

# Vocational integration of persons with spinal cord injury in Switzerland: Shedding light on the success story



**ESCIF Forum**

21<sup>st</sup> of February 2022

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# Agenda

## 1. Switzerland in the international view

## 2. The Swiss case: Sustainable vocational integration

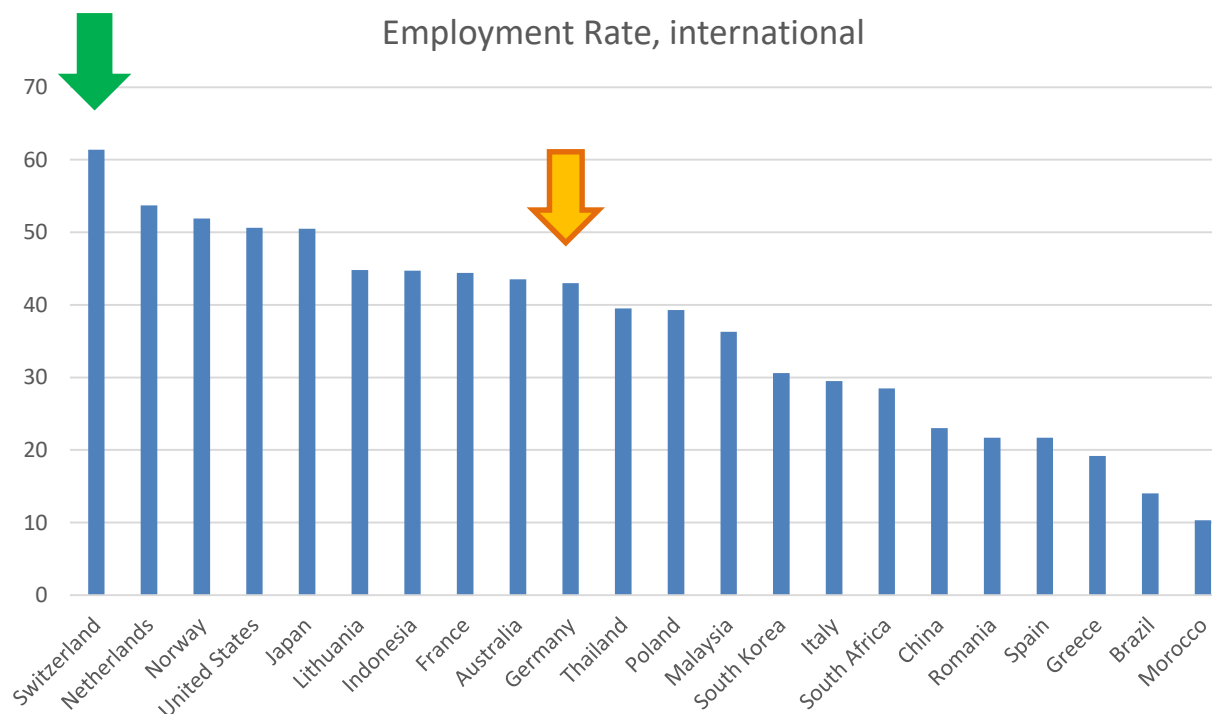
- Developing the right service structure: Synthesizing evidence and experience
- Vocational integration services at ParaWork (Swiss Paraplegic Centre)
- Job Matching Tool: An instrument promoting sustainable integration
- SwiSCI: Up-to-date epidemiological evidence
- Summary: Benefits and challenges in Switzerland

## 3. Conclusion and take home message

# Vocational integration of persons with SCI: Switzerland in the international view



# Observed employment rate



1. CH: 61.4%
2. NL: 53.7%
- ...
10. GER: 43%
- ...
22. MOR: 10.3%

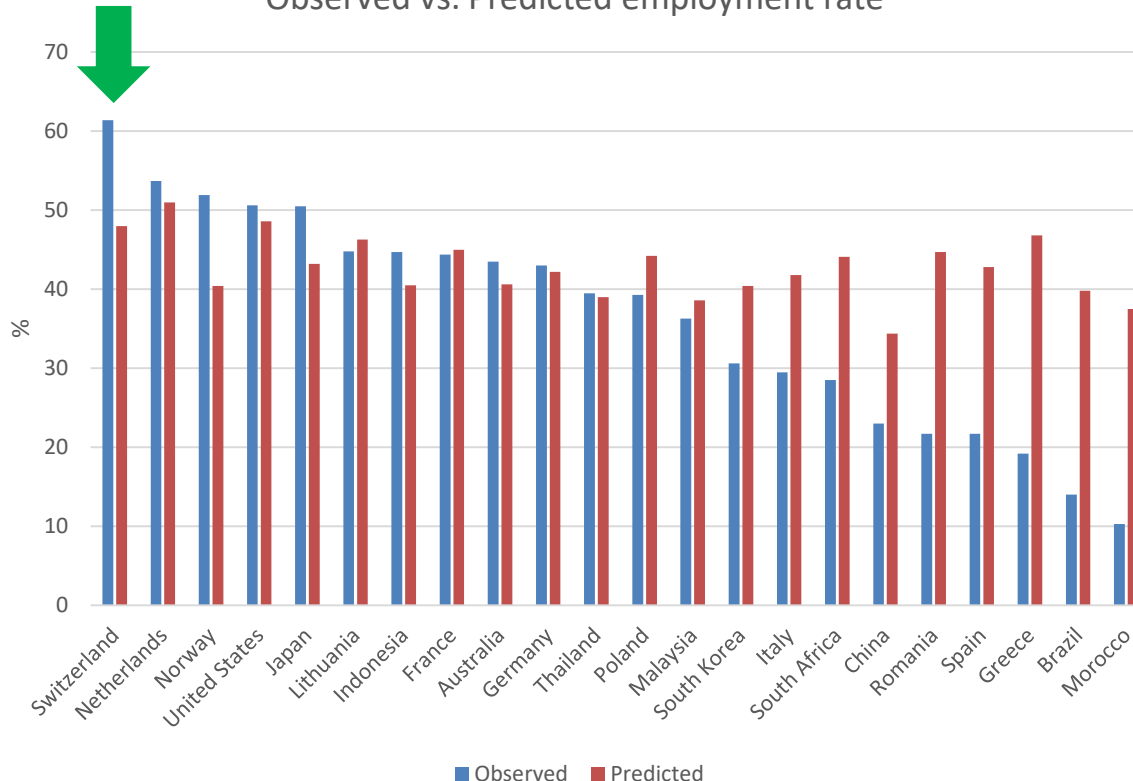
InSCI: Overall employment rate: 38%, large variation across countries

Post MW, Reinhardt JD, Avellanet M, Escorpizo R, Engkasan JP, Schwegler U, InSCI, Leilufsrud AS. Employment among people with spinal cord injury in 22 countries across the world: results from the International Spinal Cord Injury (InSCI) Community Survey. Arch Phys Med Rehabil. 2020; 101(12):2157-2166.

