

The main data source for this study is the repeated ongoing survey among unemployed individuals financed by *Væksthuset*. The survey was developed jointly by a group of practitioners and researchers and is collected by the local employment agencies in 10 municipalities. The survey is conducted at quarterly meetings between social welfare recipients and their caseworkers. It is only used for welfare recipients who are assessed by their caseworker as not being suitable for employment ("aktivitetsparate").

The first response was received on the 17th of December 2012 and the latest response at the time of our data collection is from the 2nd of December 2015. The survey contains a total of 21,685 responses (10,912 responses from unemployed and 10,773 responses from caseworkers) for 4,038 unemployed individuals. The majority are above 30 years of age, because the survey was intended for this age group, but the survey has also been used for younger individuals, as 13% of the individuals in the data are under 30. Using unique identifiers, we link the survey data to administrative register data covering the same period.

We construct three samples, one for each of the three different analyses: 1) An analysis of the validity of the survey using factor analysis on the first response for each unemployed person, 2) An analysis of the predictive validity of employability indicators and employment and finally 3) An analysis of the effect of active labor market interventions on the employability indicators. In the latter two, we use all responses but apply three samples, in which changes over time in employability are two, three and four quarters, respectively.

For the initial factor analysis, we use only the first response for each individual in the factor analysis. If we included more responses from the same individual, we would confound internal construct validity with progression differences between individuals observed once or more in the survey. To increase sample size, missing item-response on single questions are replaced by mean responses to other questions for the same respondent. The sensitivity of this solution is examined. We restrict the sample to individuals where the caseworker responded to the questionnaire no later than 3 weeks after the response of the unemployed person.

For the analysis of the relation between active labor market programs, employability and employment, we are interested in the *change* over time of each of the employability indicators. We therefore omit individuals that respond to the survey only once (1,353 individuals). For the remaining individuals, we restrict our attention to survey responses for which we can track employment status for at least 6 months after the response date. Our latest available information on employment status in our data is from September 2015. We therefore omit survey responses made later than 1st April 2015 (2,239 responses). We also drop responses for which the time lapse between the response dates of the unemployed person and the caseworker were more than one week (1,482 responses).

3.1 Employability indicators

Information on employability is obtained from the survey. The survey includes 9 questions for the unemployed persons and 11 questions for their caseworkers on subjects such as their self-rated health, job aspirations, networking, health coping skills, communication skills, job knowledge, self-efficacy and self-confidence. Appendix Table 1.1 shows each question. In each question, respondents were asked to answer on a 5-point likert scale. For each employability indicator (EI), we construct the change from period *t*-1 to period *t* by subtracting the raw responses. Since the respondents were surveyed at different points in time, using different time intervals, it is of great importance to control for the time lapse between responses. In the analysis of progression, this could be handled by controlling for elapsed time between responses, but we believe that this is too simple in this particular case for various reasons. First of all, because the time lapse between responses varies immensely, (min: 3 weeks, max: 150 weeks). Secondly, because progression indicators are highly volatile, it is unlikely that the control approach captures this. Finally, we would like to link the estimates of associations between progression and employment to the analysis of the impact of interventions on changes in progression. In the latter, the control approach is not an option, since elapsed time here is an outcome. However, it is a challenge to construct a homogeneous time period between responses. On the one hand, if little time has passed between responses we might not expect to find much variation in the employability indicators over time. On the other hand, choosing a long time span allows for more attrition as well as for more variation in the indicators but also in unobserved factors, which may confound our analysis. We construct three different samples that vary in the length of time between responses. In the first sample, we look at the change in employability indicators across a time span of two quarters (Sample 1). In practice, this was done as follows: For each survey response at time *t*, we identified the nearest preceding survey response in the second quarter before that and constructed the change in employability indicators between time period *t* and *t*-1 using this pair of observations. Reponses for which we could not find a preceding response during the second quarter were omitted. In the same way, two additional samples (Samples 2 and 3) were created by increasing the time span between responses from two to three and four quarters. It should be noted that increasing the time lapse between responses comes at the cost of fewer observations. Our baseline results are based on Sample 1, which has the shortest time lapses between responses, but the most observations. In all models, we control for the exact time difference between responses.

Table 3.1 shows means for the level and the change in employability indicators over time for each sample (using 1-5 values for the likert scale response, where 5 is the highest outcome). The table shows that, on average, the unemployed person scores are slightly higher for their own questions than for the questions for their caseworkers. However, the change in indicators over time appears to be smaller for the questions for the unemployed persons than the caseworker questions. For example, the change in the questions for the unemployed persons relating to cooperation, social support and self-confidence is negative. The table also shows that the change over time in indicators changes as the time lapse between responses increases. For questions relating to energy in daily life, self-assessed health, self-efficacy, determination and health coping skills, the change over time becomes more positive as the time lapse between responses increase. On the other hand, for questions relating to job aspirations, cooperation, self-confidence, social support, instructions and realistic beliefs, the change over time becomes more negative when time between responses increase. This may both reflect a change in employability and a composition effect arising because individuals observed for longer time periods differ from those observed for shorter time periods only.

Table 3.1 Employability indicators (means)

	Sample 1: Two quarter change		Sample 2: Three quarter change	Sample 3: Four quarter change
	Level of employability indicator in period t-1, EI_{t-1}	Change in employability indicator over two quarters, ΔEI	Change in employability indicator over three quarters, ΔEI	Change in employability indicator over four quarters, ΔEI
Unemployed				
Q1: Job aspirations	3.131 (1.411)	0.017 (1.247)	0.016 (1.344)	-0.007 (1.410)
Q2: Networking	3.058 (1.337)	0.059 (1.049)	0.117 (1.103)	0.081 (1.169)
Q3: Cooperation	3.779 (1.078)	-0.012 (0.914)	-0.029 (0.957)	-0.052 (1.010)
Q4: Social support	3.739 (1.323)	-0.038 (1.063)	-0.034 (1.102)	-0.50 (1.158)
Q5: Energy	2.768 (1.246)	0.043 (1.142)	0.084 (1.220)	0.103 (1.288)
Q6: Self-assessed health	2.524 (1.125)	0.060 (0.975)	0.072 (1.060)	0.099 (1.103)
Q7: Self-confidence	3.573 (1.237)	-0.031 (1.040)	-0.023 (1.102)	-0.067 (1.162)
Q8: Self-efficacy	2.818 (1.309)	0.012 (1.113)	0.035 (1.226)	0.043 (1.272)
Q9: Job knowledge	2.985 (1.352)	0.021 (1.179)	0.068 (1.246)	0.034 (1.23)
Caseworker				
Q2: Realistic beliefs	3.119 (1.480)	0.027 (0.965)	0.021 (1.014)	0.003 (1.054)
Q3: Determined	2.330 (1.276)	0.068 (0.998)	0.115 (1.078)	0.076 (1.154)
Q4: Networking	2.880 (1.361)	0.078 (0.979)	0.072 (1.014)	0.052 (1.087)
Q5: Communication skills	2.892 (1.384)	0.039 (0.922)	0.014 (0.984)	0.029 (1.034)
Q6: Cooperation skills	3.191 (1.482)	0.035 (0.751)	0.007 (0.807)	-0.029 (0.854)
Q7: Instructions	3.388 (1.557)	0.013 (0.714)	0.004 (0.752)	-0.014 (0.773)
Q8: Focused	2.724 (1.563)	0.021 (0.761)	0.008 (0.818)	0.000 (0.827)
Q9: Social support	2.721 (1.533)	0.022 (0.980)	0.009 (1.023)	-0.008 (1.058)
Q10: Health coping skills	2.610 (1.283)	0.042 (1.010)	0.054 (1.061)	0.082 (1.166)
Q11: Health	2.857 (1.221)	0.081 (0.925)	0.071 (1.006)	0.073 (1.042)
Q12: Caseworker assessment	2.411 (1.266)	0.047 (0.972)	0.043 (1.035)	0.059 (1.084)
No observations		2,775	1,967	1,428

3.2 Outcome measures

Our main outcome is a dummy variable equal to 1 if the unemployed person has any registered monthly employment within 6 months after each response. Monthly employment is defined by any paid labor market contributions in a given month, and we exclude payments stemming from jobs with wage subsidies[5]. Employment is thus defined independently of any simultaneous receipt of public benefits. The information is obtained from DREAM, a longitudinal database maintained by the Ministry of Employment containing weekly information about social transfer payments and monthly information about labor market attachment.

[5] We therefore allow for other social transfers in the month of employment. Wage subsidies are measured in the last week of that month, because there are very few individuals with wage subsidy jobs in the first three weeks of the months who are not in wage subsidy jobs in the last week of the same month.

We also use a secondary intermediary outcome of job search. This outcome is measured in the survey by the number and type of job search channels[6]. We focus on whether any job search channels are used or not, as more than two thirds do not use any job search channels.

