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SEQUENCE ANALYSIS OF THE MIGRATION BIOGRAPHIES OF RUSSIANS

Field of study 38.04.04 Public Administration and Municipal Management

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Introduction

- Research Parameters and Key Terms
- Theoretical Framework of the Migration Life-Course Concept
- Analytical Framework of the Migration Life-Course Concept

Research Parameters and Key Terms (p.3-5)

- Research goals
 - Explore the given data
 - Explicate migration as a life-course concept
 - Assess at what Zelinsky mobility transition model stage Russia is
- Research problem
 - The factors and position of migration in the Russian life course, and Russia's position in the Zelinsky mobility transition model
- Research questions
 - What are the factors of migration in the Russian life course?
 - What is the position of migration within the Russian life course?
 - Where does Russia lie on in the Zelinsky mobility transition model?
- Data
 - Survey: Person, Family, Society [*Chelovek, Sem'ya, Obshchestvo*] (PFS, or *ChSO*)
 - Carried out in 2013 by RANEPA
 - Large survey covering many socioeconomic and demographic topics
- Design and Methodology
 - An observational study with a quantitative methodology
- Novelty
 - The data are relatively new
 - The use of sequence analysis and other life-course methods in this context is also relatively new

Research Parameters and Key Terms (p.3-5)

• Hypotheses

- (1) Migration, i.e. the likelihood of migration, is influenced by the following factors:
 - Military service (for men only)
 - Sex
 - Generation
 - Type of locality
 - Type of locality at birth
 - Type of education
- ...whereby military service, male sex, younger generation, large or mid-level urban locality, large or mid-level urban locality at birth, and higher level of education are associated with a *higher* likelihood of migration.
- (2) The position of migration in the life course is at the beginning, i.e., migration is a biography-initiating event which enables the subsequent acquisition of further events
- (3) Russia's position in Zelinsky's mobility transition model is in the "advanced society" phase

• Key Terms

• Migration

- From PFS: (1) how many times, from the age of 15, did you move to another locality for a period of more than 6 months, and (2) what were the month and year of each move?

• Factor

- A condition which satisfies many causal prerequisites but does not sufficiently explain the outcome

• Biography

- Sequentially ordered record of events of a life which reveal important characteristics

• Event

- Individual developments in a life

Theoretical Framework (p.5-18)

- Key Migration and Mobility Theories
 - Economic dimension: rational actors, wage gap, push-pull, dual labor markets
 - Social dimension: collective decision-making, relative deprivation, networks
 - Geographical and other dimensions: Zelinsky mobility transition model (5 stages from traditional to super advanced)
 - Types: international, frontier, rural-urban, inter/intra-urban, and circular migration
 - Mobility transition parallels demographic, epidemiological, occupational, educational, and social transitions
 - Social mobility and territorial mobility are virtually inextricable
- Migration as a Life-Course Concept
 - Migration as a dynamic, probabilistic process whose intensity is unequal across the life course (Kley and Mulder, 2009; etc.)
 - The key factors of migration at different life stages (Whisler et al, 2008; etc.), including social and place ties (Haas and Serow, 1997; Ni Laoire, 2008) and social institutions like marriage (Raley, Durden, and Wildsmith, 2004)
 - The movement of individuals between rural and urban areas at different life stages (Stockdale and Catney, 2012; etc.)
 - The impact of migration on employment and retirement (Robison and Moen, 2000; etc.) and family and social environments (Kulu and Milewski, 2007; etc.)
- Migration Life-Course Concept in Soviet and Russian Contexts
 - Economics as destiny: Russians migrate for better jobs and to improve standard of living, and at young ages
 - Institutions restricting migration: internal passports, *propiska*/registration
 - Institutions instigating migration: employment “by distribution” and “by limit”, military, territorial-industrial complexes
 - Migration/urbanization pattern: movement up the urban chain; urbanites least likely to move

Analytical Framework (p.18-19)

- Data and Unit of Analysis
 - Full PFS sample: 9,557 individual survey respondents
 - 4,333 men and 5,224 women
 - Subsets are used in the exploratory data analysis and sequence analysis
- Methods and Tools
 - Exploratory data analysis
 - Descriptive statistics and distributions
 - Odds ratios
 - Analysis of variance and Tukey HSD tests
 - Correlation testing (Pearson, Spearman, and Kendall)
 - Event history analysis
 - Cox regression with survival and hazard functions
 - Sequence analysis
 - Chronograms
- General variables
 - Age, Sex, Generation, Type of Location at Survey, Type of Location at Birth, Type of Education, Religion, Federal District, and Country of Birth
- Age variables
 - Age at First Job, Age at Completing Education, Age at First Migration, and Age at Second Migration
- Fact variables
 - Fact of Job, Fact of Education, Fact of Migration, Fact of Migration for Men only, and Fact of Military Service
- Other variables
 - Time Interval (in Months) between First and Second Migrations, First Migration Destination Type, Second Migration Destination Type, Reason for First Migration, and Reason for Second Migration

1. Exploratory Data Analysis of Russian Migration Biographies

- 1.1. Descriptive Statistics and Distributions Across Sexes, Generations, etc.
- 1.2. Odds Ratios (ORs)
- 1.3. One-Way Analysis of Variance (ANOVA) and Tukey HSD Post-Tests
- 1.4. Correlation Testing (Pearson, Spearman, and Kendall)
- 1.5. Takeaways and Migration Profiles

1.1. Descriptive Statistics and Distributions (p.20-30)

- Age at first migration
 - Mean: 21.478
- Age at second migration
 - Mean: 26.778
- Interval between migrations
 - Mean: 81.338 (6.75 years)
- Russians are largely immobile
 - Especially among younger generations, most do not migrate
- Migration destination type
 - Cities/towns are the most common destination for first and second migrations
 - Large cities are also common for first migrations, namely among younger generations
 - Rural areas are somewhat common for second migrations, namely among younger generations (and women!)
- Reason for first migration
 - Military is foremost for men, though latest generation also goes for education
 - Education and family are foremost for women
- Reason for second migration
 - Men who migrate 2+ times move for military first, then for work or family
 - Women who migrate 2+ times move largely for education first, then family
- Large city dwellers are among the least mobile
- Share shift from Central FD to Volga FD between first and second migrations
- Military service is strongly linked to men's mobility
- Older generations tend to migrate at later ages, especially for the second migration
 - This is particularly true of women
- Older generations have longer intervals between migrations

1.1. Descriptive Statistics and Distributions

Table 1: Descriptive statistics for ratio-level variables
Source: Person, Family, Society (2013)

	Age at survey	Age at completion of education	Age at first job	Age at first migration	Age at second migration	Time interval between migrations (months)
N	9557	9557	8827	3562	1362	1362
Mean	45.578	19.472	20.042	21.478	25.778	81.338
Median	45	19	20	18	22	51
Mode	35	17	20	18	20	24
Std. Deviation	17.499	4.549	4.073	8.492	9.374	88.854
Minimum	18	9	4	14	15	3
Maximum	93	67	68	80	78	673

1.1. Descriptive Statistics and Distributions

Table 2: Fact of migration (zero, one, or two [or more] migrations), by sex and generation
Source: Person, Family, Society (2013)

		No migrations	One migration	Two migrations
Men	1930-1939	48.43%	23.32%	28.25%
	1940-1949	49.44%	26.12%	24.44%
	1950-1959	51.09%	29.09%	19.83%
	1960-1969	52.45%	27.33%	20.22%
	1970-1979	61.39%	24.26%	14.36%
	1980-1986	62.83%	25.17%	12.00%
	1990-1995	79.16%	16.21%	4.63%
Women	1930-1939	55.09%	26.30%	18.62%
	1940-1949	56.51%	22.71%	20.77%
	1950-1959	59.32%	23.26%	17.42%
	1960-1969	64.78%	23.21%	12.01%
	1970-1979	70.08%	20.60%	9.32%
	1980-1986	72.61%	18.98%	8.42%
	1990-1995	80.28%	17.61%	2.11%

Top 33%, 20%, and 10% color-coded; top 5% in bold text

1.1. Descriptive Statistics and Distributions

Table 3: First migration destination type, by sex and generation

Source: Person, Family, Society (2013)

		Large city/regional center	City/town	Rural area
Men	1930-1939	15.65%	60.87%	23.48%
	1940-1949	16.11%	65.56%	18.33%
	1950-1959	18.93%	64.79%	16.27%
	1960-1969	19.85%	64.69%	15.46%
	1970-1979	20.51%	64.42%	15.06%
	1980-1986	27.80%	55.16%	17.04%
	1990-1995	26.26%	62.63%	11.11%
Women	1930-1939	19.23%	57.26%	23.50%
	1940-1949	25.51%	54.66%	19.84%
	1950-1959	22.49%	59.35%	18.16%
	1960-1969	23.61%	57.70%	18.69%
	1970-1979	26.54%	52.69%	20.77%
	1980-1986	31.33%	52.41%	16.27%
	1990-1995	34.52%	55.95%	9.52%

Top 33%, 20%, and 10% color-coded; top 5% in bold text

1.1. Descriptive Statistics and Distributions

Table 4: Second migration destination type, by sex and generation

Source: Person, Family, Society (2013)