# Observed vs. predicted employment rates

CH: 13.4%

Observed vs. Predicted employment rate

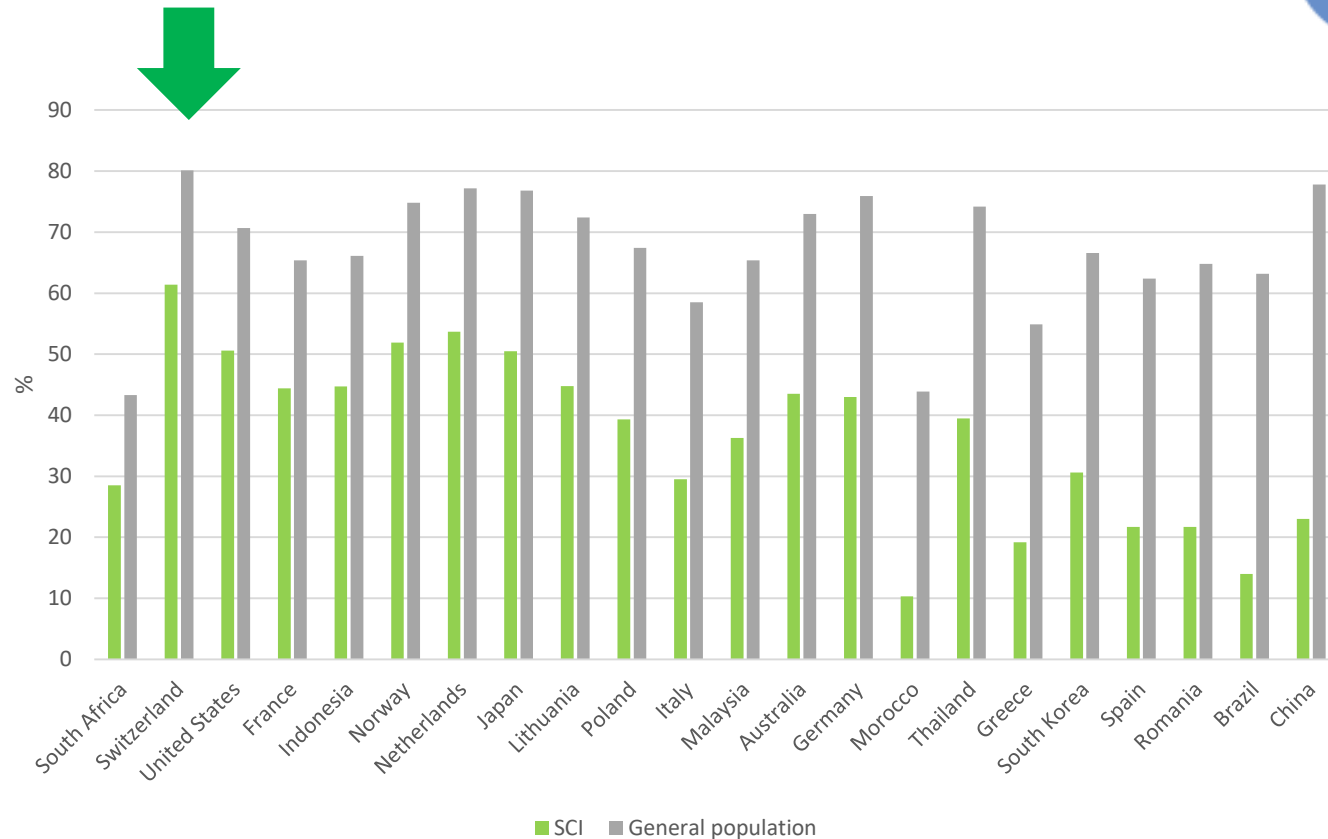


“How much better / worse the employment rate of a country is **compared with what could be expected** based on the InSCI-sample composition”  
 => E.g.: in a country sample with a higher proportion of people with complete tetraplegia we expect a lower employment rate

Higher gaps “observed vs. predicted” due to:

- **System-level factors:** Labor market policies, Social security system, Vocational integration (VI) services, Societal attitudes
- These factors are either facilitators (CH) or barriers (MOR) for VI of persons with SCI