3.3 Active labor market programs

In the survey, caseworkers are asked what kind of activities the unemployed person has participated in during the last quarter. This information is highly detailed and contains 21 different activities, which we group into 14 main groups based on their content. From DREAM we construct similar information about the participation in active labor market programs in the quarter before each response, but the information on the type of program is much more limited in the registers. We construct three dummy variables equal to 1 if the individuals have participated in training and qualification, internships or other employment programs which mainly comprise wage-subsidized jobs. They are allowed to participate in more than one program. We also report if they were on other types of public benefits. In Table 3.2, we tabulate the survey and register information on the participation in the various programs and activities. The table shows the number of weeks spent in different active labor market programs, based on register information, for individuals that were indicated to have participated in a given survey activity. For instance, it can be seen in the table that individuals who, in the survey, are registered as participating in qualification of general skills (row 1) are registered as having “no participation” in the register data during the same quarter for on average 2.89 weeks. The same individuals are registered as participating in “Training and qualification” for 7.07 weeks, which is by far the longest duration in any of the register data activities, for this group. It thus shows that there is some mismeasurement, but a relatively large degree of overlap in the activities reported by the caseworkers and the labor market programs in the administrative registers. A similar pattern is found for most activities: Most types of qualification programs overlap with training and qualifications, rehabilitation, which is often health related with “no participation”, no activities overlap and internship overlap. However, it is not uncommon either that caseworker-reported participation does not overlap with participation in the registers. It is therefore important to stress that the survey includes treatments that are not registered in the administrative employment data.

This provides initial evidence on the usefulness of a more detailed registration of activation programs, but further analysis of the quality of these data is recommended before it is applied in empirical analysis. In the analysis below, we will therefore use the commonly applied DREAM information on active labor market programs.

[6] The types of job search channels are: newspapers, own initiative, the Internet, networks, internships, temporary agencies.

Table 3.2 Participation in activities in the quarter before each response (average weeks)

	Register information						
Survey information	No participation	Training and qualification	Internship	Other employ-ment programs	Other public benefits	Self-support	Total (weeks)
Qualification of general skills (N=322)	2.89	7.07	1.89	0.81	0.09	0.25	13
Qualification of firm-specific skills (N=96)	4.14	5.02	0.79	1.92	1.08	0.05	13
Knowledge about the labor market (N=159)	2.06	8.45	2.08	0.12	0.16	0.13	13
Qualification of social and personal skills (N=312)	2.47	9.24	0.94	0.26	0.08	0.02	13
Job searching (N=77)	3.83	6.83	1.45	0.38	0.34	0.17	13
Networking (N=119)	2.55	9.24	1.00	0.20	0.00	0.00	13
Mentoring (N=361)	5.58	3.73	3.19	0.35	0.01	0.14	13
Health coping skills (N=144)	4.55	6.24	1.68	0.29	0.00	0.24	13
Diet and exercise (N=272)	3.40	8.36	0.81	0.12	0.09	0.22	13
Treatment and rehabilitation (N=675)	7.69	3.43	1.37	0.17	0.22	0.12	13
Health coping of mental and physical health (N=178)	4.98	6.25	1.40	0.06	0.08	0.23	13
Internship (N=1,207)	2.98	4.79	4.74	0.17	0.15	0.17	13
Drug treatment (N=77)	6.05	5.82	0.78	0.26	0.00	0.09	13
Other activities (N=58)	2.38	2.60	2.19	4.50	0.84	0.48	13
No activities (N=550)	11.32	1.07	0.19	0.12	0.17	0.13	13
Does not know (N=9)	10.40	1.00	1.30	0.00	0.00	0.30	13

Note: The table shows the number of weeks spent in a given active labor market program (DREAM) in the quarter before each survey response for individuals who participated in a given survey activity in that period. The table is based on sample 1.fg

4 Empirical methods

The empirical analysis is conducted in three steps, related to each of the three research questions: First, we will assess construct validity of the employability survey using factor analysis. Second, we will examine the predictive validity of the employability survey, and thirdly, we will examine whether participation in active labor market programs affect employability and employment.

4.1 Construct validity

To provide more insight into what the employability survey is measuring, and in particular whether it can be said to measure one underlying construct (employability), we will conduct a factor analysis. Factor analysis is often used as a tool to provide evidence of the *internal* construct validity of a given survey instrument (Goodwin 1999). Even though the survey was constructed on the basis of a literature review and a large effort by practitioners and experts to collect suitable questions, the literature has not established a firm theory for employability, and therefore we do not have robust hypotheses about how different questions tap into different dimensions of employability. For this reason, we apply an exploratory factor analysis as opposed to confirmatory factor analysis. This tells us which questions tap into similar dimensions and can therefore assist in the construction of hypotheses about which dimensions of employability the survey is measuring. The factor analysis is based on the principal factor technique[7]. To ease interpretation, we rotate the factors but stick to orthogonal solutions.

4.2 Predictive validity

To be able to infer the predictive validity of the employment indicators created from the factor analysis, we estimate the association between a change in each employability indicator and subsequent employment using the following regression model:

$$EMP_{it+1} = \alpha + \beta EI_{it-1} + \beta \Delta EI_{it} + \beta X_i + \gamma_i + \mu_c + \delta_t + e_{it} \qquad (1)$$

where EMP_{it+1} is a dummy variable equal to 1 if individual i is employed within 6 months after period t, EI_{it} is a given employability indicator for individual i in period t, and EI_{it-1} is the same indicator measured in period t-1. ΔEI_{it} is therefore the change in the employability indicator between period t and t-1 ($EI_{it} - EI_{it-1}$). X_i is a vector of background characteristics measured before the first survey response including age, gender, education, income, marital status, children, health care use (visits to general practitioner, specialist doctors, psychiatrist and in and outpatient hospitalizations), criminal records (sexual offences, crimes of violence, offences against property, other crimes, drunk driving, vehicle defect offences and violation of the road traffic act, firearms act, income tax and fiscal act, special laws and other convictions), three year unemployment history and municipality fixed effects. X_i also includes dummies for missing information on each employability indicator variable. We include caseworker fixed effects, μ_c, to control for effects that are common to caseworkers. This obviously removes an impact that a specific caseworker might have on the unemployed employability. We also include year and week fixed effects, δ_t, as well as control for the exact time difference between period t and t-1. In some

[7] Not to be confused with principal component analysis. We choose this to avoid normality assumptions typically underlying Maximum Likelihood.

specifications, we also add individual fixed effects, γ_i, to capture individual specific effects that are constant over time. This requires at least three survey responses, and all samples are conditional on this requirement.

It is relevant to stress that we are controlling for a detailed set of variables including the initial level of the indicators and, at the very least, a much richer set than previous comparable studies, particularly because we are also including caseworker and individual-specific effects (i.e. fixed effect models). Thus, we are subjecting the predictive validity of the employability indicators to a harsh test. This is not the same as saying that we are uncovering a causal relation between employability and the chances of getting a job. If there are unobserved attributes of the unemployed person that vary over time and are related both to the employment chances and the attributes we are measuring using the employability survey, the relations we are uncovering are not causal estimates (e.g. Wooldridge 2002, p. 265). The fixed effect estimator captures the part of the unobserved component that is fixed over time. However, it comes at the expense of strict exogenity assumptions, where the lagged outcomes do not affect treatment and past treatment does not affect current outcomes (given current treatment). Moreover, Imai (2016) shows that selection-on-observables models like OLS may be preferred in models with dynamic causal relationships. Therefore, neither OLS nor FE likely captures a causal effect, and none is a priori superior to the other.

The distinction between causal and predictive estimates is important when employability indices are viewed as a tool for caseworkers to monitor progression and guide interventions. If the indices are mainly predictive, but not causal, they may still serve as indicators of progression, but should not necessarily guide the interventions needed to further more progression. Health coping strategies can therefore serve as an indicator of progression, but interventions need not be directed towards improvement of health coping strategies, even though a caseworker observes no progression on these outcomes.

4.3 Effect of activation on job progression

The effects of active labor market programs on the change in each employability indicator are derived from the following regression model:

$$\Delta EI_{it} = \alpha + \beta EI_{it-1} + \beta D_{it} + \beta X_i + \delta_t + \gamma_i + \mu_c + \varepsilon_i \qquad (2)$$

where D_{it} is a set of dummy variables for whether individual *i* participated in a particular kind of active labor market program in the quarter before period *t*. We include the same set of controls as in equation (1). Standard errors are clustered at the individual level in all models.

5 Results

5.1 Exploratory factor analysis of the employability survey

We conducted an exploratory factor analysis on the first responses in the survey to explore the survey's construct validity, i.e. whether the survey is measuring a common construct. We use exploratory factor analysis because no firm hypothesis of employability has been built, making confirmatory factor analysis premature. Instead, we supplement the analysis with an analysis of predictive validity.

We use only one response per person because we want to infer what the responses at a given point in time reflect about employability, and we use the first response to mitigate the influence of changes over time in responses, which could alter the relationship between responses, hence the underlying factors. Almost a third of responses are missing, however, particularly in the caseworker survey, in the first response. This is probably due to lacking knowledge about the unemployed persons after just one meeting, although the caseworker might have had more meetings with the unemployed person prior to the first response. We have tackled this by imputing the missing values, if there are at most two missing values. The imputation is constructed as the mean value that the particular caseworker has reported for other questions for the same unemployed person, adjusted to the mean level that other respondents score on the particular question. We also explore whether and how imputation matters for the results.