		Large city/regional center	City/town	Rural area
Men	1930-1939	22.22%	57.14%	20.63%
	1940-1949	16.09%	59.77%	24.14%
	1950-1959	19.71%	59.12%	21.17%
	1960-1969	27.88%	53.33%	18.79%
	1970-1979	34.48%	43.97%	21.55%
	1980-1986	26.39%	51.39%	22.22%
	1990-1995	22.73%	50.00%	27.27%
Women	1930-1939	16.49%	49.48%	34.02%
	1940-1949	18.64%	54.24%	27.12%
	1950-1959	17.72%	59.49%	22.78%
	1960-1969	16.35%	60.58%	23.08%
	1970-1979	20.99%	49.38%	29.63%
	1980-1986	23.53%	49.02%	27.45%
	1990-1995	11.11%	33.33%	55.56%

Top 33%, 20%, and 10% color-coded; top 5% in bold text

1.1. Descriptive Statistics and Distributions

Table 5: Reason for first migration, by sex and generation
Source: Person, Family, Society (2013)

		For education	For work	For family reasons	For military service	For other reasons
Men	1930-1939	15.65%	22.61%	22.61%	29.57%	9.57%
	1940-1949	15.56%	18.89%	22.22%	36.11%	7.22%
	1950-1959	16.57%	15.98%	21.01%	39.05%	7.40%
	1960-1969	16.49%	16.49%	19.07%	41.24%	6.70%
	1970-1979	14.74%	17.63%	22.12%	40.06%	5.45%
	1980-1986	21.08%	14.80%	24.66%	33.63%	5.83%
	1990-1995	37.37%	12.12%	12.12%	35.35%	3.03%
Women	1930-1939	20.51%	26.92%	45.30%	0.43%	6.84%
	1940-1949	30.77%	19.43%	42.51%	1.62%	5.67%
	1950-1959	35.77%	18.70%	39.84%	0.00%	5.69%
	1960-1969	34.43%	19.67%	40.00%	0.33%	5.57%
	1970-1979	34.23%	11.92%	47.31%	0.38%	6.15%
	1980-1986	38.55%	12.65%	42.77%	0.60%	5.42%
	1990-1995	51.19%	9.52%	33.33%	0.00%	5.95%

Top 33%, 20%, and 10% color-coded; top 5% in bold text

1.1. Descriptive Statistics and Distributions

Table 6: Reason for second migration, by sex and generation
Source: Person, Family, Society (2013)

		For education	For work	For family reasons	For military service	For other reasons
Men	1930-1939	7.94%	41.27%	28.57%	14.29%	7.94%
	1940-1949	11.49%	37.93%	33.33%	12.64%	4.60%
	1950-1959	6.57%	27.74%	31.39%	21.90%	12.41%
	1960-1969	10.30%	33.94%	25.45%	17.58%	12.73%
	1970-1979	3.45%	34.48%	37.07%	14.66%	10.34%
	1980-1986	4.17%	38.89%	33.33%	15.28%	8.33%
	1990-1995	13.64%	13.64%	31.82%	27.27%	13.64%
Women	1930-1939	6.19%	38.14%	51.55%	0.00%	4.12%
	1940-1949	6.78%	38.14%	49.15%	0.85%	5.08%
	1950-1959	6.33%	31.01%	51.27%	1.90%	9.49%
	1960-1969	6.73%	32.69%	50.96%	0.96%	8.65%
	1970-1979	2.47%	25.93%	67.90%	0.00%	3.70%
	1980-1986	9.80%	25.49%	58.82%	0.00%	5.88%
	1990-1995	22.22%	11.11%	55.56%	0.00%	11.11%

Top 33%, 20%, and 10% color-coded; top 5% in bold text

1.1. Descriptive Statistics and Distributions

Table 7: Type of locality at time of survey, by sex, generation, and number of migrations
Source: Person, Family, Society (2013)

		Men			Women		
		Large city/regional center	City/town	Rural area	Large city/regional center	City/town	Rural area
No migrations	1930-1939	40.7%	32.4%	26.9%	40.8%	34.1%	25.1%
	1940-1949	37.5%	34.7%	27.8%	48.6%	34.0%	17.4%
	1950-1959	41.6%	36.0%	22.4%	42.2%	37.7%	20.1%
	1960-1969	44.2%	34.3%	21.5%	46.7%	33.0%	20.3%
	1970-1979	43.8%	34.5%	21.8%	40.2%	38.4%	21.3%
	1980-1986	42.4%	35.5%	22.0%	42.5%	37.7%	19.8%
	1990-1995	42.6%	32.7%	24.7%	42.4%	39.5%	18.1%
Only one migration	1930-1939	44.2%	36.5%	19.2%	39.4%	35.8%	24.8%
	1940-1949	32.3%	41.9%	25.8%	34.9%	41.1%	24.0%
	1950-1959	34.8%	39.8%	25.4%	38.4%	36.5%	25.1%
	1960-1969	34.5%	40.4%	25.1%	34.8%	39.8%	25.4%
	1970-1979	28.1%	47.4%	24.5%	33.5%	36.3%	30.2%
	1980-1986	33.1%	39.7%	27.2%	39.1%	33.9%	27.0%
	1990-1995	42.9%	32.5%	24.7%	44.0%	40.0%	16.0%
Two or more migrations	1930-1939	38.1%	42.9%	19.0%	32.0%	36.1%	32.0%
	1940-1949	29.9%	42.5%	27.6%	27.1%	47.5%	25.4%
	1950-1959	29.2%	38.0%	32.8%	24.7%	41.8%	33.5%
	1960-1969	30.9%	36.4%	32.7%	22.1%	40.4%	37.5%
	1970-1979	31.9%	37.1%	31.0%	29.6%	28.4%	42.0%
	1980-1986	34.7%	34.7%	30.6%	33.3%	31.4%	35.3%
	1990-1995	31.8%	31.8%	36.4%	11.1%	33.3%	55.6%

Top 33%, 20%, and 10% color-coded; top 5% in bold text

1.1. Descriptive Statistics and Distributions

Table 8: Type of locality at birth, by sex, generation, and number of migrations
Source: Person, Family, Society (2013)

		Men			Women		
		Large city/regional center	City/town	Rural area	Large city/regional center	City/town	Rural area
No migrations	1930-1939	37.0%	42.6%	20.4%	32.1%	45.6%	22.3%
	1940-1949	35.8%	49.4%	14.8%	40.8%	38.9%	20.2%
	1950-1959	36.8%	45.3%	17.8%	37.7%	45.7%	16.5%
	1960-1969	40.7%	43.5%	15.9%	41.4%	43.5%	15.2%
	1970-1979	39.5%	45.6%	14.9%	35.8%	48.9%	15.3%
	1980-1986	37.7%	49.6%	12.7%	40.0%	46.4%	13.6%
	1990-1995	39.6%	41.5%	18.9%	37.7%	50.6%	11.7%
Only one migration	1930-1939	19.2%	42.3%	38.5%	13.9%	36.5%	49.6%
	1940-1949	23.7%	41.9%	34.4%	19.4%	45.7%	34.9%
	1950-1959	17.4%	51.7%	30.8%	11.4%	49.8%	38.9%
	1960-1969	23.3%	49.3%	27.4%	14.9%	52.2%	32.8%
	1970-1979	22.4%	58.2%	19.4%	20.1%	52.0%	27.9%
	1980-1986	22.5%	56.3%	21.2%	21.7%	57.4%	20.9%
	1990-1995	16.9%	57.1%	26.0%	13.3%	54.7%	32.0%
Two or more migrations	1930-1939	14.3%	47.6%	38.1%	18.6%	28.9%	52.6%
	1940-1949	14.9%	37.9%	47.1%	12.7%	45.8%	41.5%
	1950-1959	16.1%	40.9%	43.1%	16.5%	35.4%	48.1%
	1960-1969	18.8%	47.3%	33.9%	12.5%	53.8%	33.7%
	1970-1979	15.5%	58.6%	25.9%	18.5%	49.4%	32.1%
	1980-1986	25.0%	45.8%	29.2%	11.8%	51.0%	37.3%
	1990-1995	18.2%	50.0%	31.8%	11.1%	77.8%	11.1%

Top 33%, 20%, and 10% color-coded; top 5% in bold text

1.1. Descriptive Statistics and Distributions

Table 9: Type of education, by sex, generation, and number of migrations
Source: Person, Family, Society (2013)