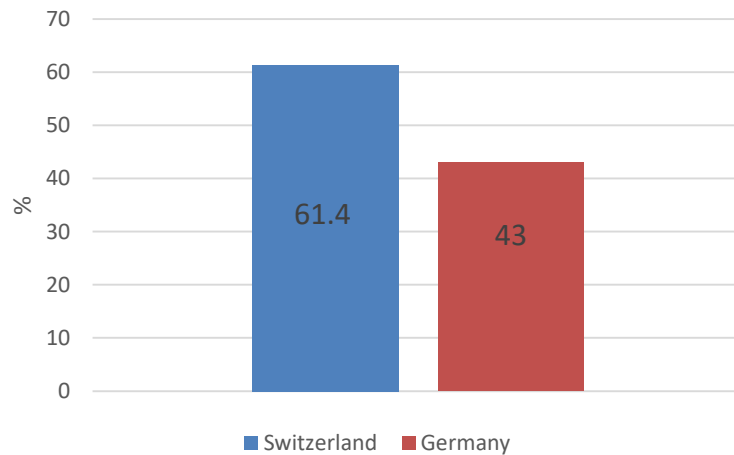
# Employment gap to general population



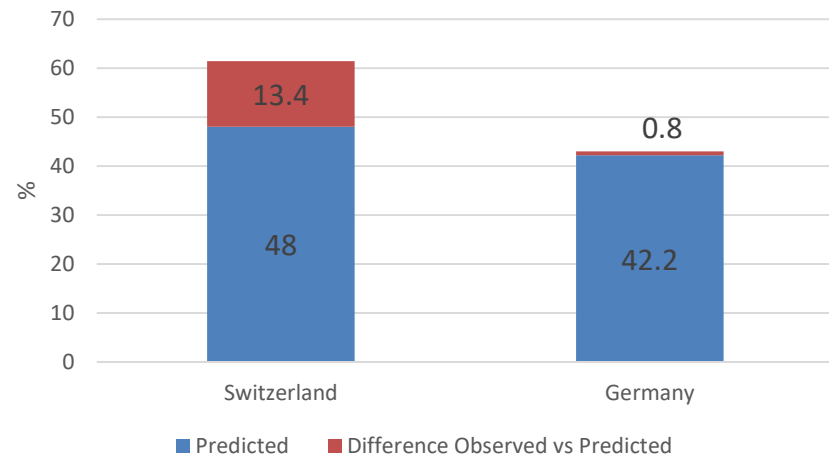
1. RSA: 14.8% (high unemployment rate in general population)
2. CH: 18.7% (high employment rate in SCI)

# Economically comparable countries: CH - GER

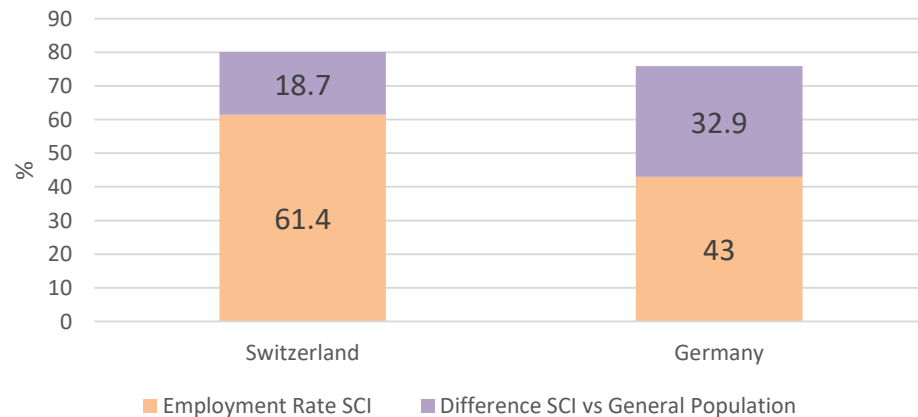
Employment rated (observed)



Employment rate: Observed vs. predicted



Employment rate: SCI vs. General population



Schwegler, Staubli. 2021. Paraplegiker

# The Swiss Case: “Sustainable vocational integration”



## ***Vocational integration (VI) at Swiss Paraplegic Group***

Research meets practice and practice meets research

Evidence- and experienced based VI practice / Practice-oriented VI research

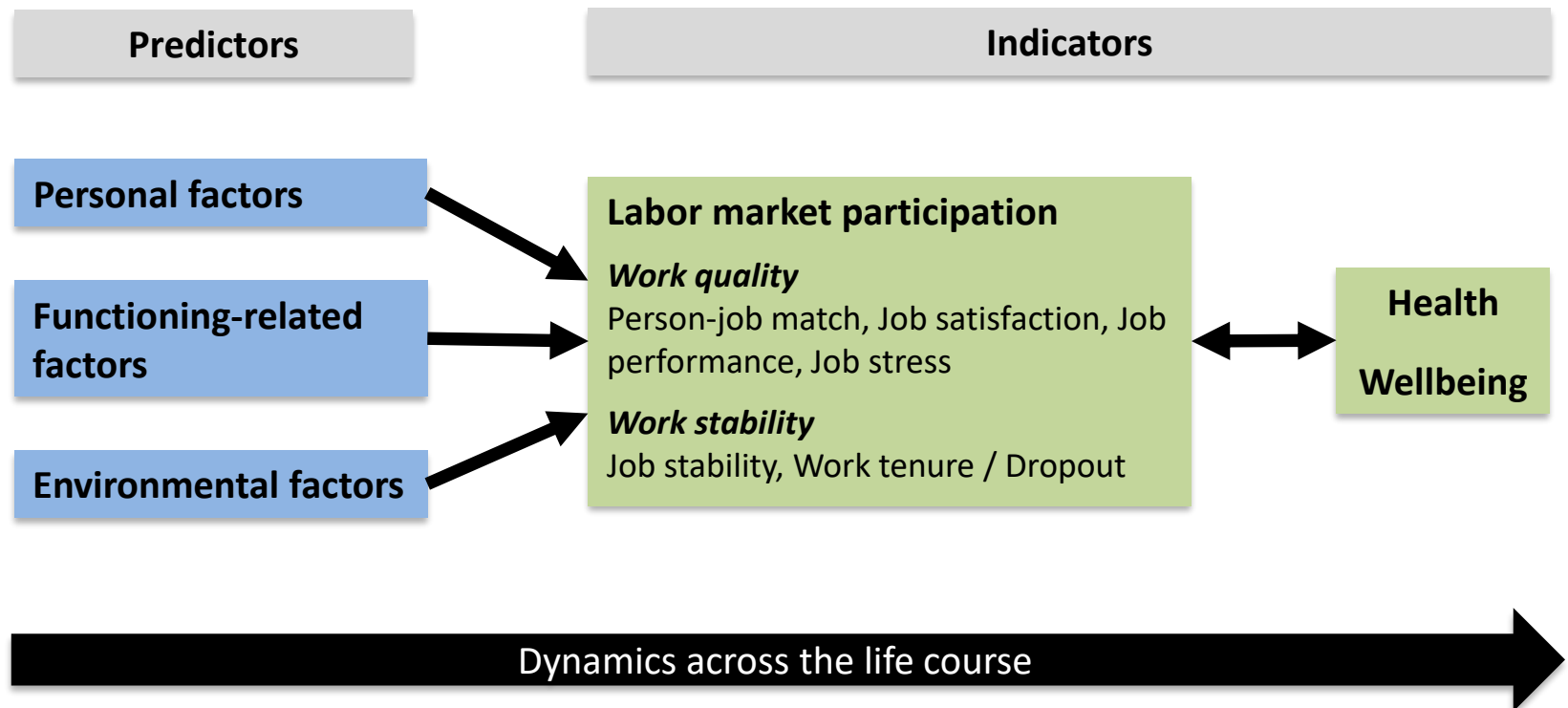
1. VI service structure, its evaluation and continuous improvement
2. Instruments for VI practice => Job matching tool
3. Counterfactual evidence for VI practice and policy