The results (eigenvalues and fractions of total variance explained by each factor) are shown in the appendix along with a scree plot. The results show that the 20 questions in the survey contain one factor that explains 76% of the variation in the responses. There is only one other factor with an eigenvalue larger than 1 (fulfilling a common selection criterion, the Kaiser-Guttmann criterion), and these two factors jointly explain 90% of the total variation. Using the scree plot to determine the number of factors, one may add more factors, but no clear link is uncovered. The factor loadings on each question and their uniqueness are reported in Appendix table 1.3 for the eight factors with positive eigenvalues. It can be seen that solutions with four or more factors explain all the variation in the data. We have estimated solutions with two, four, five and six factors – with and without imputation – to explore how the factor solutions change when the number of factors is constrained. To ease interpretation we have rotated the solutions (orthogonally). The results show that the two and four factor solutions are not affected by response imputation, whereas the five and six factor solutions are. Moreover, only three of the five factors are kept in the sixth factor solution, so the determination of factors beyond four seems to be more uncertain. We present the two, four and five factor solutions in Table 5.1 with imputation. The solutions without imputation are shown in the appendix. To aid the interpretation, we have colored the factor loadings that are larger than 0.45 a different colors for each factor. We also provide suggestions for labels for each factor, acknowledging the subjectivity in this exercise. These results show that a two-factor solutions splits the factors into one entirely based on caseworker assessments, and another based on three questions for the unemployed persons related to self-assessed health, self-efficacy and daily energy. Using four factors retains most of the two former factors but isolates two factors related to social skills (caseworker and unemployed person assessment of networking skills and unemployed person assessment of cooperation skills), and a factor related to social support. For instance, it would be natural to include the caseworker assessment of health in the health and self-efficacy factor and cooperation in the social skills factors, but the factor loadings are only 0.35 and 0.27, respectively, and are surpassed by the factor loadings on the caseworker factor.

Table 5.1 Rotated factor solutions

	2-factor solution		4-factor solution				5-factor solution				
Unemployed:	Case-worker factor	Health and self-efficacy	Case-worker factor	Health and self-efficacy	Social skills	Social support	Job skills	Health and self-efficacy	Social skills	Job orientation	Social support
Q1: Job aspirations	0.226	0.389	0.036	0.377	0.207	0.101	0.029	0.102	0.011	0.553	0.024
Q2: Networking	0.433	0.164	-0.056	0.127	0.702	0.013	-0.146	0.086	0.728	0.069	0.000
Q3: Cooperation	0.427	0.195	0.051	0.172	0.488	0.078	-0.017	0.065	0.448	0.224	0.050
Q4: Social support	0.346	-0.057	-0.170	-0.036	0.046	0.729	-0.189	-0.053	0.018	0.018	0.732
Q5: Energy	0.130	0.676	0.013	0.658	0.158	0.059	-0.048	0.656	0.179	0.034	0.065
Q6: Self-assessed health	-0.088	0.834	-0.033	0.818	-0.014	-0.016	-0.065	0.800	-0.021	0.060	-0.016
Q7: Self-confidence	0.346	0.388	0.076	0.370	0.332	0.096	0.038	0.141	0.185	0.473	0.034
Q8: Self-efficacy	-0.021	0.814	0.032	0.797	0.022	-0.047	-0.006	0.749	-0.002	0.129	-0.055
Q9: Job knowledge	0.247	0.390	0.038	0.378	0.219	0.120	0.019	0.149	0.060	0.467	0.057
Case-worker:											
Q2: Realistic beliefs	0.592	0.112	0.548	0.127	0.008	0.111	0.484	0.021	-0.042	0.327	0.096
Q3: Determined	0.492	0.299	0.468	0.312	-0.040	0.140	0.395	0.284	-0.035	0.168	0.148
Q4: Networking	0.726	-0.012	0.325	-0.032	0.594	0.013	0.194	0.014	0.701	-0.024	0.034
Q5: Communication	0.766	-0.057	0.509	-0.058	0.352	0.061	0.400	-0.081	0.393	0.149	0.067
Q6: Cooperation	0.737	-0.023	0.554	-0.020	0.274	0.035	0.440	0.012	0.356	0.054	0.058
Q7: Instructions	0.749	-0.180	0.702	-0.161	0.077	0.038	0.606	-0.149	0.134	0.118	0.058
Q8: Focused	0.724	0.005	0.701	0.019	0.076	0.012	0.588	0.083	0.177	0.024	0.049
Q9: Social support	0.580	-0.066	0.169	-0.031	-0.062	0.709	0.113	0.003	-0.037	-0.009	0.736
Q10: Coping	0.476	0.330	0.436	0.337	0.016	0.104	0.333	0.460	0.144	-0.126	0.156
Q11: Health	0.464	0.340	0.523	0.352	-0.069	0.050	0.429	0.439	0.030	-0.040	0.093
Q12: Overall assessment	0.479	0.303	0.509	0.317	-0.080	0.101	0.433	0.320	-0.051	0.118	0.119

Note: Results from an orthogonal rotated principal factor solution with the number of factors restricted to 2, 4 and 5. Questions that have a factor loading greater than a threshold of 0.45 are shown in color, each factor having a different color. Questions that do not enter any factor with the chosen threshold are marked in grey. 3,142 observations with imputed missing responses.

When we consider a 5-factor solution, the caseworker factor splits into several different factors, an. d a new factor from the unemployed responses appears, which we label job orientation (high level of job aspirations, self-confidence in knowing that own skills are useful; knowing what needs to be done to increases the chances for getting a job). The remaining indicators from the caseworker factor are related to skills needed on the job (able to follow instructions, able to focus on an assignment and realistic beliefs about employment opportunities), so we label this factor "job skills". It is worth stressing that several of the other indicators have relatively high factor loadings on this factor, and our choice was admittedly guided by an *ad hoc* factor loading threshold of 0.45. The job skills factor changes when a sixth factor is added, or when we do not imputation in the case of missing responses. However, with a six-factor solution, it is hard to find a meaningful interpretation of the sixth factor because all factor loadings are small. In contrast, the new job orientation factor is also present without imputation and with a 6-factor solution, and therefore seems to be relatively robust. The caseworker assessment of health coping also loads on the health and self-efficacy factor, but because this factor was present in both the two and four factor solutions, with and without imputation, it seems to be relatively robust.

On the basis of this analysis, we choose to examine eight progression indicators: One indicator comprised by a total sum score from all questions, two indicators comprised by sum scores from the unemployed persons and the caseworkers independently (labelled "All", "Unemployed" and "Caseworker", respectively), and five indicators inspired by the factor analysis. The five indicators are constructed from the four-factor solution, and adding a fifth indicator that is left-over from the four-factor solution but re-appeared in the fifth- and sixth factor solution, independently of whether missing responses were imputed or not. These five indicators are labelled the "caseworker factor indicator" (to distinguish it from the total caseworker factor), the "health- and self-efficacy indicator", the "social skills indicator", the "social support indicator" and the "job orientation indicator" in the following analysis. To ease construction we simply construct the sum-scores of the different questions that constitute these factors. As the factor loadings for a given factor were of a similar magnitude, the sum score will produce results that are similar to a predicted factor.

Table 5.2 provides descriptive statistics for the eight progression indicators. One obvious difference between the eight indicators is their difference in mean levels, reflecting the fact that each indicator comprises a different number of questions, each of which takes a maximum value of 5. With these indicators, it is far more evident than when looking at the individual questions alone that the mean initial level reported by the caseworker is lower than the mean level reported by the unemployed person, whereas the opposite is true with respect to mean changes over time. It also shows that the total caseworker indicator shows a steady increase when measuring changes from 2 to 4 quarters, whereas this is only true from the 2nd to the 3rd quarter for the unemployed. The factor-based solutions show that the decrease from the 3rd to the 4th quarter for the unemployed persons stems from negative changes from the 3rd to the 4th quarter for the social skills indicator and the job orientation indicator, whereas particularly the health and self-efficacy indicator increases throughout the sample periods.

Table 5.2 Employability indicators (means)

	Sample 1: Two quarter change		Sample 2: Three quarter change	Sample 3: Four quarter change
	Level of employability factor in period t-1, EI_{t-1}	Change in employability factor over two quarters, ΔEI	Change in employability factor over three quarters, ΔEI	Change in employability factor over four quarters, ΔEI
Δ Index 1: Unemployed (score 0-45)	28.376 (7.596)	0.110 (5.633)	0.309 (6.247)	0.221 (6.514)
Δ Index 2: Caseworker total (score 0-55)	22.910 (8.364)	2.274 (9.820)	2.297 (10.614)	2.449 (10.645)
Δ Index 3: Caseworker factor (score 0-40)	22.910 (8.364)	1.663 (7.401)	1.663 (7.952)	1.798 (8.000)
Δ Index 4: Health and self-efficacy (score 0-15)	8.110 (3.222)	0.114 (2.656)	0.189 (2.940)	0.246 (3.112)
Δ Index 5: Social skills (score 0-15)	9.718 (3.0236	0.290 (2.407)	0.303 (2.542)	0.249 (3.112)
Δ Index 6: Social support (score 0-10)	6.460 (2.405)	0.145 (2.246)	0.195 (2.349)	0.209 (2.454)
Δ Index 7: Job orientation (score 0-15)	9.689 (3.249)	0.005 (2.691)	0.067 (2.882)	-0.024 (2.979)
Δ Index 8: All questions (score 0-100)	59.497 (16.526)	2.384 (12.881)	2.607 (2.882)	2.669 (14.560)
No observations		2,775	1,967	1,428

Note: Standard deviations are shown in parentheses.

With the given solutions, choosing questions with a factor loading higher than 0.45, there are 6, 4 and 4 questions, respectively, that are not included in each of the three solutions. These are shown in grey. As can be seen, there is no overlap with respect to the questions that are missing in the factors, when moving from a four to a five-factor solution, suggesting it would be premature to remove questions from the questionnaire based on these findings.