		Men			Women		
		Higher education	Vocational education	General education	Higher education	Vocational education	General education
No migrations	1930-1939	15.7%	25.9%	58.3%	11.5%	26.8%	61.7%
	1940-1949	15.9%	36.4%	47.7%	19.3%	36.1%	44.5%
	1950-1959	23.5%	43.1%	33.4%	23.8%	45.0%	31.2%
	1960-1969	25.5%	46.5%	28.0%	35.7%	39.9%	24.4%
	1970-1979	29.4%	45.2%	25.4%	37.9%	38.3%	23.8%
	1980-1986	36.9%	43.2%	19.9%	54.5%	31.1%	14.3%
	1990-1995	9.3%	23.7%	67.0%	12.6%	22.5%	64.9%
Only one migration	1930-1939	7.7%	34.6%	57.7%	5.8%	27.0%	67.2%
	1940-1949	19.4%	47.3%	33.3%	20.2%	35.7%	44.2%
	1950-1959	19.4%	47.3%	33.3%	26.5%	46.4%	27.0%
	1960-1969	24.2%	48.9%	26.9%	34.8%	42.8%	22.4%
	1970-1979	26.0%	51.5%	22.4%	40.2%	34.6%	25.1%
	1980-1986	29.8%	43.7%	26.5%	41.7%	33.9%	24.3%
	1990-1995	9.1%	36.4%	54.5%	18.7%	28.0%	53.3%
Two or more migrations	1930-1939	28.6%	28.6%	42.9%	23.7%	22.7%	53.6%
	1940-1949	33.3%	35.6%	31.0%	28.8%	47.5%	23.7%
	1950-1959	31.4%	43.1%	25.5%	31.6%	51.9%	16.5%
	1960-1969	35.2%	42.4%	22.4%	41.3%	49.0%	9.6%
	1970-1979	35.3%	43.1%	21.6%	35.8%	45.7%	18.5%
	1980-1986	20.8%	44.4%	34.7%	45.1%	41.2%	13.7%
	1990-1995	18.2%	40.9%	40.9%	22.2%	44.4%	33.3%

Top 33%, 20%, and 10% color-coded; top 5% in bold text

1.1. Descriptive Statistics and Distributions

Table 10: Type of religion, by sex, generation, and number of migrations
Source: Person, Family, Society (2013)

		Men			Women		
		Orthodoxy	Islam	Other religion	Orthodoxy	Islam	Other religion
No migrations	1930-1939	90.9%	9.1%	0.0%	92.0%	7.6%	0.4%
	1940-1949	90.4%	8.8%	0.9%	93.5%	6.1%	0.4%
	1950-1959	90.8%	7.8%	1.4%	93.1%	5.5%	1.4%
	1960-1969	89.5%	10.1%	0.4%	92.1%	6.5%	1.4%
	1970-1979	91.8%	8.2%	0.0%	92.3%	5.9%	1.8%
	1980-1986	89.7%	8.6%	1.7%	91.7%	7.7%	0.6%
	1990-1995	86.7%	9.6%	3.7%	87.6%	10.3%	2.1%
Only one migration	1930-1939	93.1%	6.9%	0.0%	93.6%	4.8%	1.6%
	1940-1949	96.6%	3.4%	0.0%	91.1%	5.4%	3.6%
	1950-1959	82.6%	15.7%	1.7%	87.4%	12.1%	0.6%
	1960-1969	81.8%	15.3%	2.9%	88.4%	10.9%	0.7%
	1970-1979	86.2%	11.4%	2.4%	84.2%	14.3%	1.5%
	1980-1986	92.3%	6.6%	1.1%	85.5%	13.3%	1.2%
	1990-1995	89.6%	8.3%	2.1%	86.0%	8.0%	6.0%
Two or more migrations	1930-1939	86.1%	11.1%	2.8%	94.0%	3.6%	2.4%
	1940-1949	96.5%	1.8%	1.8%	97.8%	2.2%	0.0%
	1950-1959	89.2%	7.2%	3.6%	90.7%	9.3%	0.0%
	1960-1969	85.4%	10.7%	3.9%	96.1%	2.6%	1.3%
	1970-1979	81.4%	15.7%	2.9%	98.4%	0.0%	1.6%
	1980-1986	91.8%	6.1%	2.0%	87.2%	12.8%	0.0%
	1990-1995	93.8%	6.3%	0.0%	100.0%	0.0%	0.0%

Top 33%, 20%, and 10% color-coded; top 5% in bold text

1.1. Descriptive Statistics and Distributions

Table 11a: Federal district, by generation and number of migrations (men)
Source: Person, Family, Society (2013)

		Central	Northwe stern	Souther n	N. Caucasu s	Volga	Ural	Siberian	Far Eastern
No migrations	1930-1939	26.9%	7.4%	12.0%	9.3%	26.9%	4.6%	11.1%	1.9%
	1940-1949	30.7%	9.1%	8.0%	8.5%	22.2%	9.1%	8.5%	4.0%
	1950-1959	26.1%	8.5%	12.5%	6.5%	20.1%	8.2%	13.9%	4.2%
	1960-1969	29.0%	9.3%	9.1%	8.6%	21.3%	7.2%	12.1%	3.3%
	1970-1979	25.4%	9.7%	10.7%	7.7%	22.0%	8.5%	12.5%	3.6%
	1980-1986	28.4%	12.2%	9.5%	7.4%	19.1%	8.0%	12.5%	2.9%
	1990-1995	28.7%	10.6%	11.2%	6.1%	21.0%	6.6%	11.4%	4.3%
Only one migration	1930-1939	26.9%	9.6%	11.5%	3.8%	25.0%	9.6%	11.5%	1.9%
	1940-1949	31.2%	10.8%	5.4%	4.3%	20.4%	7.5%	16.1%	4.3%
	1950-1959	31.8%	6.5%	10.0%	9.5%	21.4%	7.5%	10.0%	3.5%
	1960-1969	32.3%	9.4%	10.3%	6.7%	13.0%	8.5%	16.6%	3.1%
	1970-1979	29.1%	6.6%	7.1%	6.1%	23.5%	5.6%	17.9%	4.1%
	1980-1986	27.8%	5.3%	9.3%	7.3%	19.9%	7.9%	14.6%	7.9%
	1990-1995	32.5%	5.2%	2.6%	1.3%	22.1%	6.5%	22.1%	7.8%
Two or more migrations	1930-1939	23.8%	12.7%	14.3%	4.8%	11.1%	12.7%	17.5%	3.2%
	1940-1949	19.5%	5.7%	10.3%	5.7%	24.1%	10.3%	18.4%	5.7%
	1950-1959	21.9%	12.4%	6.6%	3.6%	21.9%	8.8%	19.0%	5.8%
	1960-1969	18.8%	8.5%	8.5%	3.6%	28.5%	8.5%	15.8%	7.9%
	1970-1979	31.9%	8.6%	7.8%	3.4%	20.7%	10.3%	11.2%	6.0%
	1980-1986	23.6%	8.3%	1.4%	2.8%	34.7%	12.5%	8.3%	8.3%
	1990-1995	18.2%	4.5%	0.0%	9.1%	45.5%	0.0%	18.2%	4.5%

Top 33%, 20%, and 10% color-coded; top 5% in bold text

1.1. Descriptive Statistics and Distributions

Table 11b: Federal district, by generation and number of migrations (women)
Source: Person, Family, Society (2013)

		Central	Northwe stern	Souther n	N. Caucasu s	Volga	Ural	Siberian	Far Eastern
No migrations	1930-1939	28.9%	9.8%	10.1%	7.0%	21.6%	8.7%	11.8%	2.1%
	1940-1949	31.5%	7.8%	8.4%	5.9%	22.4%	7.5%	12.5%	4.0%
	1950-1959	30.7%	10.0%	8.4%	6.9%	19.1%	7.8%	13.4%	3.7%
	1960-1969	31.4%	10.0%	9.6%	6.6%	18.9%	9.4%	10.3%	3.7%
	1970-1979	25.9%	9.9%	9.2%	7.4%	19.9%	8.5%	14.9%	4.3%
	1980-1986	27.7%	10.2%	10.7%	5.7%	21.4%	8.9%	11.6%	3.9%
	1990-1995	25.7%	10.5%	8.5%	7.9%	20.5%	10.8%	12.6%	3.5%
Only one migration	1930-1939	26.3%	6.6%	10.9%	8.0%	24.8%	7.3%	10.9%	5.1%
	1940-1949	24.8%	11.6%	6.2%	9.3%	19.4%	7.8%	14.0%	7.0%
	1950-1959	21.8%	9.5%	12.8%	9.0%	18.0%	7.1%	15.6%	6.2%
	1960-1969	26.4%	9.0%	7.0%	8.0%	23.4%	8.0%	13.9%	4.5%
	1970-1979	30.7%	6.1%	6.1%	8.4%	22.3%	5.0%	15.6%	5.6%
	1980-1986	35.7%	7.8%	10.4%	7.8%	21.7%	3.5%	11.3%	1.7%
	1990-1995	30.7%	4.0%	6.7%	5.3%	24.0%	9.3%	10.7%	9.3%
Two or more migrations	1930-1939	22.7%	9.3%	14.4%	6.2%	27.8%	6.2%	10.3%	3.1%
	1940-1949	18.6%	12.7%	11.9%	1.7%	24.6%	9.3%	18.6%	2.5%
	1950-1959	20.3%	10.8%	7.6%	4.4%	30.4%	7.6%	12.7%	6.3%
	1960-1969	19.2%	7.7%	10.6%	1.9%	27.9%	9.6%	14.4%	8.7%
	1970-1979	18.5%	7.4%	17.3%	2.5%	27.2%	6.2%	16.0%	4.9%
	1980-1986	17.6%	7.8%	3.9%	3.9%	31.4%	11.8%	11.8%	11.8%
	1990-1995	22.2%	22.2%	0.0%	0.0%	33.3%	0.0%	22.2%	0.0%