# Sustainable VI: Research & Practice

Work & Integration Group, Swiss Paraplegic Research: To **understand** sustainable VI over the life course of persons with SCI in order to **develop** evidence-based strategies at the level of practice and policy that promote sustainable working lives.

ParaWork, Swiss Paraplegic Centre: To provide services that **best possibly support** sustainable VI of persons with SCI.



# Sustainable VI of persons with SCI: A challenge

*Trezzini et al. 2018; Reinhardt et al. 2016*

Return-to-work rate: 80% (2012)

Employment rate: 53% (2012)

⇒ **DROPOUT < 25%**

Potentially due to lack of post-rehab  
VI measures (e.g. job coaching) before 2010?



Swiss Spinal Cord Injury  
Cohort study (Post et al. 2012)

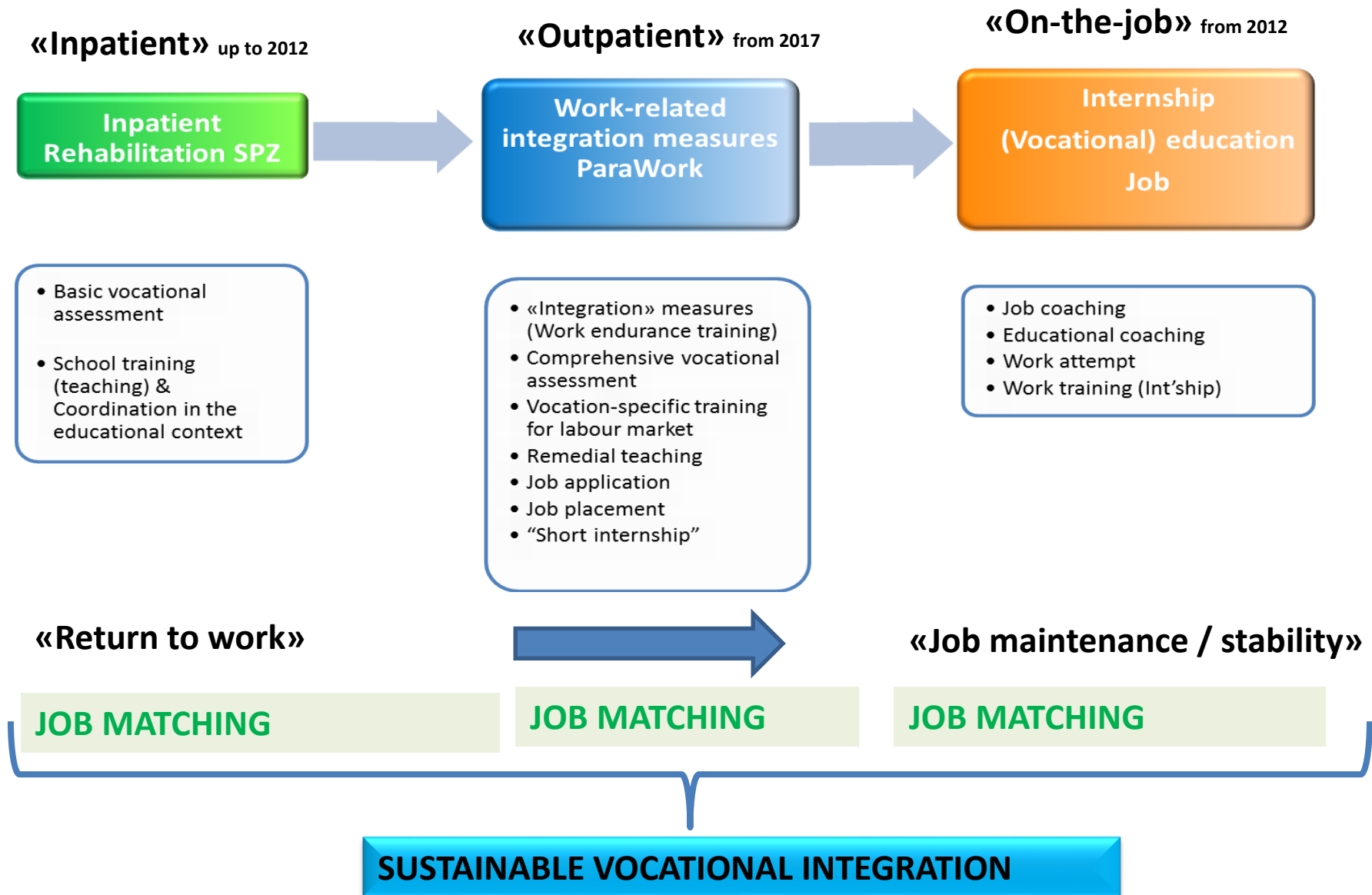


# Relevance of system-/person-level factors for sustainable VI

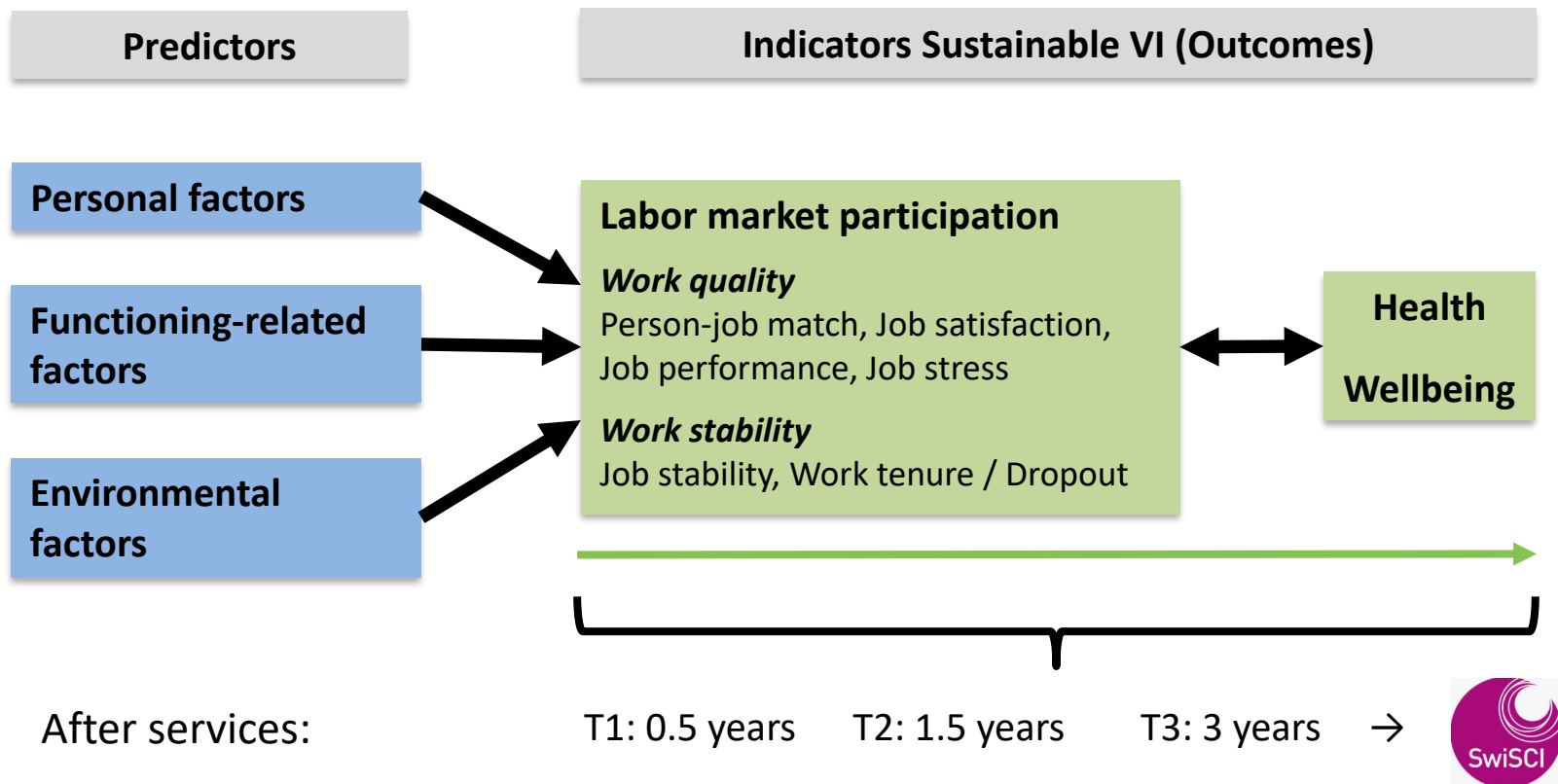
*Marti et al. 2017; Trezzini et al. 2019*

- ✓ **Community transition:** time to adapt (“learning to live”) after discharge from first rehabilitation before returning to work
  - ✓ **Psychological factors at work:** Person-job match (needs-supplies, interests/values, demands-abilities), Employment identity, Value of and attitude towards work
  - ✓ **Social security regulations:** Financial disincentives: increasing work / changing work status => pension reduction