It is important to stress that this simple factor analysis is by no means an exhaustive analysis of the validity of the questionnaire. However, the results do indicate that improvements in the validity of the questionnaire could be obtained, perhaps by altering the questions. Such an endeavour could be inspired by theoretical work e.g. by Fugate et al. (2004), and the validated scales used in empirical work testing these constructs.

5.2 Associations between indicator changes and employment

In this section, we consider the predictive validity of the eight indicators of employability created based on the BIP survey, by considering the effect of the *change* in the indicators on subsequent employment. The outcome is any employment in the following 6 months after the last measurement in the change.

Table 5.3 shows the OLS and FE estimates of equation (2) separately for 3 different models across the 3 different samples where we vary the time between EI responses. The three models differ with respect to measurement of are the progression indicator: Model 1 includes changes in

the unemployed and the caseworker progression indicators simultaneously. Model 2 includes changes in the five-factor-inspired progression indicators simultaneously, and model 3 includes changes in the total sum score of all the 20 questions in the BIP survey. All models' controls for the variables specified in section 4.

Prior inspection of the models, where each of the progression indicators are included *individually* shows that *all* the eight indicators predict later job chances. However, this is not the case when they are entered simultaneously. Looking first at OLS estimates, the table shows that both the indicator labelled *All* and the *caseworker* and *unemployed* indicators are positively related to employment in both the short and the longer run, i.e. they have predictive validity for job chances. The relationships are close to being constant over the three different samples that vary with respect to timing of measuring indicator changes.

Table 5.3 Effects of progression on employment – sum index

Independent variables	Sample 1: Two quarter change		Sample 2: Three quarter change		Sample 3: Four quarter change	
	OLS (1)	FE (2)	OLS (3)	FE (4)	OLS (5)	FE (6)
Unemployed vs. worker						
Δ Index 1: Unemployed person (score 0-45)	0.003 (0.001)***	0.002 (0.001)	0.006 (0.002)***	0.006 (0.002)***	0.006 (0.002)***	0.003 (0.002)
Δ Index 2: Case worker (score 0-55)	0.006 (0.001)***	-0.000 (0.001)	0.005 (0.001)***	-0.002 (0.002)	0.006 (0.001)***	0.001 (0.002)
Factor analysis						
Δ Index 3: Case worker factor (score 0-40)	0.008 (0.002)***	-0.001 (0.002)	0.006 (0.002)***	-0.003 (0.002)	0.006 (0.002)***	-0.000 (0.003)
Δ Index 4: Health and self-efficacy (score 0-15)	0.007 (0.002)***	0.005 (0.002)**	0.013 (0.003)***	0.005 (0.003)*	0.017 (0.004)***	0.003 (0.003)
Δ Index 5: Social skills (score 0-15)	-0.004 (0.003)	0.002 (0.003)	0.004 (0.003)	0.009 (0.004)**	-0.000 (0.004)	0.006 (0.007)
Δ Index 6: Social support (score 0-10)	0.004 (0.003)	0.004 (0.004)	0.003 (0.004)	0.001 (0.004)	0.001 (0.004)	0.001 (0.006)
Δ Index 7: Job orienta-tion (score 0-15)	0.003 (0.002)	-0.000 (0.002)	0.001 (0.003)	0.006 (0.003)**	0.001 (0.003)	0.000 (0.003)
All questions						
Δ Index 8: All questions (score 0-100)	0.005 (0.001)***	0.001 (0.001)*	0.005 (0.001)***	0.001 (0.001)	0.005 (0.001)***	0.001 (0.001)
N		2,775		1,967		1,428

Note: Linear regression model. Robust standard errors clustered at the individual level are given in parentheses. All models control for IEt-1, which is the question measured at t-1. All models also control for days between responses, week and year of response, health care use, criminal records, sex, ethnicity, education, caseworker fixed effects, municipality fixed effects, income and marital status, all measured the year before the first response of the survey. The models also control for unemployment history three years before the first response to the survey. ***, ** and * indicate that the estimate is statistically significant at the 99th, 95th, and 90th percent level of confidence, respectively.

When we look at the results based on the five-factor solutions, the results show that the *health and self-efficacy* dimension of employability has the largest partial correlation with employment, particularly when progression is measured over longer periods of time. Changes in the *social skills, social support* and *job orientation* factors do not predict later job chances, once other

factors are controlled for. The *caseworker – factor* indicator (which is a subset of the total caseworker indicator) also predicts job.

The correlations are generally large, in a relative sense, considering that only about 8% of the observed individuals obtain any employment. For example increasing the caseworker factor indicator by one point on the 5 point likert scale (the total sum takes a maximum value of 55) over a time period of two quarters is associated with an increase in the chance of finding a job of 0.8 percentage points, i.e. around a tenth of the mean employment level. The largest partial correlation is found for the health and self-efficacy indicator measured over four quarters, where a one point increase is associated with a 1.7 percentage point increase in the job chance. Note though that a one point increase is a far larger increase in the distribution of the health and self-efficacy scale distribution than it would be for most other indicators, because there is a much smaller variation (cf. Table 5.2).

We evaluate which of these are better at predicting job chances by the explanatory power of the different models, using the adjusted R-squared. The adjusted R-squared are very alike in all the models, varying from 18.18% with the *All* indicator to 18.72% for the five *factor indicators.* The explanatory power reaches a maximum of 20.49%, if all questions are entered separately, though at the expense of the simplicity of the indicator based models. If the questions are entered individually, the explanatory power varies mostly around 14-16%, with a minimum of 12,87% for the social support question (question 4) for the unemployed persons and a maximum of 18.66% for the caseworkers' total assessment of job chances (question 12).

These results support the claim that the indices by themselves are sound indicators for employability.

When adding individual fixed effects, it is only the indicators based on responses from the unemployed persons that significantly predict the chance of getting a job: when employment is measured over two quarters this holds true for the *total unemployed* indicator, the *health and self-efficacy* indicator and the *social skills and job orientation* indicators. When employment is measured over one quarter, significance only holds true for the *health and self-efficacy* indicator and the *All* indicator, whereas none of them are significant when employment is measured over three quarters. The partial correlations are much smaller but the standard deviations are similar, when compared to the OLS model. The insignificance is therefore not due to a limited amount of within-person variation over time. The results therefore suggests that a large part of the OLS relations are driven by between-person differences, i.e. that individuals with low mean levels of changes in progression indicators are also those with low mean levels of employment, and that this drives the correlations, irrespective of the timing. As this is particularly the case for the caseworker responses, it may suggest that the caseworkers' judgement is affected by the mean level of employability for the unemployed, as opposed to capturing time-varying employability. In this sense, the increase in the caseworker indicators over time could therefore be a process of learning about the mean level rather than a reflection of a process of experienced progression for the unemployed persons.

Finally, it is worth noting that the *levels* of all indicators are also positively related to the probability of getting a job (not shown). Therefore, the indicators are also useful for screening or profiling.

Table 5.4 Effects of progression on any job search

Independent variables	Sample 1: Two quarter change		Sample 2: Three quarter change		Sample 3: Four quarter change	
	OLS (1)	FE (2)	OLS (3)	FE (4)	OLS (5)	FE (6)
Client vs caseworker						
Δ Index 1: Unemployed person (score 0-45)	0.020 (0.002)***	0.019 (0.003)***	0.022 (0.002)***	0.021 (0.004)***	0.019 (0.003)***	0.013 (0.005)**
Δ Index 2: Caseworker (score 0-55)	0.007 (0.002)***	0.007 (0.002)***	0.003 (0.002)*	0.004 (0.003)	0.007 (0.003)***	0.009 (0.004)**
Factor analysis						
Δ Index 3: Caseworker factor (score 0-40)	0.009 (0.002)***	0.008 (0.003)***	0.007 (0.002)***	0.007 (0.004)*	0.011 (0.003)***	0.006 (0.005)
Δ Index 4: Health and self-efficacy (score 0-15)	0.040 (0.004)***	0.036 (0.006)***	0.053 (0.005)***	0.048 (0.008)***	0.044 (0.006)***	0.030 (0.012)***
Δ Index 5: Social skills (score 0-15)	-0.001 (0.005)	0.007 (0.007)	-0.007 (0.005)	0.006 (0.009)	-0.010 (0.006)	0.014 (0.011)
Δ Index 6: Social support (score 0-10)	0.002 (0.005)	0.001 (0.007)	-0.004 (0.005)	0.003 (0.009)	0.000 (0.007)	0.003 (0.013)
Δ Index 7: Job orientation (score 0-15)	0.014 (0.004)***	0.012 (0.006)**	0.008 (0.005)	0.005 (0.008)	0.010 (0.005)*	0.003 (0.009)
All questions						
Δ Index 8: All questions (score 0-100)	0.013 (0.001)***	0.012 (0.001)***	0.012 (0.001)***	0.012 (0.002)***	0.013 (0.001)***	0.011 (0.002)***
N		2,567		1,967		1,308

Note: See notes for Table 5.3.

5.3 Associations between indicator changes and job search

In this section, we explore whether employability affects job search measured by the use of any job search channels. Job search is a mediating outcome, and any relation with job searching is likely to produce a later relation with job chances as well. The results are shown in Table 5.4 for the same employability indicators as in Table 5.3.

The results show that the indicators have a stronger relationship with job searching than with actual job finding: an increase in employability indicators is associated with a larger increase in the likelihood of having searched for a job in the two to four following quarters, than in the likelihood of finding a job. The relationships are relatively stable, both when it comes to comparisons over time and across estimation method (OLS vs. FE), but the indicators based on responses from the unemployed are much more strongly related to job searching than the caseworker indicators.