Top 33%, 20%, and 10% color-coded; top 5% in bold text

1.1. Descriptive Statistics and Distributions

Table 12: First migration destination type, by sex, generation, and number of migrations
Source: Person, Family, Society (2013)

		Men			Women		
		Large city/regional center	City/town	Rural area	Large city/regional center	City/town	Rural area
Only one migration	1930-1939	13.50%	55.80%	30.80%	25.50%	51.10%	23.40%
	1940-1949	15.10%	64.50%	20.40%	23.30%	53.50%	23.30%
	1950-1959	15.40%	65.20%	19.40%	19.40%	60.20%	20.40%
	1960-1969	18.40%	62.30%	19.30%	23.90%	53.70%	22.40%
	1970-1979	19.90%	65.30%	14.80%	26.30%	50.80%	22.90%
	1980-1986	26.50%	51.70%	21.90%	31.30%	48.70%	20.00%
	1990-1995	27.30%	62.30%	10.40%	33.30%	57.30%	9.30%
Two or more migrations	1930-1939	17.50%	65.10%	17.50%	10.30%	66.00%	23.70%
	1940-1949	17.20%	66.70%	16.10%	28.00%	55.90%	16.10%
	1950-1959	24.10%	64.20%	11.70%	26.60%	58.20%	15.20%
	1960-1969	21.80%	67.90%	10.30%	23.10%	65.40%	11.50%
	1970-1979	21.60%	62.90%	15.50%	27.20%	56.80%	16.00%
	1980-1986	30.60%	62.50%	6.90%	31.40%	60.80%	7.80%
	1990-1995	22.70%	63.60%	13.60%	44.40%	44.40%	11.10%

Top 33%, 20%, and 10% color-coded; top 5% in bold text

1.1. Descriptive Statistics and Distributions

Table 13a: Reason for first migration, by generation and number of migrations (men)
Source: Person, Family, Society (2013)

		For education	For work	For family reasons	For military service	For other reasons
Only one migration	1930-1939	11.5%	25.0%	25.0%	26.9%	11.5%
	1940-1949	8.6%	23.7%	24.7%	33.3%	9.7%
	1950-1959	9.0%	18.9%	22.9%	41.3%	8.0%
	1960-1969	10.3%	20.2%	25.6%	37.2%	6.7%
	1970-1979	11.7%	17.9%	25.0%	39.3%	6.1%
	1980-1986	20.5%	15.9%	25.8%	32.5%	5.3%
	1990-1995	37.7%	13.0%	11.7%	33.8%	3.9%
Two or more migrations	1930-1939	19.0%	20.6%	20.6%	31.7%	7.9%
	1940-1949	23.0%	13.8%	19.5%	39.1%	4.6%
	1950-1959	27.7%	11.7%	18.2%	35.8%	6.6%
	1960-1969	24.8%	11.5%	10.3%	46.7%	6.7%
	1970-1979	19.8%	17.2%	17.2%	41.4%	4.3%
	1980-1986	22.2%	12.5%	22.2%	36.1%	6.9%
	1990-1995	36.4%	9.1%	13.6%	40.9%	0.0%

Top 33%, 20%, and 10% color-coded; top 5% in bold text

1.1. Descriptive Statistics and Distributions

Table 13b: Reason for first migration, by generation and number of migrations (women)
Source: Person, Family, Society (2013)

		For education	For work	For family reasons	For military service	For other reasons
Only one migration	1930-1939	13.1%	27.0%	51.1%	0.7%	8.0%
	1940-1949	17.1%	22.5%	53.5%	1.6%	5.4%
	1950-1959	26.1%	19.9%	46.9%	0.0%	7.1%
	1960-1969	27.4%	20.4%	45.3%	0.0%	7.0%
	1970-1979	24.6%	15.1%	52.0%	0.6%	7.8%
	1980-1986	29.6%	15.7%	47.8%	0.9%	6.1%
	1990-1995	45.3%	10.7%	37.3%	0.0%	6.7%
Two or more migrations	1930-1939	30.9%	26.8%	37.1%	0.0%	5.2%
	1940-1949	45.8%	16.1%	30.5%	1.7%	5.9%
	1950-1959	48.7%	17.1%	30.4%	0.0%	3.8%
	1960-1969	48.1%	18.3%	29.8%	1.0%	2.9%
	1970-1979	55.6%	4.9%	37.0%	0.0%	2.5%
	1980-1986	58.8%	5.9%	31.4%	0.0%	3.9%
	1990-1995	100.0%	0.0%	0.0%	0.0%	0.0%

Top 33%, 20%, and 10% color-coded; top 5% in bold text

1.1. Descriptive Statistics and Distributions

Table 14: Military service, by generation and number of migrations (men only)
Source: Person, Family, Society (2013)

		Served	Did not serve
No migrations	1930-1939	81.5%	18.5%
	1940-1949	83.5%	16.5%
	1950-1959	85.0%	15.0%
	1960-1969	80.1%	19.9%
	1970-1979	66.1%	33.9%
	1980-1986	48.8%	51.2%
	1990-1995	16.8%	83.2%
Only one migration	1930-1939	92.3%	7.7%
	1940-1949	86.0%	14.0%
	1950-1959	90.5%	9.5%
	1960-1969	89.2%	10.8%
	1970-1979	73.0%	27.0%
	1980-1986	59.6%	40.4%
	1990-1995	49.4%	50.6%
Two or more migrations	1930-1939	85.7%	14.3%
	1940-1949	80.5%	19.5%
	1950-1959	89.8%	10.2%
	1960-1969	88.5%	11.5%
	1970-1979	77.6%	22.4%
	1980-1986	70.8%	29.2%
	1990-1995	63.6%	36.4%

Top 33%, 20%, and 10% color-coded; top 5% in bold text

1.1. Descriptive Statistics and Distributions

Table 15: Descriptive statistics of ratio-level variables: means by sex and generation
Source: Person, Family, Society (2013)

	Sex and generation	Age at survey	Age at first job	Age at completion of education	Age at first migration	Age at second migration	Time interval between migrations (months)
Men	1930-1939	77	19	19	23	28	99
	1940-1949	67	20	19	22	26	88
	1950-1959	58	20	20	22	26	85
	1960-1969	48	20	20	21	24	57
	1970-1979	38	21	20	20	24	64
	1980-1986	29	20	19	19	22	47
	1990-1995	20	19	18	18	19	26
Women	1930-1939	77	18	18	26	31	118
	1940-1949	68	20	19	24	29	117
	1950-1959	58	20	20	22	27	96
	1960-1969	48	21	20	21	26	86
	1970-1979	38	21	21	21	25	67
	1980-1986	30	21	20	20	22	58
	1990-1995	20	19	18	17	19	37

1.2. Odds Ratios (ORs) (p.30-31)

- An OR is a measure of association between a factor and an outcome
- It represents the odds of an outcome given a particular factor relative to the odds of that outcome without that factor
- Hypotheses:
 - H_0 : OR = 1
 - H_1 : OR \neq 1
- Results
 - Factors related to *higher* odds of *first* migration
 - Military service
 - Male sex
 - Having a first job
 - Factors related to *lower* odds of *first* migration
 - Being born in Russia
 - Urban residence
 - Urban residence at birth
 - Factors related to *higher* odds of *second* migration
 - Military service
 - Male sex
 - Higher education
 - Having a first job
 - Factors related to *lower* odds of *second* migration
 - Being born in Russia
 - Urban residence
 - Urban residence at birth

1.2. Odds Ratios (ORs)

- An OR is a measure of association. It represents the odds of an outcome given a particular factor relative to the odds of that outcome without that factor.
- Hypotheses:
 - H_0 : OR = 1
 - H_1 : OR \neq 1

Table 16: Odds ratios for first and second migrations
Source: Person, Family, Society (2013)

First migration (outcome)	Odds ratio	Second migration (outcome)	Odds ratio
Military service	2.491	Military service	2.358
Male sex	1.306	Male sex	1.332
Higher education	0.975	Higher education	1.191
Had a first job	2.965	Had a first job	7.104
Born in Russia	0.129	Born in Russia	0.317
Urban residence	0.705	Urban residence	0.618
Urban residence at birth	0.376	Urban residence at birth	0.385
Religious	1.048	Religious	1.078

Bold text indicates significance at 0.05 level

1.3. ANOVA and Tukey HSD Tests (p.31-34)

- ANOVA tests can show which categorical independent variables influence the key ratio-level dependent variables
- Tukey HSD tests can show *where* the differences in means lie and their degree
- Hypotheses:
 - $H_0: \mu_{\text{factor response 1}} = \mu_{\text{factor response 2}} = \mu_{\text{factor response 3}} \cdots = \mu_{\text{factor response n}}$
 - H_1 : the μ 's are not all equal
- Significant factors: Age at first migration
 - Sex
 - Generation
 - Type of location
 - Type of education
 - Religion
 - Federal district
 - Country of birth
 - First migration destination type
 - Reason for first migration
 - Reason for second migration
- Significant factors: Age at second migration
 - Sex
 - Generation
 - Type of location at birth
 - Type of education
 - Federal district
 - First migration destination type
 - Reason for first migration
 - Reason for second migration
- Significant factors: Interval between migrations
 - Sex
 - Generation
 - Type of education
 - Federal district
 - First migration destination type
 - Reason for first migration
 - Reason for second migration

1.3. ANOVA and Tukey HSD Tests

- ANOVA tests can show which categorical independent variables influence the key continuous, ratio-level dependent variables concerning migration.
- Hypotheses:
 - $H_0: \mu_{\text{factor response 1}} = \mu_{\text{factor response 2}} = \mu_{\text{factor response 3}} \dots = \mu_{\text{factor response n}}$
 - H_1 : the μ 's are not all equal
- Tukey HSD tests can show *where* the differences in means lie and their degree.
- Tukey HSD test results are available on page 61.