  - ✓ **Career development possibilities and educational opportunities:** “Fast return to previous employer is not necessarily more sustainable than starting with a new employer” (e.g. clerical job at previous employer if not matching interests)
  - ✓ **Medical focus in first rehabilitation:** time in first rehab gets shorter (cost savings in health insurance) => insufficient time for VI
- ⇒ **There is a need for individualized VI measures during and after first rehab that go beyond the goal of returning people to work as fast as possible**

# ParaWork: Swiss Paraplegic Centre



# Service evaluation ParaWork – Swiss Paraplegic Research



- How effective are services regarding sustainable VI?
- What predicts success regarding sustainable VI? => Continuous optimization

# Job matching: Goal-orientation in VI services Nützi et al. 2020

## Intervention targets

## Person-job match: Key goal of VI services

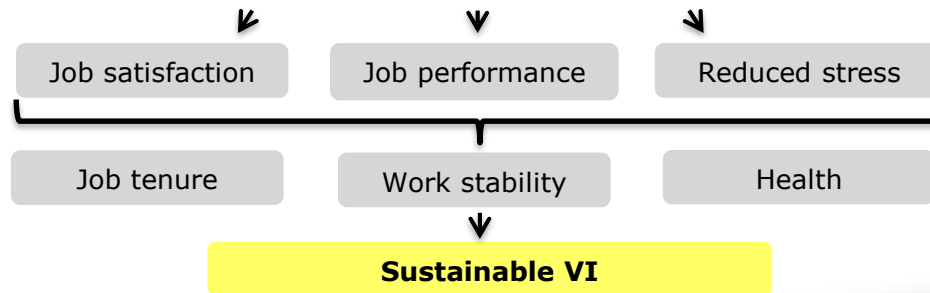
## Intervention targets

**Personal factors**  
e.g. self-efficacy

**Functioning-related factors**  
e.g. endurance

Abilities	Person	Job	Match
			Unterqualifikation   Überqualifikation
Mobility-related abilities	4	3	1
d4102 Kneeling	0	3	-3
d4103 Sitting	0	1	-1
d4104 Standing	1	5	-4
d430 Lifting and carrying objects	0	0	