When looking at the five employability indicators based on the factor solutions, the results confirm the previous findings in which the health and self-efficacy indicator has a much stronger

relation with job searching than the other indicators. Indeed, the social skills and the social support indicators are not related to job searching at all (even though one of the response options for job search channels is through friends and family).

In contrast to the results from the analysis of employment outcomes, the relationships between employability indicators and job searching are robust against the inclusion of individual specific fixed effects.

5.4 Effects of active labor market programs on employability

In this section, we present the effects of participation in active labor market programs on the change in each employability indicator. The labor market programs were described in Section 3. Table 5.5 shows summary statistics on individuals that participated in a given activity 3 months before each response and those who do not participate. The table is constructed on the basis of the largest sample (Sample 1), where changes in employability are measured across 2 quarters. Individuals may have participated in more than one type of activity. In general, we do not find large differences in background characteristics between participants and non-participants when looking at information from the register data. An exception is that nonparticipants appear to have slightly higher health care utilization than participants, which may explain their non-participation. Looking at the survey questions in period t-1, before participation in programs are measured, the table shows a pattern of increasing mean response levels (reflecting higher employability) from columns one through four. In other words, participants in other programs (mainly wage subsidy programs, but also some in ordinary education and work programs; “Nyttejob”) have the highest average values for the questions, followed by participants in internships, who appear to have higher values for the questions than participants in training and qualification. By contrast, non-participants have the lowest average values for the questions. This pattern corresponds well with initial expectations and therefore serves as further indirect support for the construct validity of the survey questions.

Table 5.5 Summary statistics by active labor market programs

	No participation	Training and qualification	Internship	Other programs
Background characteristics				
Female (in %)	59.90 (49.03)	60.71 (48.86)	62.86 (48.36)	55.64 (49.87)
Age (years)	39.94 (8.76)	38.60 (9.35)	36.97 (9.68)	38.70 (8.90)
Number of children (#)	1.11 (1.33)	0.98 (1.24)	0.88 (1.09)	1.15 (1.32)
Income (1,000 DKK)	153.58 (46.47)	149.19 (44.42)	145.47 (51.40)	152.46 (47.14)
Danish (in %)	82.20 (38.27)	86.17 (34.53)	90.38 (29.51)	84.21 (36.60)
Married (in %)	20.40 (30.32)	16.86 (37.46)	14.44 (35.17)	18.80 (39.21)
Primary education (in %)	58.70 (49.26)	60.46 (48.92)	57.59 (49.46)	62.41 (48.62)
Upper secondary education (in %)	8.00 (27.14)	7.08 (25.66)	7.97 (27.10)	5.26 (22.41)
Vocational education and training (in %)	28.20 (45.01)	26.05 (43.91)	28.57 (45.21)	23.31 (42.44)
Short cycle higher education (in %)	0.60 (7.73)	0.93 (9.59)	1.20 (10.91)	3.01 (17.14)
Medium cycle higher education (in %)	3.70 (18.89)	4.13 (19.91)	4.51 (20.77)	6.02 (23.87)
Long cycle higher education (in %)	0.80 (8.91)	1.35 (11.54)	0.15 (3.88)	0.00 (0.00)
3-year labor market history (# weeks on social transfer income)	139.89 (29.46)	138.91 (29.16)	138.62 (30.70)	140.86 (29.19)
Health care use (# visits)				
General practitioner	13.81 (12.75)	11.71 (12.55)	10.74 (9.21)	9.06 (9.25)

	No participation	Training and qualification	Internship	Other programs
Physiotherapy	0.71 (3.01)	0.65 (2.96)	0.81 (5.53)	0.20 (1.16)
Chiropractor	0.14 (1.75)	0.13 (0.97)	0.13 (0.88)	0.16 (1.30)
Psychiatry	0.72 (3.38)	0.65 (2.96)	0.62 (2.90)	0.14 (0.70)
Specialist	0.60 (2.68)	0.40 (1.76)	0.43 (1.39)	0.36 (1.54)
Dentistry	0.27 (0.57)	0.26 (0.55)	0.35 (0.60)	0.27 (0.57)
Inpatient admissions	0.37 (1.21)	0.24 (0.66)	0.21 (0.60)	0.28 (0.81)
Outpatient admissions	1.41 (2.04)	1.07 (1.63)	1.12 (1.63)	1.03 (1.66)
Emergency room visits	0.17 (0.45)	0.15 (0.56)	0.17 (0.57)	0.12 (0.39)
Crimes (in %)				
Sexual offences	0.10 (3.16)	0.08 (2.90)	0.15 (3.88)	0.00 (0.00)
Crimes of violence	1.80 (13.30)	0.59 (7.66)	0.75 (8.64)	0.00 (0.00)
Offences against property	3.90 (19.37)	3.46 (18.28)	3.16 (17.50)	2.26 (14.90)
Other crimes	0.80 (8.91)	0.25 (5.03)	0.45 (6.71)	1.50 (12.22)
Drunken driving	1.30 (11.33)	1.34 (11.54)	2.26 (14.86)	0.75 (8.67)
Vehicle defect offences	0.10 (3.16)	0.17 (4.10)	0.15 (3.88)	0.00 (0.00)
Road Traffic Act, other	2.50 (15.62)	2.61 (15.96)	3.61 (18.67)	1.50 (12.22)
Firearms Act	0.00 (0.00)	0.17 (4.10)	0.00 (0.00)	0.00 (0.00)
Income Tax And Fiscal Act	0.00 (0.00)	0.25 (5.03)	0.00 (0.00)	0.75 (8.67)
Special laws, other	1.20 (10.89)	1.10 (10.42)	1.05 (10.21)	0.75 (8.67)
Employability indicators, EI_{t-1}				
Q1: Job aspirations	2.98 (1.48)	3.02 (1.36)	3.55 (1.27)	3.71 (1.33)
Q2: Networking	3.03 (1.36)	2.95 (1.33)	3.35 (1.25)	3.24 (1.42)
Q3: Cooperation	3.71 (1.10)	3.72 (1.10)	4.04 (0.94)	3.90 (1.01)
Q4: Social support	3.67 (1.37)	3.68 (1.30)	4.00 (1.24)	3.98 (1.28)
Q5: Energy	2.42 (1.23)	2.78 (1.18)	3.31 (1.14)	3.30 (1.31)
Q6: Self-assessed health	2.19 (1.09)	2.57 (1.09)	2.98 (1.05)	3.08 (1.31)
Q7: Self-confidence	3.39 (1.31)	3.50 (1.20)	4.01 (1.02)	3.85 (1.21)
Q8: Self-efficacy	2.52 (1.29)	2.79 (1.26)	3.33 (1.22)	3.58 (1.37)
Q9: Job knowledge	2.86 (1.42)	2.90 (1.31)	3.34 (1.22)	3.61 (1.22)
Q2: Realistic beliefs	2.98 (1.53)	3.00 (1.48)	3.54 (1.32)	3.74 (1.13)
Q3: Determined	2.12 (1.25)	2.24 (1.20)	2.80 (1.31)	3.43 (1.27)
Q4: Networking	2.80 (1.37)	2.80 (1.36)	3.14 (1.33)	3.43 (1.19)
Q5: Communication skills	2.84 (1.42)	2.82 (1.35)	3.09 (1.37)	3.26 (1.22)
Q6: Cooperation skills	3.06 (1.54)	3.13 (1.48)	3.44 (1.42)	3.56 (1.27)
Q7: Instructions	3.29 (1.61)	3.33 (1.57)	3.61 (1.43)	3.63 (1.41)
Q8: Focused	2.53 (1.62)	2.67 (1.52)	3.09 (1.49)	3.37 (1.39)
Q9: Social support	2.58 (1.52)	2.64 (1.51)	3.07 (1.57)	3.14 (1.51)
Q10: Health coping skills	2.38 (1.26)	2.57 (1.25)	3.05 (1.23)	3.14 (1.30)
Q11: Health	2.72 (1.24)	2.82 (1.21)	3.13 (1.16)	3.23 (1.26)
Q12: Caseworker assessment	2.23 (1.27)	2.31 (1.21)	2.89 (1.23)	3.11 (1.29)
N	1,000	1,186	665	133

Note: Standard deviations are given in parentheses. Unless otherwise stated, all variables are measured in the year before they entered the survey. Individuals can participate in several programs during the last quarter. The table is based on the largest sample (Sample 1). Individuals may have participated in more than one type of activity.

In Table 5.6, we show the effects of participation in training and qualification, internships and other programs on the change in each of the eight employability indicators. We show results for the same 3 models and across the same 3 samples as above. The regression model in equation (2) in Section 4 is estimated using OLS and controls for the same set of covariates as in the previous section. This includes the level of the employability indicator measured at period t-1, EI_{t-1}. In light of the differences shown in Table 5.5, the latter is crucial allow us to control for differences between the participants in different programs and non-participants.

The table shows that participation in internships and other active labor market programs generally has a positive effect on the employability indicators, whereas participating in training and qualifications show more mixed results. For example, statistically participation in internships significantly increases the health and self-efficacy indicator by 0.802 from an average level of 8.11 (cf. Table 5.2). The table also shows that the effects of internship and other programs are much higher than the effects of training and qualification.

Participation in training and qualification appears not to have a statistically significant impact on the Social support indicator and the Job orientation indicator. For the other indicators, though, we detect a positive impact of participation in training and qualification.