Table 17: One-way ANOVA test results
Source: Person, Family, Society (2013)

Factor	Age at first migration	Age at second migration	Time interval between migrations (months)
	p-value		
Sex	0.000	0.000	0.000
Generation	0.000	0.000	0.000
Military service	0.396	0.995	0.255
Type of location	0.000	0.141	0.162
Type of location at birth	0.713	0.012	0.352
Type of education	0.000	0.000	0.001
Religion	0.034	0.694	0.772
Federal district	0.000	0.022	0.016
Country of birth	0.000	0.997	0.977
First migration destination type	0.000	0.001	0.006
Second migration destination type	0.921	0.815	0.814
Reason for first migration	0.000	0.000	0.000
Reason for second migration	0.000	0.000	0.000

Bold text indicates significance at 0.05 level

1.3. ANOVA and Tukey HSD Tests (p.31-34)

- Tukey HSD tests: key mean differences
 - Generation
 - Age at first migration: every gen. except for proximate gens. (oldest = highest)
 - Age at second migration: every gen. except proximate gens. (oldest = highest)
 - Interval between migrations: every gen. except proximate gens. ("=")(most cases)
 - Type of locality at time of survey
 - Age at first migration: rural > town, large city
 - Age at second migration: large city > town, rural
 - Type of education
 - Age at first migration: general > vocational, higher
 - Age at second migration: general > higher, vocational
 - Interval between migrations: general > vocational, higher
 - Religion
 - Age at first migration: Islam > Orthodoxy
- Federal district (at time of survey)
 - Age at first migration: N.Cauc. > South, Central, Volga, Siberia, Ural, N.West, F.East
 - Interval between migrations: Central > Volga
- First migration destination type
 - Age at first migration: rural > town > large city
 - Age at second migration: rural, town > large city
 - Interval between migrations: town > large city
- Reason for first migration
 - Age at first migration: other, family > work > military > education
 - Age at second migration: work, family, other > military > education
 - Interval between migrations: family, work, other, military, education
- Reason for second migration
 - Age at second migration: family, other > work > education, military
 - Interval between migrations: family, other, work > education, military

1.4. Correlation Testing (p.34-36)

- Pearson's r correlation is a parametric measure of *linear* dependence
- Pearson hypotheses
 - $H_0: r = 0$
 - $H_1: r \neq 0$
- Spearman's rho correlation is a *non*-parametric measure of monotonic dependence
- Spearman hypotheses
 - $H_0: \rho = 0$
 - $H_1: \rho \neq 0$
- Kendall's tau correlation is a *non*-parametric, pairwise measure of ordinal association
- Kendall hypotheses
 - $H_0: \tau = 0$
 - $H_1: \tau \neq 0$
- Key results
 - Pearson:
 - Age at survey * ...
 - Age at first migration = 0.242
 - Age at second migration = 0.299
 - Interval between migrations = 0.273
 - Spearman:
 - Age at second migration * ...
 - Age at survey = 0.234
 - Generation = -0.2
 - Interval between migrations * ...
 - Age at survey = 0.240
 - Generation = -0.202
 - First migration destination type * Second migration destination type = 0.236
 - Kendall:
 - First migration destination type * second migration destination type = 0.220

1.4. Correlation Testing

- Pearson's r correlation is a parametric measure of *linear* dependence.
 - Shows the strength and direction of association between two variables.
- Hypotheses:
 - $H_0: r = 0$
 - $H_1: r \neq 0$

Table 18: Pearson produce-moment correlation coefficients
Source: Person, Family, Society (2013)

	Age at first migration	Age at second migration	Time interval between migrations (months)
Age at time of survey	0.242**	0.299**	0.273**
Age at first job	-0.007	0.003	-0.018
Age at completing education	-0.033**	-0.046	-0.062*
Age at first migration	-	0.617**	0.107**
Age at second migration	0.617**	-	0.847**

** Indicates correlation is significant at the 0.01 level (2-tailed).

* Indicates correlation is significant at the 0.05 level (2-tailed).

1.4. Correlation Testing

- Spearman's rho correlation is a *non-parametric* measure of monotonic dependence.
 - Shows strength and direction of association between two variables of ordinal, interval, or ratio-level data.
- Hypotheses:
 - $H_0: \rho = 0$
 - $H_1: \rho \neq 0$

Table 19: Spearman's rank correlation coefficients
Source: Person, Family, Society (2013)

	Age at first migration	Age at second migration	Time interval between migrations (months)	First migration destination type	Second migration destination type
Age at time of survey	0.160**	0.234**	0.240**	0.089**	0.047
Age at first job	0.008	0.028	-0.006	-0.106**	-0.086**
Age at completing education	-0.021	-0.024	-0.041	-0.136**	-0.128**
Age at first migration	-	0.607**	0.088**	0.144**	-0.005
Age at second migration	0.607**	-	0.771**	0.064*	-0.018
Time interval between migrations	0.088**	0.771**	-	0.029	-0.016
Generation	-0.138**	-0.200**	-0.202**	-0.078**	-0.058*
Type of location	0.043*	-0.045	-0.036	0.299**	0.419**
Type of location at birth	-0.059**	-0.117**	-0.038	0.104**	0.296**
Type of education	0.078**	0.030	0.012	0.185**	0.153**
First migration destination type	0.144**	0.064*	0.029	-	0.236**
Second migration destination type	-0.005	-0.018	-0.016	0.236**	-

** Indicates correlation is significant at the 0.01 level (2-tailed).

* Indicates correlation is significant at the 0.05 level (2-tailed).

1.4. Correlation Testing

- Kendall's tau correlation is a *non*-parametric, pairwise measure of ordinal association between two variables.
- Hypotheses:
 - $H_0: \tau = 0$
 - $H_1: \tau \neq 0$

Table 20: Kendall's rank correlation coefficients
Source: Person, Family, Society (2013)

	First migration destination type	Second migration destination type
Generation	-0.066**	-0.049*
Type of location	0.276**	0.385**
Type of location at birth	0.093**	0.265**
Type of education	0.168**	0.136**
First migration destination type	-	0.220**
Second migration destination type	0.220**	-

** Indicates correlation is significant at the 0.01 level (2-tailed).

* Indicates correlation is significant at the 0.05 level (2-tailed).

1.5. Takeaways and Migration Profiles (p.36-40)

- Russians are largely immobile, especially in large cities
- Rural area dwellers migrate at later ages the first time, large city dwellers the second
- Mid-level cities/town are the primary destination
- Russians tend to repeat destination types from the first to second migrations
- Russians migrate to large cities relatively early and to rural areas relatively late
- Military and education are key reasons for men's migration
- Family and education are key reasons for women's migration
- Migration for education or for military tends to occur at earlier ages, and with quicker turnaround
- Russians migrate at young ages, but later than education or work
- Younger generations migrate at earlier ages and with quicker turnaround
- Older generations move at later ages, especially among women, and they wait longer to move a second time
- Those with general education migrate at later ages and with slower turnaround
- N.Cauc., Southern, and Central FD residents migrate at latest ages, F.East. and Ural FD residents at earliest
- Military service, male sex, and having a first job are associated with higher odds of migrating
- Birth in Russia, urban residence, and urban residence at birth are associated with lower odds of migrating
- Migration Profiles
 - Large city non-migrant
 - Mid-sized city migrant
 - Military migrant
 - Student migrant
 - Return migrant
 - Intra-destination type migrant
 - City-city, town-town, rural-rural

2. Event History Analysis of Russian Migration Biographies

- 2.1. Functions for Cox Regression
- 2.2. Cox Regression Results
- 2.3. Takeaways

2.1. Functions for Cox Regression (p.41)

- EHA assesses the risk/likelihood of migration over time
 - Applied sample: 9,557
 - Main list of variables, plus a variable of months starting from age 15
 - Backward variable selection technique
 - Stratification by sex and generation
- Hypotheses:
 - H_0 : all B's = 0 and all Exp B's = 1
 - H_1 : at least one B \neq 0, at least one Exp B \neq 1
- Functions:
 - Survival function shows probability of the nonoccurrence of an event until time t
 - $S(t) = P(T > t) = 1 - F(t) = 1 - \int_0^t f(u) d(u)$
 - Hazard function shows the immediate risk of experiencing an event at $T = t$, if the event did not occur before t
 - $h(t) = \lim_{\Delta t \rightarrow 0} ((P(t \leq T < t + \Delta t / T \geq t)) / \Delta t) = f(t) / S(t)$