**Environmental factors**  
(micro / meso/ macro)  
e.g. family support  
e.g. insurance



**Sustainable VI: Returning to a well-matching job!!!**

# Job Matching Tool

**Standardized profiles for demands and characteristics of all occupations in the Swiss Labour market (ca. 2,000)**

## **Dimensions**

- Stable factors: Abilities, interests, work styles / values
- Modifiable factors: Skills, Work activities, Knowledge
- Work context / Work environment

**Profiles indicate to what extent a matching category (n = ca. 250) is demanded in / covered by a particular occupation**

⇒ Scale from 0-5



# Job Matching Tool

[Logout](#)

## Wahl des Szenarios

Entscheiden Sie, welche Frage Sie abklären möchten und starten Sie das entsprechende Szenario

### Bekannter Job

Kann die Person eine konkrete Tätigkeit ausüben?  
Sie wissen, um welchen Job es geht

Szenario < Bekannter Job > starten

### Neuer Beruf

Welche Berufe passen zur Person?  
Passende Berufe noch unbekannt

Szenario < Neuer Beruf > starten

**Particular job => Return to work**  
*Avlues of profiles can be adjusted to the ones of the previous / an adapted job*

**New occupation => Career sel.**  
*Generates list of suitable jobs based on standardized occupational profiles*



# Job Matching Tool

[Hauptmenu](#)Ueli Mustermann (PID 123456)[Logout](#)

## Bekannter Job

Kann die Person eine konkrete Tätigkeit ausüben?

### Assessmentphase

Job Match einschätzen

[Meine Einschätzung Matchingprofil](#)

[Vergleich mit anderen Einschätzungen](#)

[Finales Matchingprofil](#)

### Interventionsphase

Interventionen dokumentieren

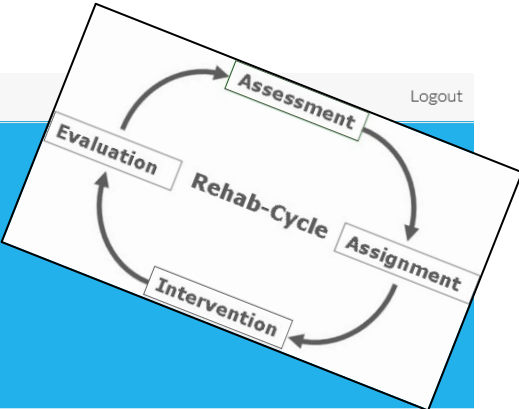
[Interventionsplanung](#)

[Interventionsverlauf](#)

### Evaluationsphase

Massnahme evaluieren

[Evaluationsbericht](#)



## Kooperation



## Datengrundlage

## Kontakt

Schweizer Paraplegiker-Forschung

[barbara.schiffmann@paraplegie.ch](mailto:barbara.schiffmann@paraplegie.ch)

Tel. [+41 41 939 65 73](tel:+41419396573)

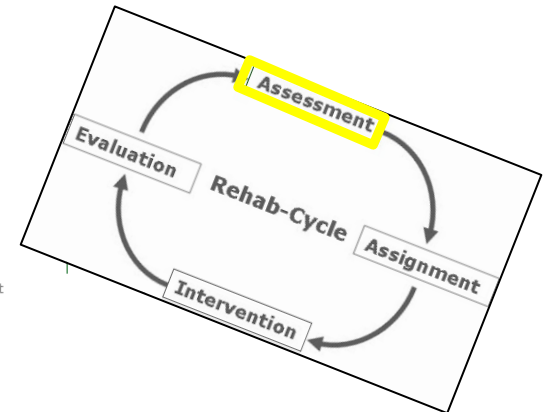
# Job Matching Tool - Assessment

## Matching profile: Previous / adapted job

Gewählter Beruf: Dozent/in (Universität) <Psychologie> (bisheriger Job

Person

Job  
° angepasst

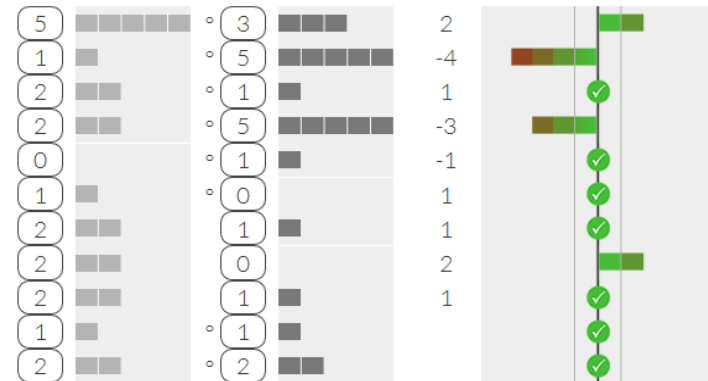


### ✓ Grundfertigkeiten

(0 = nicht vorhanden, 5 = voll ausgeprägt)

#### Körperliche Grundfertigkeiten

- Sitzen
- Stehen
- Knien, Hocken, Kriechen
- Gehen und Rennen
- Steigen und Klettern
- Gleichgewicht halten
- Sich beugen oder umdrehen
- Heben, Tragen und Schieben
- Manuelles Arbeiten und Bedienen von Werkzeugen oder Steuerungen
- Überkopfarbeiten durchführen
- Repetitive Bewegungen ausführen



### ✓ Komplexe Fertigkeiten

(0 = nicht vorhanden, 5 = voll ausgeprägt)

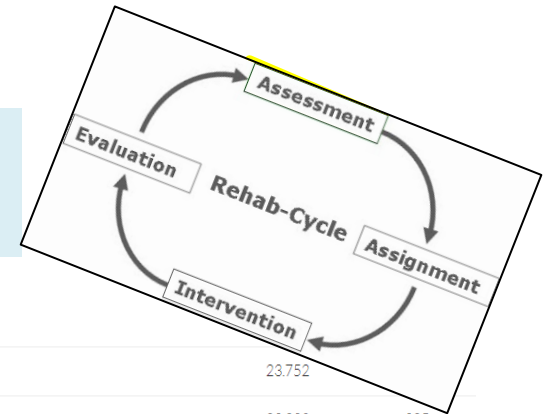
#### Technische Kompetenzen

- Computer bedienen
- Informationen dokumentieren
- Zeichnen und Entwerfen
- Geräte entwickeln und anpassen