The last column shows that the initial level of employment indicators are negatively related to the change, which to some extent occurs by construction, but this can also can be a result of regression-to-the-mean, i.e. that those who experience progression do not do so consistently, but that progression is often followed by regression.

If we associated these findings with the results from Table 5.3, we could obtain an indirect estimate of the impact of labor market programs on employment, based on the impact on progression indicators. For instance, by multiplying the impact of training and qualifications on the health and self-efficacy indicator of 0.802 with the association between a change in the indicator and employment from Table 5.2 of 0.007, we get and estimate that training and qualifications would imply an increase in the chance of employment of 0.5 percentage points.

The final row shows the actual effect on employment for comparison. The results show a negative effect of training and qualifications, a positive effect of internship and a very large positive effect of other programs. The very large coefficient may suggest that there is a selection that we have not adequately controlled for. Therefore, we have more confidence in the results in the next table, where we add individual fixed effects.

Table 5.6 Effects of labor market programs on the change in indicators – OLS

Dependent variable:	Independent variables			
	Training and qualification	Internship	Other programs	EI_{t-1}
Δ Index 1: Client (score 0-45)	0.424 (0.240)*	1.414 (0.304)***	1.559 (0.565)***	-0.313 (0.021)***
Δ Index 2: Caseworker (score 0-55)	0.621 (0.307)**	3.370 (0.370)***	3.622 (0.773)***	-0.598 (0.022)***
Δ Index 3: Caseworker factor (score 0-40)	0.407 (0.225)*	2.615 (0.272)***	2.698 (0.575)***	-0.587 (0.022)***
Δ Index 4: Health and self-efficacy (score 0-15)	0.255 (0.112)**	0.802 (0.299)***	0.802 (0.300)***	-0.386 (0.021)***
Δ Index 5: Social skills (score 0-15)	0.181 (0.088)**	0.539 (0.105)***	0.347 (0.195)*	-0.344 (0.018)***
Δ Index 6: Social support (score 0-10)	-0.013 (0.078)	0.160 (0.086)*	0.334 (0.179)*	-0.433 (0.023)***
Δ Index 7: Job orientation (score 0-15)	0.115 (0.108)	0.723 (0.126)***	0.797 (0.230)***	-0.416 (0.022)***
Δ Index 8: All (score 0-100)	1.102 (0.481)**	4.335 (0.605)***	4.801 (1.220)***	-0.398 (0.020)***
Employment				
Any employment	-0.026 (0.012)**	0.042 (0.016)**	0.272 (0.045)***	...

Note: N=2,775. Linear regression model. Robust standard errors clustered at the individual level are given in parentheses. Each row is a separate regression model. EIt-1 is the question measured at t-1 and is included as a control variable. All models also control for days between responses, week and year of response, health care use, criminal records, sex, ethnicity, education, income and marital status, all measured the year before the first response of the survey. The models also control for unemployment history three years before the first response to the survey. ***, ** and * indicate that the estimate is statistically significant at the 99th, 95th and 90th percent level of confidence, respectively.

Table 5.7 contains results with individual fixed effects added to the regression model to control for time constant effects such as underlying or initial capabilities. The table shows that, generally, the effects of training and qualification increases a little, while the effects of internship and other program decrease as compared to the OLS results in Table 5.5. For example, the effect of training and qualification on the total indicator increases from 1.102 to 1.437, while the effect of internship decreases from 4.335 to 2.356. This could indicate that individuals that receive training and qualification as compared to internships are those that have the fewest underlying capabilities, and such differences are not adequately controlled for in Table 5.6. The effects of other programs are mostly large and positive, and still significant.

The effect on employment is shown at the bottom of the table, where it can be seen that training and qualification has a negative but insignificant impact on any employment within the following 6 months, while internship increases the probability of employment by 3.6 percentage points, and other programs increase any employment by 6.8 percentage points. Given that other programs are mainly wage subsidies, this is in line with previous literature. The two latter effects are, relatively speaking, still very large effects. It should though be recalled that employment is recorded, as long as there is just 1 hour of paid employment within 6 months.

These results clearly show the usefulness of the progression indicators as intermediate outcome measures. Taken at face value, training and qualification has no impact on employment, and we would therefore judge it as ineffective. However, it has a significant and positive impact on employability indicators, and particularly on several of the ones that also predict employment: the

health and self-efficacy indicator and the total sum scores for unemployed persons and the case-worker indicator based on the factor analysis.

Table 5.7 Effects of labor market programs on the change in indicators – Fixed effects

Dependent variable	Independent variables			
	Training and qualification	Internship	Other programs	EI_{t-1}
Δ Index 1: Client (score 0-45)	0.561 (0.295)*	1.172 (0.425)***	1.443 (0.700)**	-1.043 (0.033)***
Δ Index 2: Caseworker (score 0-55)	0.865 (0.387)**	1.212 (0.482)**	1.642 (0.918)*	-1.060 (0.023)***
Δ Index 3: Caseworker factor (score 0-40)	0.544 (0.291)*	1.111 (0.356)***	1.206 (0.699)*	-1.073 (0.024)***
Δ Index 4: Health and self-efficacy (score 0-15)	0.350 (0.148)**	0.569 (0.206)***	0.558 (0.367)	-1.060 (0.036)***
Δ Index 5: Social skills (score 0-15)	0.160 (0.102)	0.316 (0.133)**	0.274 (0.219)	-1.116 (0.033)***
Δ Index 6: Social support (score 0-10)	0.037 (0.099)	0.074 (0.109)	0.502 (0.180)***	-1.141 (0.030)***
Δ Index 7: Job orientation (score 0-15)	0.104 (0.130)	0.384 (0.179)**	0.596 (0.303)**	-1.083 (0.035)***
Δ Index 8: All (score 0-100)	1.437 (0.594)**	2.356 (0.787)***	3.123 (1.404)**	-1.033 (0.026)***
Employment				
Any employment	-0.016 (0.012)	0.036 (0.019)*	0.068 (0.032)**	...

Note: Linear regression model. Robust standard errors clustered at the individual level are given in parentheses. Each row is a separate regression model. EIt-1 is the level of the indicator measured at t-1 and is included as a control variable. All models also control individual fixed effects. ***, ** and * indicate that the estimate is statistically significant at the 99th, 95th and 90th percent level of confidence, respectively.

These findings are established in models where participation in the active labor market program occurs in the quarter prior to the last measurement of employability. Most of the changes in employability therefore likely occur *while* the unemployed person is in the program. We have estimated similar models as those in Tables 5.5 and 5.6, where we lag the activation an additional quarter, i.e. essentially increase the time between activation and progression. These results, which can be seen in the appendix tables 1.5 and 1.6, show that most effects are absent in these models, which suggests that the progression mainly occurs during activation but does not persist after activation. This does not mean that non-activated persons catch up on activated persons, only that the difference does not increase any further.

6 Summary

This study adds several new insights to the existing, but surprisingly sparse, empirical literature on the measurement of employability. First of all, we use a unique data, which allows us to measure *changes* in employability indicators over time, and relate this to the chances of becoming employed. To the best of our knowledge, existing empirical literature has only looked at predictive properties of *levels* of employability. We argue that measuring changes over time is the relevant approach, if employability indicators are to be used by caseworkers in their daily work. If we merely measure the association between the level of employability and job chances, there is a larger risk of simply capturing time-persistent differences in individuals.

We also employ high-quality administrative data with information on employment and detailed information on health care use, criminal records and unemployment history. Our data set is large compared to those used in the previous literature, and we take care to measure unemployed person and caseworker responses at similar points in time and to apply changes over periods of time of a similar length. We suspect that the volatility in responses over time is far too large to be captured by simply controlling for time between responses. We control for a lot more covariates than in previous studies, and, as they might be driving a relation between employability and employment, we subject the predictive validity to a much tougher test. We construct different sets of employability indicators from factor analysis, and finally we measure the effect of active labor market interventions on the intermediate outcome of employability.

The repeated measures over time allow the use of individual fixed effect models. This allows us to further test whether the predictive properties of the employability indicators are driven by time-invariant individual differences. However, we make no claims of establishing a causal relationship between progression indicators and employment. This is important, because while a predictive indicator can be used to assess and monitor progression towards employment only a causal indicator can be used to assign the interventions needed to promote further progression.

6.1 Results

The employability survey consists of 9 questions for the unemployed person and 11 for the caseworker. We examine the internal construct validity using exploratory factor analysis and find that the caseworker part of the survey makes up one dominant factor that explains 76% of the variation in the data. Five factors can be identified – based on the simple exploratory analysis – with meaningful interpretations, and they basically explain all variation in the data. We have labelled the factors caseworker assessment, social skills, health and self-efficacy, job orientation and social support, but the labels are subject to discussion. It is important to stress that a simple exploratory analysis is by no means an exhaustive analysis of validity of the survey questionnaire, but it brings us a significant step closer to understanding what the survey is measuring. Therefore it is reassuring to conclude that other types of analysis confirm the usefulness of the survey as indicators of employability. First of all, we see clear differences in the mean level of employability – in the expected direction – across participants in different types of active employment programs.

We examined the predictive validity of the five employability indicators based on the factor analysis, as well as simple sum scores based on responses from the unemployed person alone, from the caseworker alone and the total sum score. We have found evidence that changes in all the indicators of employability are predictors of future employment, also when keeping constant the initial level of employability, relevant demographics, socio-economic status, crime, municipality,

caseworker and labor market history, and the results seem to be fairly stable when the time periods are altered over which changes in employability are measured. However, when combined, a particular subset of the unemployed responses are more strongly related to job chances than are other indicators. It is mainly the factor comprised by the combined responses to three questions concerning self-reported health, self-efficacy and daily energy. One unit improvement on this sum score is associated with a 0.6-1.7 percentage point increase in the probability of having any employment in the following 6 months. These are large effects, because only 8% obtain any employment during this period. The results persist in the fixed effect models, indicating that the indicators have a strong predictive validity. This is not the case for several other of the indicators, particularly the ones based on responses from the caseworker.