2.2. Cox Regression Results (p.41-45)

- Factors of higher risk

- Model 1
 - Female sex
 - Relative to male sex
 - Volga, Ural, and Siberian FDs
 - Relative to Central FD
- Model 2 (by sex)
 - N.Cauc., Volga, and Ural FDs
 - Relative to Central FD
 - Migration for military service
 - Relative to migration for education
- Model 3 (by generation)
 - Female sex
 - Relative to male sex
 - Volga, Ural, and Siberian FDs
 - Relative to Central FD

- Factors of lower risk

- Model 1
 - Older generations
 - Relative to 1990-1995 generation
 - Vocational education
 - Relative to higher education
 - Migration for work, family, or other reasons
 - Relative to migration for education
- Model 2 (by sex)
 - Older generations
 - Relative to 1990-1995 generation
 - Vocational education
 - Relative to higher education
 - Migration for work, family, or other reasons
 - Relative to migration for education
- Model 3 (by generation)
 - Vocational education
 - Relative to higher education
 - Migration for work, family, or other reasons
 - Relative to migration for education

2.2. Cox Regression Results

Table 21a: Event history analysis Cox regression test results
Source: Person, Family, Society (2013)

Predictors	Model 1 Coefficients			Model 2 Coefficients			Model 3 Coefficients		
	B	Sig.	Exp B	B	Sig.	Exp B	B	Sig.	Exp B
<i>Sex</i> <i>base: male</i>	0.169	0.001	1.184	-	-	-	0.169	0.001	1.184
<i>Generation</i> <i>base: 1990-1995</i>	-	0.000	-	-	0.000	-	-	-	-
1930-1939	-0.658	0.000	0.518	-0.628	0.000	0.534	-	-	-
1940-1949	-0.500	0.000	0.606	-0.473	0.000	0.623	-	-	-
1950-1959	-0.399	0.001	0.671	-0.368	0.003	0.692	-	-	-
1969-1969	-0.439	0.000	0.645	-0.405	0.001	0.667	-	-	-
1970-1979	-0.368	0.004	0.692	-0.337	0.008	0.714	-	-	-
1980-1986	-0.204	0.119	0.815	-0.176	0.180	0.839	-	-	-
<i>Edu. Type</i> <i>base: Higher</i>	-	0.005	-	-	0.008	-	-	0.005	-
General	-0.103	0.086	0.902	-0.089	0.138	0.915	-0.098	0.103	0.902
Vocational	-0.171	0.001	0.843	-0.165	0.002	0.848	-0.172	0.001	0.843
<i>Rel. Type</i> <i>base: ROC</i>	-	-	-	-	0.101	-	-	0.085	-
Islam	-	-	-	-0.180	0.032	-	-0.187	0.027	0.822
Other	-	-	-	-0.020	0.901	0.980	-0.037	0.822	0.901
Stratification variable	None			Sex			Generation		
Model specs	-2 LL*	Chi-sq.	Sig.	-2 LL*	Chi-sq.	Sig.	-2 LL*	Chi-sq.	Sig.
*Log Likelihood	28847	899.5	0.000	25875	886.15	0.000	21012	787.79	0.000
Sample size	Event		2187	Event		2187	Event		2187
	Censored		74	Censored		74	Censored		74
	Total		2261	Total		2261	Total		2261

Bold text indicates significance at 0.05 level.

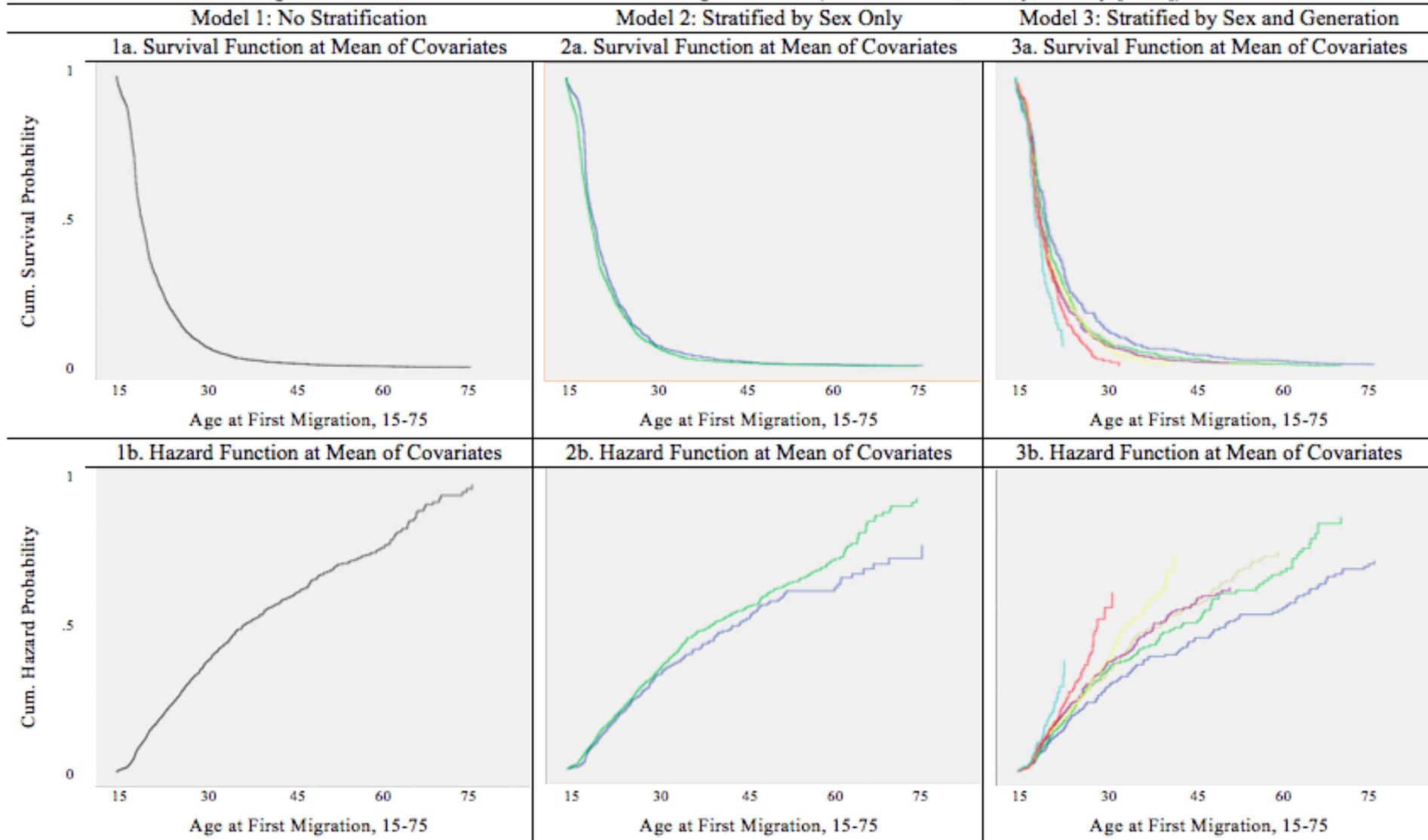
Table 21b: Event history analysis Cox regression test results
Source: Person, Family, Society (2013)

Predictors	Model 1 Coefficients			Model 2 Coefficients			Model 3 Coefficients		
	B	Sig.	Exp B	B	Sig.	Exp B	B	Sig.	Exp B
<i>Fed. District</i> <i>base: Central</i>	-	0.001	-	-	0.001	-	-	0.000	-
Northwest	-0.081	0.344	0.922	-0.080	0.351	0.923	-0.087	0.312	0.917
South	0.061	0.446	1.063	0.051	0.526	1.053	0.064	0.426	1.066
N. Caucasus	0.117	0.203	1.124	0.195	0.048	1.215	0.191	0.054	1.210
Volga	0.131	0.027	1.140	0.140	0.019	1.151	0.152	0.011	1.164
Ural	0.389	0.000	1.476	0.385	0.000	1.470	0.403	0.000	1.497
Siberia	0.153	0.041	1.166	0.147	0.052	1.158	0.160	0.034	1.173
Far East	0.201	0.098	1.223	0.190	0.119	1.209	0.198	0.105	1.219
<i>Age at 1st Migration</i>	-0.049	0.000	0.952	-0.049	0.000	0.952	-0.048	0.000	0.953
<i>Why did you move (1st mig.)? base: for education</i>	-	0.000	-	-	0.000	-	-	0.000	-
For work	-0.467	0.000	0.627	-0.442	0.000	0.643	-0.478	0.000	0.620
For family reasons	-0.686	0.000	0.504	-0.660	0.000	0.517	-0.701	0.000	0.496
For military service	0.135	0.096	1.144	0.210	0.015	1.234	0.125	0.124	1.133
Other	-0.619	0.000	0.538	-0.604	0.000	0.547	-0.639	0.000	0.528
Stratification variable	None			Sex			Generation		
Model specs	-2 LL*	Chi-sq.	Sig.	-2 LL*	Chi-sq.	Sig.	-2 LL*	Chi-sq.	Sig.
*Log Likelihood	28847	899.5	0.000	25875	886.15	0.000	21012	787.79	0.000
Sample size	Event		2187	Event		2187	Event		2187
	Censored		74	Censored		74	Censored		74
	Total		2261	Total		2261	Total		2261

Bold text indicates significance at 0.05 level.