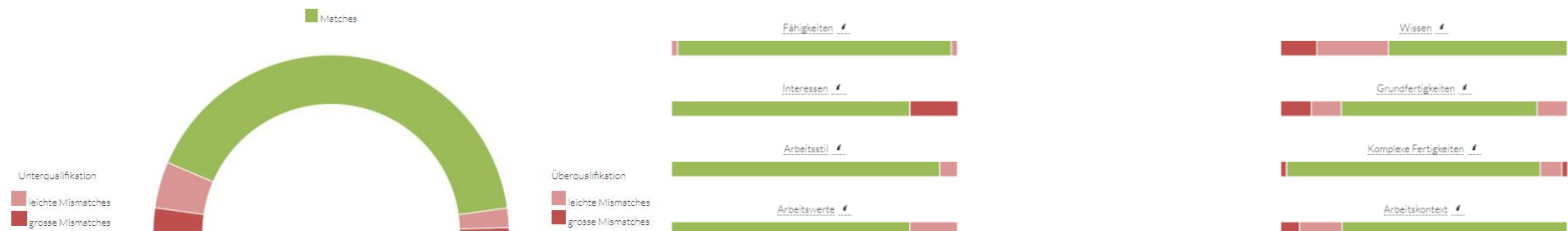
# Job Matching Tool - Assessment

## Career selection: Suitable / well-matching occupations



Rang	Beruf	Passung		
1	Printmedienpraktiker/in (Druckweiterverarbeitung) EBA		23,752	
2	Mechanikpraktiker/in (Maschinenbau) EBA		23,239	225
3	Anlagen- und Apparatebauer/in EFZ		23,046	224
4	Medientechnologe/-login (Siebdruck) EFZ		22,704	224
5	Printmedienpraktiker/in (Siebdruck) EBA		22,451	224
6	Printmedienverarbeiter/in EFZ		22,326	224
7	Architekturmodellbauer/in (Metall, Kunststoff) EFZ		22,105	224





Passung mit dem Beruf Mechanikpraktiker/in (Maschinenbau) EBA







# Job Matching Tool - Intervention

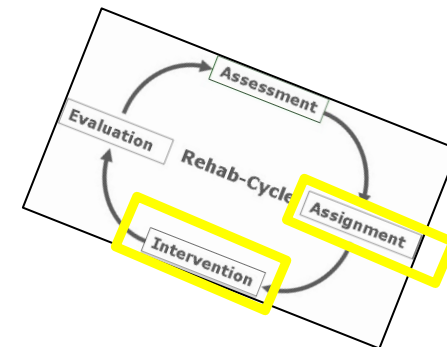
## Planning / assigning interventions: Mismatches

Laufende oder abgeschlossene Interventionen:

Person	Job	Match
<b>Heben, Tragen und Schieben</b>  2 	5 	-3 
Interventionen Person und/oder Job Physio: Kraftaufbau Armen	Bemerkungen zu Verlauf (neue Einträge oben) Stand 24.09.2020: Deutliche Fortschritte erzielt. Kann 3kg Kisten vom Boden heben.	Intervention abgeschlossen <input type="checkbox"/>
Interventionen Person und/oder Job Hebevorrichtung für Arbeitsplatz organisieren	Bemerkungen zu Verlauf (neue Einträge oben) Stand 24.09.2020: Diskussion mit Arbeitgeber im Gange	Intervention abgeschlossen <input type="checkbox"/>
+ Intervention hinzufügen		

## Monitoring progress: Goal achievement: Closing mismatches

Person	Job	Match
<b>Enger Arbeitsplatz</b>  4 	4 	
Interventionen Person und/oder Job Arbeitsplatzanpassungen: Ausweitung der Bürotüre, Anschaffung schmalere Tisch	Bemerkungen zu Verlauf (neue Einträge oben) Stand 24.09.2020: Anpassungen umgesetzt Stand 18.07.2020: Arbeitsplatzabklärung	Intervention abgeschlossen <input checked="" type="checkbox"/>
+ Intervention hinzufügen		



# Job Matching Tool - Evaluation

## Evaluationsbericht

18.09.2020

**Name:** Mustermann

**Vorname:** Ueli

**Geburtsdatum:** 01.04.2001

**Job:** Elektroplaner/in EFZ

**Kontakt ParaWork:** Marina Nützi

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### Gesamtübersicht

**Veränderung:** 08.10.2019 - 17.06.2020

**Interventionsziele:** 9

**Erreichte Interventionsziele:** 1

**Offene Interventionsziele:** 8

### Detailansicht

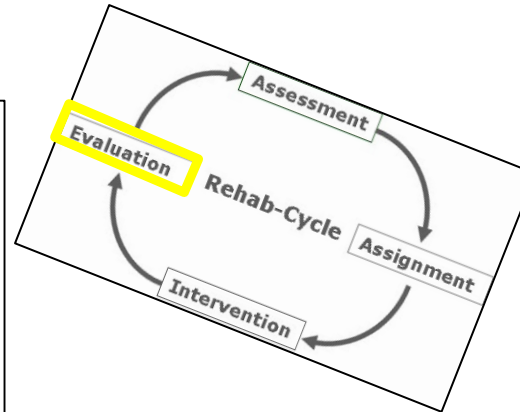
#### Interventionen

	Person	Job	Match
Sprechen	17.06.2020 08.10.2019		Unterqualifikation   Überqualifikation
Kritisches Denken	17.06.2020 08.10.2019		
Wissenschaftliche Fertigkeiten	17.06.2020 08.10.2019		
Fachwissen aktualisieren und anwenden	17.06.2020 08.10.2019		
Arbeitspensum	17.06.2020 08.10.2019		
Geregelte Arbeitszeiten	17.06.2020 08.10.2019		
Detailtreue	17.06.2020 08.10.2019		