The findings of relationships between indicators and employment are to a large degree mirrored when job searching is used as an outcome. An important insight, though, is that the relationships are even stronger here. As job searching is self-reported, these results could be driven by response-bias. This concern is mitigated, however, by the fact that the relationship with job search is strongest for the health and self-efficacy indicator that was also the indicator that was most strongly related to job chances.

We finally consider the use of employability indicators as outcome in an analysis of active employment programs. We start by confirming previous findings that class room training and qualifications have no measurable effect on employment (in fixed effect models), whereas employment programs, internship and wage subsidies, have positive effects on employment. Nevertheless, training and qualifications show positive effects on several of the employability indicators that were also related to employment, and employment programs have even larger effects on employability. These effects are found both in the first quarter following (i.e. essentially *during*) activation and in the quarter following activation.

A final couple of words of caution is relevant. Firstly, we have not considered the role of attrition from the survey. As can be seen from results using samples 1, 2 and 3, where we measure employability over increasingly larger time spans, there is a non-negligible degree of attrition in the sample. How attrition affects the result is not given, however. Attrition may occur because the unemployed person finds a job. Then the positive correlation between employability and employment is likely downward biased. On the other hand, a positive bias may arise if attrition happens mainly for the least employable persons, which would introduce an upward bias into the results. It is therefore work for future research to consider how attrition affects the results. A second word of caution is that the use of the survey information may produce different kinds of bias that are not present in analysis when using administrative register data. The association between survey measures of employability and employment may be produced by a reverse causation bias, where the unemployed person or the caseworker has knowledge about a job at hand (or the impossibility of getting a job), and this is reflected in some of the answers; i.e. because an unemployed has already received a job, they answer in a specific way, not the other way around. This explanation seems unrealistic when considering changes in employability indicators over four quarters, though, and is neither capable of explaining the relation with job searching or labor market programs.

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Appendix 1

The questionnaires for unemployed persons and caseworkers are found below. The response options are likert scales of different kinds, supplemented with an option of "Do not want to answer". We show the five indicators that are constructed from the factor analysis in the third column. The 20 questions were formulated with the purpose of capturing six dimensions of employability: Job searching behavior, Health, Professional skills, Job identity and self-efficacy, Social skills and Personal skills. They are also provided in the final column of the table below.

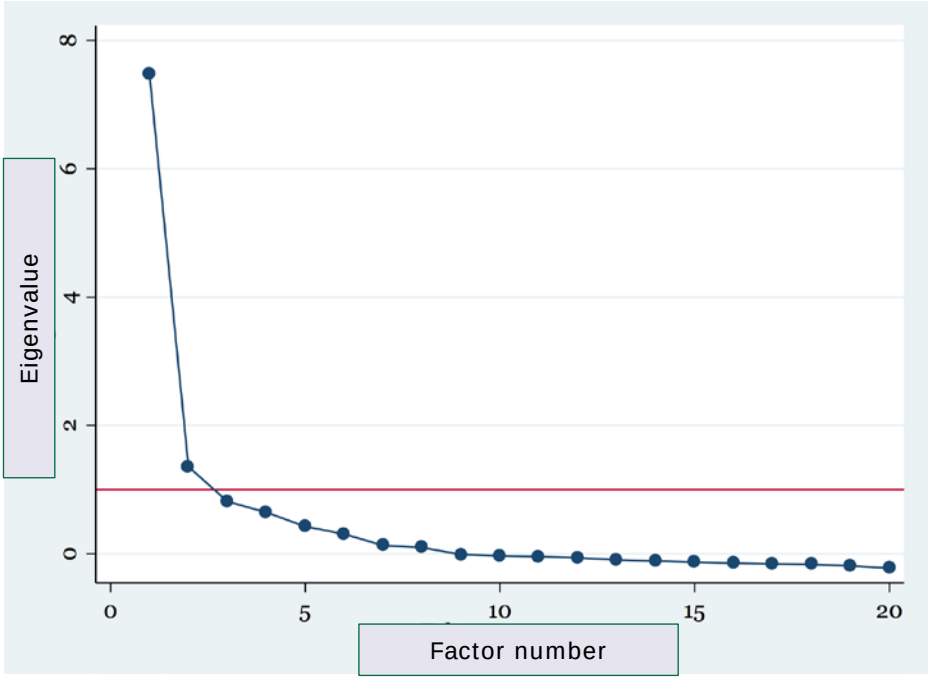
Appendix table 1.1 Employability indicators

Label	Question	New indicators from 5-factor solution	Original dimension
Unemployed person			
Q1: Job aspirations	Do you have an idea of what type of job you want?	Job Identity	Job Identity and Self-efficacy
Q2: Networking	How do you feel about contacting people you don't know (companies, educational institutions)?	Social Skills	Social Skills
Q3: Cooperation	How good are you at cooperating?	Social Skills	Social Skills
Q4: Social support	Do you have the support of family and friends when you need help?	Social Support	Social Skills
Q5: Energy	Do you have the energy in your daily life to focus on getting a job/to follow courses or get a subsidized job?	Self-rated Health and Self-efficacy	Personal Skills
Q6: Self-assessed health	How would you assess your overall (physical and mental) health in relation to holding a job?	Self-rated Health and Self-efficacy	Health
Q7: Self-confidence	Do you believe your capabilities can be used in a workplace?	Job Identity	Job Identity and Self-efficacy
Q8: Self-efficacy	Do you believe you can handle a full- or part-time job?	Self-rated Health and Self-efficacy	Job Identity and Self-efficacy
Q9: Job knowledge	Do you know what you need to do to increase your likelihood of getting a job?	Job Identity	Job Identity and Self-efficacy
Caseworker			
Q2: Realistic beliefs	Does the unemployed person have a realistic understanding of where his/her capabilities can be used?	Caseworker factor	Job Searching Behavior
Q3: Determined	To what extent does the unemployed person seem determined in relation to getting a job?	Caseworker factor	Job Identity and Self-efficacy
Q4: Networking	How do you assess the unemployed person's ability to enter into conversation with others (employers, education institutions)?	Social Skills	Social Skills
Q5: Communication skills	How good is the unemployed person at talking about himself/herself and relevant capabilities?	Caseworker factor	Job Searching Behavior
Q6: Cooperation skills	How do you assess the unemployed person's ability to cooperate with others?	Caseworker factor	Social Skills
Q7: Instructions	How do you assess the unemployed person's ability to receive and understand instructions?	Caseworker factor	Professional Skills
Q8: Focused	How do you assess the unemployed person's ability to focus on a particular task without getting distracted?	Caseworker factor	Professional Skills
Q9: Social support	To what extent does the unemployed person have a network (family/friends) that provides support in relation to getting a job?	Social Support	Social Skills
Q10: Health coping skills	To what extent is the unemployed person able to cope with his/her daily life and, at the same time, focus on getting a job?	Not used	Personal skills
Q11: Health	To what extent is the unemployed person able to cope with (physical or mental) health issues?	Caseworker factor	Health
Q12: Caseworker assessment	Do you believe that the unemployed is person will gain employment within the next year?	Caseworker factor	Job Identity and Self-efficacy

Appendix table 1.2 Unconstrained unrotated factor solutions, eigenvalues

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	7.386	6.013	0.753	0.753
Factor2	1.373	0.539	0.140	0.893
Factor3	0.834	0.191	0.085	0.978
Factor4	0.643	0.222	0.066	1.043
Factor5	0.421	0.108	0.043	1.086
Factor6	0.313	0.179	0.032	1.118
Factor7	0.134	0.040	0.014	1.132
Factor8	0.094	0.098	0.010	1.141
Factor9	-0.004	0.030	0.000	1.141
Factor10	-0.033	0.017	-0.003	1.137
Factor11	-0.050	0.018	-0.005	1.132
Factor12	-0.068	0.028	-0.007	1.125
Factor13	-0.096	0.017	-0.010	1.116
Factor14	-0.114	0.019	-0.012	1.104
Factor15	-0.133	0.016	-0.014	1.090
Factor16	-0.148	0.007	-0.015	1.075
Factor17	-0.155	0.014	-0.016	1.060
Factor18	-0.169	0.018	-0.017	1.042
Factor19	-0.187	0.040	-0.019	1.023
Factor20	-0.228		-0.023	1.000

Appendix figure 1.1 Scree plot for unconstrained solution



Appendix table 1.3 Rotated factor solutions. Non-imputed first-responses.