2.2. Cox Regression Results

Figure 1: Survival and hazard functions of Cox regression test (Source: Person, Family, Society [2013])



Charts 2a and 2b: blue = men; green = women.

Charts 3a and 3b: blue = 1930-1939; green = 1940-1949; tan = 1950-1959; purple = 1960-1969; yellow = 1970-1979; red = 1980-1986; light blue = 1990-1995.

2.3. Takeaways (p.45-46)

- Factors attributable to a higher risk of migration
 - Female sex (relative to male sex)
 - Volga and Ural Federal Districts (relative to the Central FD)
- Factors attributable to a lower risk of migration
 - All generations up to 1979 (relative to the 1990-1995 generation)
 - Vocational education (relative to higher education)
 - Migration for job, for family reasons, and for other reasons (relative to migration for education)
- The survival and hazard functions reveal that
 - Women are more likely than men to migrate across the life course, particularly later in life
 - With each successive generation – save the 1950-1959 and 1960-1969 generations – there is a increase in the likelihood of migration across the life course, with the youngest three generations showing very vertical trends and little sign of stalling.

3. Sequence Analysis of Russian Migration Biographies

3. Sequence Analysis (p.47-51)

- SA depicts migrations alongside other events in the form of statuses across the life course.
 - Here, the life course will be confined to ages 15 to 35.
- Sample: PFS subsample of respondents who migrated once between 15 and 35.
 - Sample size is 1,521; 611 men and 910 women.
 - These men and women span the full range of generations from 1930 to 1995.
- Variables:
 - Birth year
 - Generation
 - Number of migrations from age 15
 - Year of migration
 - Purpose of migration
 - Year of beginning first job
 - Year of completing education

3. Sequence Analysis

Figure 2: Distribution of respondents by sex and generation (N = 1,521)
Source: Person, Family, Society (2013)

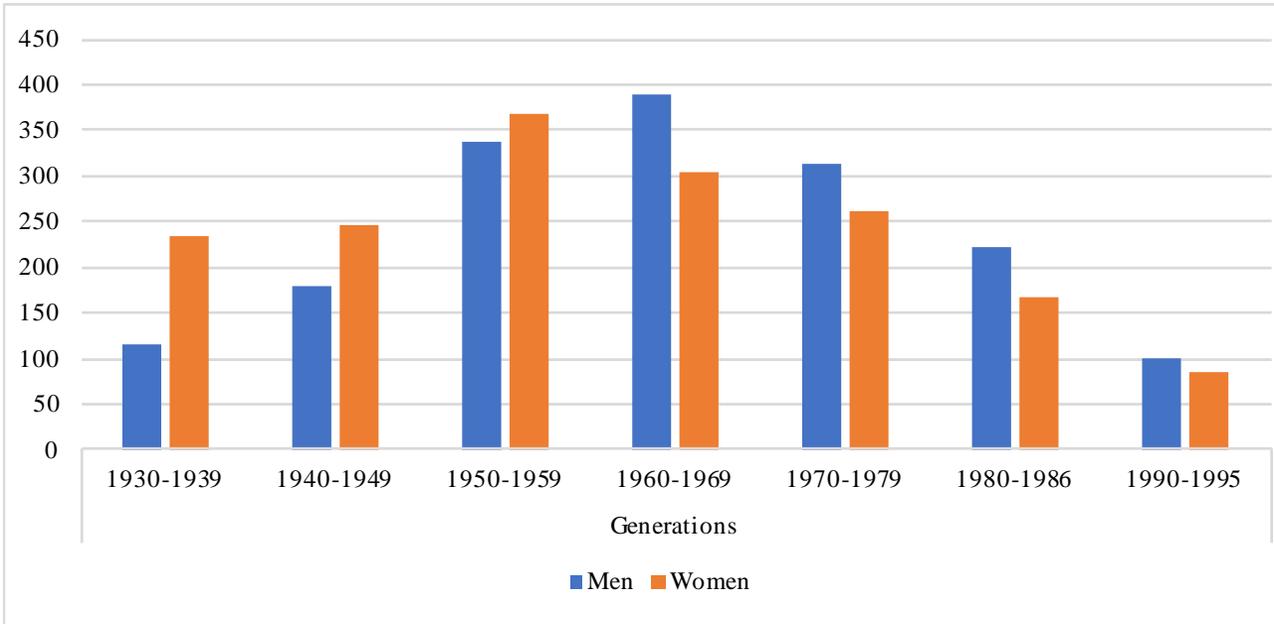


Table 22: Average ages at migration, by sex and generation
Source: Person, Family, Society (2013)

Men							Women						
1930-1939	1940-1949	1950-1959	1960-1969	1970-1979	1980-1986	1990-1995	1930-1939	1940-1949	1950-1959	1960-1969	1970-1979	1980-1986	1990-1995
Average							21	20	19	19	19	18	17
22	22	22	21	20	19	17	21	20	19	19	19	18	17

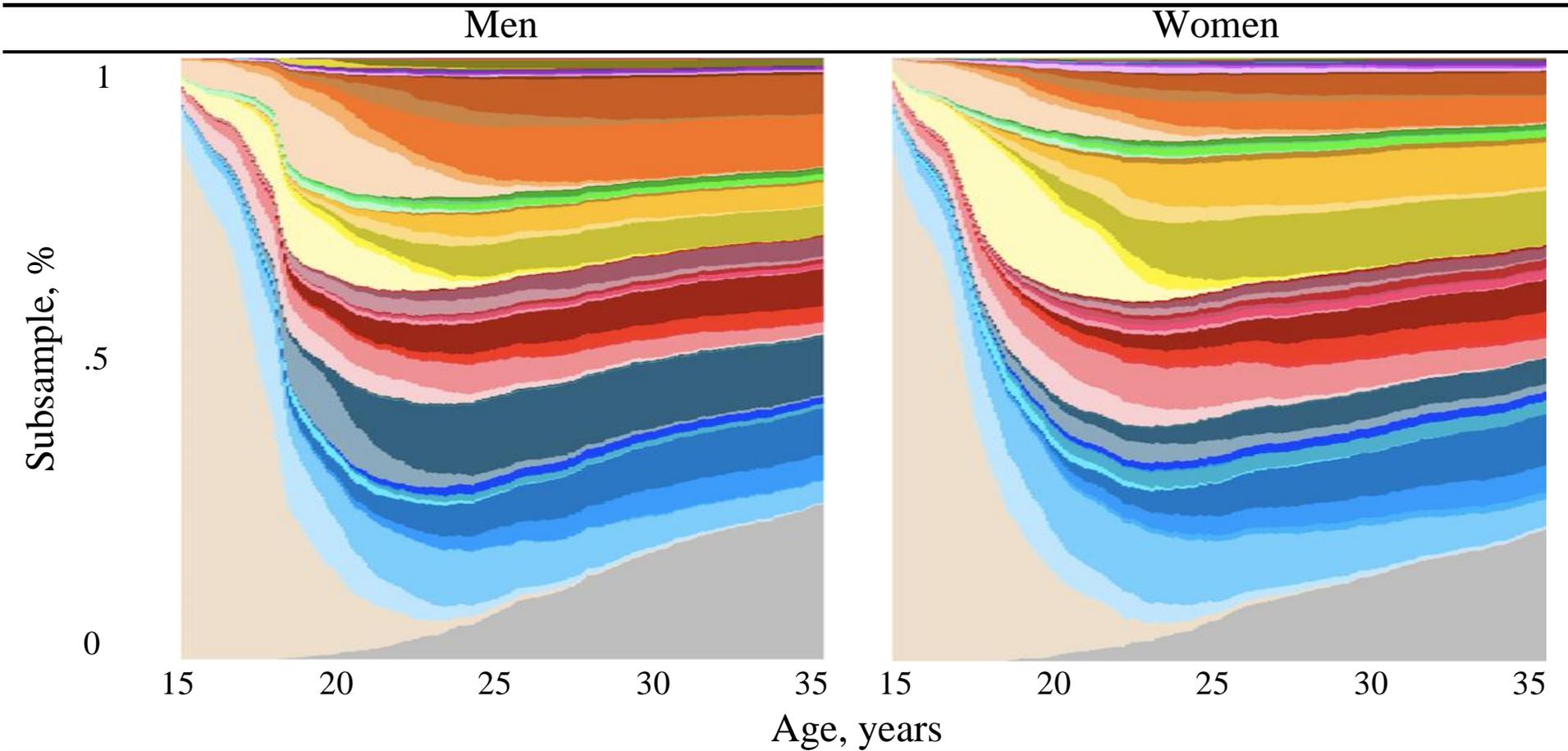
Table 2: Color palette for sequence analysis chronograms