0 = nicht vorhanden, nicht möglich  
5 = voll ausgeprägt, problemlos möglich

#### Querschnittlähmungsspezifische Faktoren

	Person	Job	Match
Flexible Arbeitsaufgaben (inklusive selbstständige Planung und Erledigung der Arbeitsaufgaben)	17.06.2020 08.10.2019	Ja Ja	Nein Nein
Unterstützung durch Mitarbeiter	17.06.2020 08.10.2019	Ja Ja	In Abklärung/Anpassung In Abklärung/Anpassung



## Evaluation report

- Planning of follow-up measures
- Communication with disability insurer

# Job matching tool: Benefits for VI process

**Case coordination tool:** Systematic approach for an individualized goal-oriented VI process

## Validity

Focus on the client's individual work environment

=> Client-centred

## Effectiveness (Vocational integration, career selection)

Person-job match as key indicator for sustainable VI

=> Long-term success

## Efficiency

Visualization of overarching goal in VI process for all key parties involved (client, VI professional, insurance, employer)

=> Transparent communication base

# Up-to-date epidemiological evidence from CH

*Schwegler et al. 2021*



## 1. Labour market participation (LMP) 2012 vs. 2017

2012 => 56%	}	Presumably partly due to improved service quality...
2017 => 61%		

## 2. Main determinants of LMP (“risk factors”)

- ✓ Static: sex (female), nationality (non-Swiss), SCI severity (incomplete tetraplegia)
- ✓ Temporal: age (over 54)
- ✓ Dynamic: lower education, lower functional independence, chronic pain
- ✓ Policy: Disability pension level (higher LMP probability for those with partial compared to those with no or full pension)

# Counterfactual predictions of employment rate

Schwegler et al. 2021



n=1,715

Parameter [% of participants shifted to next level]	Employment rate (%)	Max Δ (%)
<b>Education level</b> [ <i>Compulsory, Vocational, Secondary, University</i> ]		
0 – 20 – 40 – 60 – 80 – 100	61% - 66%	5%
<b>Pain</b> [ <i>Major, Moderate, Mild, None</i> ]		
0 – 20 – 40 – 60 – 80 – 100	61% - 63%	2%
<b>Depression</b> [ <i>Yes, No</i> ]		
0 – 20 – 40 – 60 – 80 – 100	61% - 62%	1%
<b>Functional independence</b> [ <i>10 points improvement on SCIM-SR score</i> ]		
0 – 20 – 40 – 60 – 80 – 100	61% - 67%	6%
<b>IV pension level</b> [ <i>full → ¾; ¼, ¾, none → ½</i> ]		
0 – 20 – 40 – 60 – 80 – 100	61% - 76 %	15%

- ✓ Counterfactual (what-if) predictions: Highest improvement of employment rates for strategies that increase **functional independence**, promote **education**, reduce **pain**, or promote a shift to **partial disability pensions**



# Enhancing LMP prospects in SCI

## Static and temporal determinants => “Vulnerable groups for poor LMP”

- *Female, non-Swiss, aged over 54, complete tetraplegia* => Need for further research, **personalized VI guidelines** and **more inclusive labor market policies**

## Dynamic determinants => “Intervention targets to improve LMP”

- Promoting **post-SCI educational opportunities**, **functional independence trainings / assistive devices** to enhance LMP prospects
- Pain as a key factor for LMP *[Marti et al. 2016]*

## Policy determinants => “System-level factors to improve LMP”

- Part-time work (in CH typically related to a partial pension): Suitable for most persons with SCI, while full-time work (if beyond persons' physical or mental capacities) can trigger premature labor market dropouts
- **Promoting partial instead of full disability pension levels** while ensuring sufficient part-time work opportunities as a promising strategy towards sustainable work

# The Swiss case: Benefits and challenges

## Benefits

- ✓ Goodwill by (previous) employers => early contact
- ✓ Educational opportunities
- ✓ Societal attitude towards SCI => Propaganda Swiss Paraplegic Foundation
- ✓ Good rehab services (VI services as part of first rehab)
- ✓ Good VI services (Comprehensive, SCI specialized, need-driven, paid by disability insurer) => “lifelong” care
- ✓ Evidence-based monitoring and continuous improvement of VI services (Service Evaluation ParaWork – Swiss Paraplegic Research)

## Challenges

- ✓ Social security regulations:
  1. Lack of focus on sustainable VI of disability insurance providers: Striving for full-time instead of part-time work; Short-term oriented thinking (pension vs. investments in VI services)
  2. Financial disincentives due to pension regulations

# Take home message

## 1. Importance of system-level factors

- **Social security system** (financial (dis)incentives by pension, funding of VI services); **Labor market policies**; **Societal attitudes** towards LMP of PwD

## 2. Importance of VI services / education

- **VI services**: SCI-specialized, lifelong”, comprehensive (personal, functioning, environment), goal-oriented (job matching => sustainable VI)
- **Educational opportunities**

## 3. Personal factors interact with system-level factors

“Feeling recognized as a **full working member of society** with **career development opportunities** increase return-to-work motivation” => Value one sees in one’s work

## 4. Research on sustainable VI of persons with SCI

- ✓ **Prognostic models**: Longitudinal (mixed-methods) life course research
- ✓ **International comparison** of services and systems: Learning for and from
- ✓ **Counterfactuals**: Policy-driven results, i.e. tangible numbers informing directly about promises of policy strategies => Targeted knowledge translation

## Take home message

Sustainable VI can only be achieved if (a) *jobs are being offered to persons with SCI* and (b) *these jobs match the persons abilities / needs / interests*

⇒ **Beneficial for individuals (wellbeing/health) AND society (costs)**

1. Convincing governments that **ensuring work opportunities** for persons with SCI is not only a requirement by the CRPD but also in the interest of the society

2. **Empowerment** to see a **value in working** => Individuals want to contribute as full members to society

⇒ **System- and person-related factors are interlinked and creating meaningful work opportunities empowers affected individuals to work**





**Thanks for your attention!**

Urban Schwegler / Stefan Staubli

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