School-to-work transitions of youth in Australia: A sequence analysis approach using LSAY

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Don’t we already know (almost) everything about school-to-work transitions?

- Transitions are becoming more complex
- A new approach to an old question: **Sequence analysis**
What are the different types of pathways that young people follow in their journey from school to work?

What are the characteristics of these young people in different pathways, especially those who experience labour market churning?

What are the possible predictors of different pathways and their policy implications?
Longitudinal Surveys of Australian Youth

- Nationally representative survey of Australian youth aged 15-25 year-old.
- Collects information on school, post-school education and training, employment, life satisfaction and many more.
- Cohort of year 2006 (Y06).

Longitudinal Surveys of Australian Youth – LSAY (@LSAY15)
@lsay_au
Isayprogram
What is a sequence?

- A **sequence** is an ordered list of elements

Example:

<table>
<thead>
<tr>
<th>Age 16</th>
<th>Age 17</th>
<th>Age 18</th>
<th>Age 19</th>
<th>Age 20</th>
<th>Age 21</th>
<th>Age 22</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mary</td>
<td>Educ</td>
<td>Educ</td>
<td>Educ</td>
<td>Educ</td>
<td>Educ</td>
<td>Emp</td>
</tr>
<tr>
<td>Tim</td>
<td>Educ</td>
<td>Emp</td>
<td>Educ</td>
<td>Educ</td>
<td>Unemp</td>
<td>Emp</td>
</tr>
</tbody>
</table>

Source: Fasang (2014)
Data and methodology

3,186 individuals who completed all 10 waves (2007-2016).
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Derive sequence of activity for each individual.
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Distance obtained is used to classify sequences into clusters of pathways (Cluster analysis).
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- Derive sequence of activity for each individual.
- Quantify the dissimilarity between each pair of sequence (Sequence analysis).
- Distance obtained is used to classify sequences into clusters of pathways (Cluster analysis).
- Identify variables highly associated with a certain pathway using multinomial logistic regression model.
Deriving the sequence of activity for each individual

Monthly education/labour market activities from January 2007 to December 2016:

- School
- University
- VET (including Apprenticeships/Traineeships)
- Employed (full-time/part-time)
- Unemployed
- Not in the labour force (NILF)/Not in education, employment or training (NEET)
Deriving the sequence of activity for each individual
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The dissimilarity or distance between each pair of sequence is quantified using a distance measure (*sequence analysis*).

- Optimal matching
- Distance based on counts of common attributes
- Distance between state distributions

Data and methodology

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Derive sequence of activity for each individual.

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Distance obtained is used to classify sequences into clusters of pathways (Cluster analysis).

Identify variables highly associated with a certain pathway using multinomial logistic regression model.
Typology of pathways

- **Pathway 1: Higher education and work (60%)**
  - Extended period of higher education followed by employment

- **Pathway 2: Early entry to full-time work (23%)**
  - An ‘express’ pathway to employment.

- **Pathway 3: Mix of higher education and VET (8%)**
  - An extended period of higher education and VET activity, combined with short and intermittent episodes of employment, eventually leading to employment or further VET activity.

- **Pathway 4: Mixed and repeatedly disengaged (5%)**
  - Display signs of labour market churning and periods of NILF/NEET. Persistent churning indicates tenuous labour market attachment.

- **Pathway 5: Mostly working part-time (4%)**
  - Engaged in labour market activity relatively early, and mostly employed part-time.
Pathway 1: Higher education and work
Pathway 1: Higher education and work

- Relatively linear pathway
- Highest proportion of youth from metropolitan areas (77%), highest SES quartile (43%), and who completed Year 12 (99%).
- Lowest proportion of youth with an Indigenous background (2%), married early (4%) or had children early (0.3%).
Pathway 2: Early entry to full-time work

- The quickest entry to employment.
- Predominantly male (64%).
- High proportion studied a VET subject in school (44%).
- Almost half (47%) undertook apprenticeship/traineeship.
- Highest share of employment at age 25 (97%)
Pathway 3: Mixed of higher education and VET

- Predominantly female (61%).
- Spent the most number of months in post-school VET activities.
- More than half ended up in either community and personal service workers (23%), professionals (20%), and clerical and administrative workers (17%).
Pathway 4: Mixed and repeatedly disengaged

- The most non-linear pathway (highest share experiencing more than 10 transitions).
- Female dominant.
- Most number of months disengaged from the labour market or unemployed.
- One in two remained unemployed at age 25.
- The highest incidence of teenage marriages or parenting, disability, early school leavers and youth from the lowest SES quartile.
Pathway 5: Mostly working part-time

- Spent the most time in part-time employment between the age 16 to 25.
- One in two had no post-school qualification at the age of 25.
- At age 25, young people in this pathway were primarily in community and personal services, clerical, administrative and sales occupations.
Commercial break!

• D3 data visualisation showing the movement of young people between the different activities, on a monthly basis, across 10 years.

• Developed by Kelly Marshall and Peter Mlotkowski (NCVER).

• Visualising school to work pathways using LSAY.
Key variables in youth transitions

- Individual’s socio-economic and demographic factors act as facilitators or barriers to various transition pathways.
- VET provides another avenue to employment pathways.
- School education and achievement showed significant relationship with the pathways that young people follow.
- Studying vocational subject in school and non-academic pathways have significant positive association.
Extensions, limitation and future research

• Limitation
  – Attrition issue in data

• Extensions and future research
  – Compare across other LSAY cohort
  – Explore the role of attitudes and aspirations of young people
  – Pathways of early school leavers
Thank you!