Number of starting events	First event(s)	Second event(s)	Third event(s)
0	N (no events)		
1	E	EJ	EJTE
			EJTJ
			EJTO
		ETE	ETEJ
		ETJ	ETJJ
		ETO	ETOJ
		E(JTJ)	-
		E(JTO)	-
	J	JE	JETE
			JETJ
			JETO
		JTE	JTEE
		JTJ	JTJE
		JTO	JTOE
		J(ETE)	-
		J(ETJ)	-
	J(ETO)	-	
	TE	TEE	TEEJ
		TEJ	TEJE
		TE(EJ)	-
TJ	TJE	TJEJ	
	TJJ	TJJE	
	TJ(EJ)	-	
TO	TOE	TOEJ	
	TOJ	TOJE	
	TO(EJ)	-	
2	(EJ)	(EJ)TE	-
		(EJ)TJ	-
		(EJ)TO	-
	(ETE)	(ETE)J	-
	(ETJ)	(ETJ)J	-
	(ETO)	(ETO)J	-
	(JTE)	(JTE)E	-
	(JTJ)	(JTJ)E	-
(JTO)	(JTO)E	-	
3	(EJTO)	-	-
-	Censoring		

() indicates events occurring simultaneously

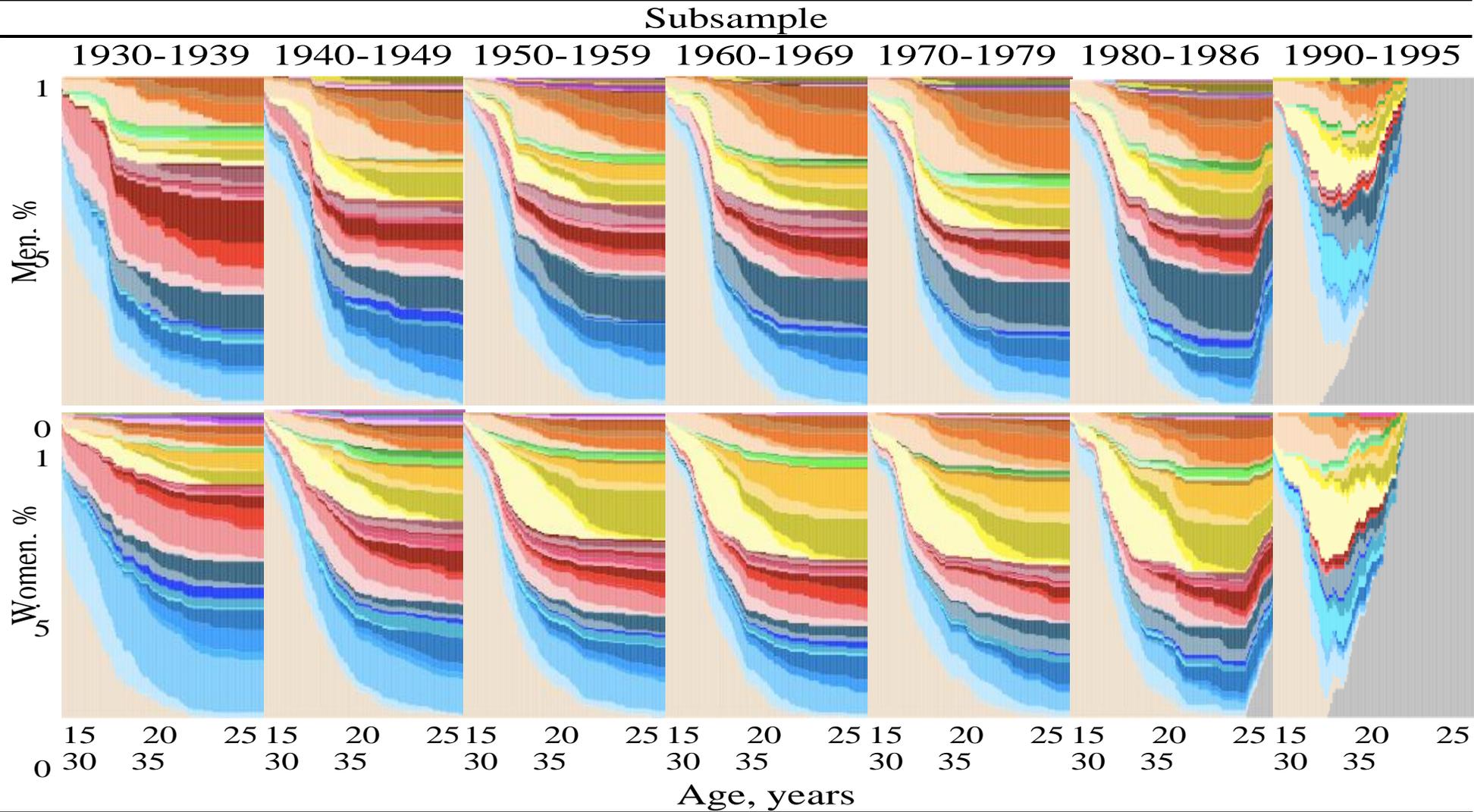
3. Sequence Analysis

Figure 3: Sequence analysis chronograms, by sex
Source: Person, Family, Society (2013)



3. Sequence Analysis

Figure 4: Sequence analysis chronograms, by sex and generation (Source: Person, Family, Society [2013])



3. Sequence Analysis (p.47-51)

- Results

- By sex

- Men experience slightly more censoring
 - Men more often begin with education, then a job, and then a move for other reasons
 - The influence of migration for other reasons is distinct at age 18 for men (military); men also stall on ETO around age 21, showing military service after education completion
 - Men's most common age-35 statuses: ETOJ, TOEJ, EJTO, and TOJE
 - Women tend to start biographies with migration for education
 - Women's most common age-35 statuses: TEEJ, TEJE, and EJTO

- By generation

- Increasing postponement in starting biographies across generations
 - Reduction of share of biographies beginning with work
 - The last two generations obtain events faster, especially for biographies beginning with education; there is a predominance of ETE
 - This may reflect conscription avoidance for men, or deferral of job searching

- By sex and generation

- Men show more stalling on ETO in the 1970-1979 and 1980-1986 generations
 - May be linked to conscription avoidance or free labor market difficulties in 1990s and 2000s
 - Women show increasing shares of biographies starting with migration for education
 - Women show increasing shares of biographies beginning with migration for other reasons

Conclusion

Conclusion (p.52-55)

• 1. Factors of migration

- EDA: factors associated with *higher* likelihood of migration
 - Military service, male sex, and having a first job
- EDA: factors associated with *lower* likelihood of migration
 - Birth in Russia, urban residence, and urban residence at birth
- EHA: factors associated with *higher* likelihood of migration
 - Female sex, youngest generation, higher education, and migration for education
- EHA: factors associated with *lower* likelihood of migration
 - Male sex, generations up to 1979, vocational education, migration for work, family reasons, or other reasons
- Conflicting results between EDA and EHA (e.g. conflicting migration factors)
 - The EDA tools are not best for survey-based social science observational studies
 - Little control over variables
 - No control over group assignment
 - Inability to deal with covariates or confounders
- Most factors included in the first hypothesis were proven: military service, sex (female [not male]), generation (younger), and type of education (higher)

• 2. Position of migration

- Migration as an enabler or gateway
 - TOEJ, TOJE, TEEJ, and TEJE are very common
 - Their shares level off around age 25
 - These show mobility at early age, and TO and TE are associated with shorter intervals between migrations
- Migration as a closer
 - EJTO is quite common
 - Migration for other reasons likely means for family reasons, but for men it could also be for military service
- Migration as means of deferment or avoidance
 - ETO status lasts long among men of generations 1970-
 - Men may migrate for other (likely military) reasons after education as a response to the vicissitudes of the free labor market
 - Many young men (1990-1995) have the ETE status
 - Continued enrollment provides an exemption for conscription
- 3. Zelinsky model: Russia's position
 - Russia does not neatly fit a stage, but it does seem like an *advanced* society
 - Unclear whether residential mobility has leveled-off
 - Rural-urban migration is reduced
 - Movement largely appears to be inter-city
 - Russia's frontier is long closed
 - Assessing international migration, circular migration, etc. is beyond this paper

Thank you!

The remaining slides are appended for reference purposes

Bibliography

- Data Sources
- Russian Sources
- Non-Russian Sources

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Extra Slides

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- **Chapters**
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 - 1.1. Descriptive Statistics and Distributions Across Sexes, Generations, etc.
 - 1.2. Odds Ratios (ORs)
 - 1.3. One-Way Analysis of Variance (ANOVA) and Tukey HSD Post-Test
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 - 1.5. Takeaways and Migration Profiles
 - **2. Event History Analysis (EHA) of Russian Migration Biographies (RMBs)**
 - 2.1. Functions for Cox Regression
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Tables and Figures

- 1. Exploratory Data Analysis
- 2. Event History Analysis
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