Unemployed:	Case-worker factor	Health and self-efficacy	Case-worker factor	Health and self-efficacy	Social skills	Social support	Health, coping and self-efficacy	Networking	Job skills	Job orientation	Social support
Q1: Job aspirations	0.2337	0.3797	0.0162	0.3696	0.1972	0.1262	0.1172	0.0198	0.0435	0.5257	0.0443
Q2: Networking	0.4625	0.1263	-0.1102	0.0949	0.7478	-0.0058	0.0657	0.7536	-0.1592	0.0582	-0.0075
Q3: Cooperation	0.4747	0.1468	0.0396	0.1311	0.5083	0.0856	0.013	0.4407	0.0189	0.2621	0.0509
Q4: Social support	0.3574	-0.04	-0.1546	-0.0388	0.0261	0.7505	-0.0571	0.0081	-0.166	0.0251	0.7517
Q5: Energy	0.1214	0.6787	-0.0173	0.6626	0.1588	0.0597	0.6561	0.1704	-0.0736	0.0431	0.0675
Q6: Self-assessed health	-0.1019	0.8315	-0.0525	0.816	-0.0174	-0.0207	0.7945	-0.0217	-0.0952	0.0654	-0.0188
Q7: Self-confidence	0.3539	0.3675	0.0562	0.3554	0.3186	0.1108	0.1419	0.1757	0.0612	0.4591	0.0433
Q8: Self-efficacy	-0.0311	0.8167	0.0169	0.8034	0.016	-0.0507	0.7565	-0.0051	-0.0239	0.1291	-0.0582
Q9: Job knowledge	0.2354	0.4051	0.0084	0.3942	0.2011	0.1367	0.188	0.0591	0.0204	0.4344	0.0716
Case-worker:											
Q2: Realistic beliefs	0.5652	0.1347	0.508	0.1578	0.026	0.1293	0.0502	-0.0438	0.4855	0.3267	0.093
Q3: Determined	0.4548	0.3443	0.4013	0.3598	0.0051	0.1461	0.334	-0.0021	0.35	0.152	0.1415
Q4: Networking	0.7371	-0.0172	0.2424	-0.0264	0.6654	0.0078	0.0228	0.7311	0.1595	-0.0318	0.0306
Q5: Communication	0.7503	-0.0581	0.4487	-0.0477	0.3992	0.0479	-0.0344	0.4308	0.3825	0.0743	0.055
Q6: Cooperation	0.7367	-0.0171	0.4798	-0.0037	0.3372	0.0581	-0.0101	0.3527	0.4187	0.1201	0.0582
Q7: Instructions	0.7379	-0.1771	0.6784	-0.1438	0.0959	0.0547	-0.1244	0.1228	0.6242	0.0974	0.0592
Q8: Focused	0.6698	0.0369	0.6402	0.0643	0.0989	0.0103	0.1252	0.1602	0.564	0.0155	0.0317
Q9: Social support	0.5474	-0.0352	0.1241	-0.0181	-0.0527	0.7411	0.0113	-0.0325	0.084	-0.0141	0.7578
Q10: Coping	0.452	0.3667	0.3855	0.3791	0.0525	0.1087	0.4971	0.156	0.2897	-0.1342	0.1554
Q11: Health	0.412	0.4113	0.4616	0.4287	-0.0363	0.045	0.5077	0.0366	0.3778	-0.0435	0.0767
Q12: Overall assessment	0.4275	0.3482	0.4458	0.367	-0.0493	0.1044	0.3835	-0.0256	0.3844	0.0754	0.1138

Note: Results from an orthogonal rotated principal factor solution with the number of factors restricted to 2, 4 and 5. Questions that have a factor loading larger than a threshold of 0.45 are shown in color. Each factor has a different color. Questions that do not enter any factor with the chosen threshold are marked in grey. 2,154 observations.

Appendix table 1.4 Effects of progression on employment – sum index. Employment defined as months without simultaneous transfer income

Dependent variables	Independent variable: Any employment					
	Sample 1: Two quarter change		Sample 2: Three quarter change		Sample 3: Four quarter change	
	OLS (1)	FE (2)	OLS (3)	FE (4)	OLS (5)	FE (6)
Unemployed vs. case worker						
Δ Index 1: Unemployed person	-0.000 (0.001)	0.001 (0.001)*	0.003 (0.001)***	0.003 (0.001)***	0.001 (0.001)	0.000 (0.001)
Δ Index 2: Case worker	0.002 (0.001)***	-0.000 (0.001)	0.001 (0.001)*	-0.002 (0.001)*	0.001 (0.001)	0.001 (0.001)
Factor analysis						
Δ Index 3: Case worker	0.002 (0.001)***	-0.000 (0.001)	0.002 (0.001)**	-0.001 (0.001)	0.003 (0.001)**	0.001 (0.002)
Δ Index 4: Health and self-efficacy	0.002 (0.001)	0.002 (0.001)	0.006 (0.002)**	0.003 (0.001)*	0.006 (0.002)**	-0.001 (0.001)
Δ Index 5: Social skills (score 0-15)	-0.002 (0.001)	0.001 (0.001)	-0.001 (0.002)	0.001 (0.002)	-0.002 (0.001)	0.002 (0.002)
Δ Index 6: Social support	0.000 (0.001)	0.000 (0.001)	0.001 (0.002)	0.002 (0.002)	-0.000 (0.002)	0.001 (0.002)
Δ Index 7: Job identity (score 0-15)	-0.001 (0.001)	0.000 (0.001)	0.000 (0.002)	0.003 (0.001)*	-0.001 (0.002)	0.001 (0.001)
All question						
Δ Index 8: All (score 0-100)	0.001 (0.000)***	0.001 (0.000)	0.002 (0.000)***	0.001 (0.000)	0.001 (0.000)**	0.001 (0.001)
N		2,775		1,967		1,428

Note: Linear regression model. Robust standard errors clustered at the individual level are given in parentheses. Each estimate is from a separate regression model. All models control for lagged level of employability, days between responses, week and year of response, health care use, criminal records, sex, ethnicity, education, income and marital status, all measured the year before the first response of the survey. The models also control for unemployment history three years before the first response to the survey. ***, ** and * indicate that the estimate is statistically significant at the 99th, 95th and 90th percent level of confidence, respectively.

Appendix table 1.5 Effects of labor market programs on the change in indicators – OLS. Active labor market program is lagged a quarter

Dependent variable	Independent variables			
	Training and qualification	Internship	Other programs	EI_{t-1}
Unemployed vs case worker				
Δ Index 1: Unemployed person (score 0-45)	0.117 (0.234)	0.408 (0.301)	0.790 (0.598)	-0.297 (0.021)***
Δ Index 2: Case worker (score 0-55)	0.359 (0.318)	2.181 (0.318)***	2.162 (0.661)***	-0.583 (0.022)***
Factor analysis				
Δ Index 3: Case worker factor (score 0-40)	0.160 (0.236)	1.464 (0.287)***	1.456 (0.505)***	-0.571 (0.022)***
Δ Index 4: Health and self-efficacy (score 0-15)	0.134 (0.111)	0.312 (0.141)**	0.621 (0.282)**	-0.371 (0.021)***
Δ Index 5: Social skills (score 0-15)	0.070 (0.090)	0.269 (0.114)**	0.156 (0.163)	-0.339 (0.018)***
Δ Index 6: Social support (score 0-10)	0.056 (0.081)	0.205 (0.095)**	0.265 (0.178)	-0.433 (0.023)***
Δ Index 7: Job identity (score 0-15)	0.080 (0.107)	0.270 (0.129)**	0.239 (0.255)	-0.402 (0.022)***
All question				
Δ Index 8: All (score 0-100)	0.553 (0.494)	2.152 (0.621)***	2.349 (1.113)**	-0.380 (0.020)***

Note: N=2,775. Linear regression model. Robust standard errors clustered at the individual level are given in parentheses. Each row is a separate regression model. EIt-1 is the question measured at t-1 and is included as a control variable. All models also control for days between responses, week and year of response, health care use, criminal records, sex, ethnicity, education, income and marital status, all measured the year before the first response of the survey. The models also control for unemployment history three years before the first response to the survey. ***, ** and * indicate that the estimate is statistically significant at the 99th, 95th and 90th percent level of confidence, respectively.

Appendix table 1.6 Effects of labor market programs on the change in indicators – Fixed effects. Active labor market program is lagged a quarter

Dependent variable	Independent variables			
	Training and qualification	Internship	Other programs	EI_{t-1}
Unemployed vs case worker				
Δ Index 1: Unemployed person (score 0-45)	0.247 (0.291)	-0.355 (0.349)	1.360 (0.838)	-1.032 (0.034)***
Δ Index 2: Caseworker (score 0-55)	0.237 (0.397)	0.547 (0.471)	1.130 (0.877)	-1.061 (0.023)***
Factor analysis				
Δ Index 3: Case worker factor (score 0-40)	0.155 (0.301)	0.236 (0.344)	0.798 (0.643)	-1.073 (0.025)***
Δ Index 4: Health and self-efficacy (score 0-15)	0.143 (0.155)	-0.122 (0.180)	0.821 (0.378)**	-1.045 (0.036)***
Δ Index 5: Social skills (score 0-15)	0.139 (0.133)	0.113 (0.134)	0.302 (0.267)	-1.118 (0.033)***
Δ Index 6: Social support (score 0-10)	-0.130 (0.099)	0.122 (0.112)	0.210 (0.209)	-1.138 (0.029)***
Δ Index 7: Job identity (score 0-15)	0.145 (0.127)	-0.189 (0.157)	0.053 (0.393)	-1.077 (0.035)***
All question				
Δ Index 8: All (score 0-100)	0.517 (0.607)	0.122 (0.706)	2.515 (1.530)	-1.029 (0.026)***

Note: Linear regression model. Robust standard errors clustered at the individual level are given in parentheses. Each row is a separate regression model. It-1 is the question measured at t-1 and is included as a control variable. All models also control individual fixed effects. ***, ** and * indicate that the estimate is statistically significant at the 99th, 95th and 90th percent level of confidence, respectively.

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