

# Diversity in diversification: an analysis of shopping trips in six-week travel diary data

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# Introduction

Diversification in shopping, a long-pursued subject in consumer behavior analysis, is approached from a broad perspective of the diversity in daily travel patterns, as well as the diversity in shopping locations and timing.

Isaac Newton  
(1642-1727)

# Objective of this study

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The study explores differences across individuals in the variations in travel patterns across days as well as in their shopping locations and timing.

# The number of grocery shopping locations over 6-week period

| Variables        |                     | N   | mean | Minimum | Maximum | Std. Deviation |
|------------------|---------------------|-----|------|---------|---------|----------------|
| Working Status   | Full-time worker    | 111 | 4.86 | 0       | 21      | 3.58           |
|                  | Non-worker          | 76  | 6.45 | 1       | 15      | 3.91           |
|                  | Part-time workers   | 35  | 7.29 | 1       | 23      | 3.95           |
| Sex              | Male                | 113 | 4.92 | 0       | 21      | 3.81           |
|                  | Female              | 119 | 6.51 | 0       | 23      | 3.83           |
| Marriage         | Married             | 147 | 5.99 | 0       | 23      | 3.99           |
|                  | Unmarried           | 85  | 5.29 | 0       | 16      | 3.71           |
| Residence Area*  | CBD resident        | 16  | 6.25 | 1       | 13      | 4.03           |
|                  | Inner city resident | 61  | 6.16 | 0       | 16      | 3.77           |
|                  | Suburban resident   | 153 | 5.43 | 0       | 23      | 3.90           |
| City             | Karlsruhe resident  | 116 | 6.43 | 0       | 23      | 4.24           |
|                  | Halle resident      | 116 | 5.04 | 0       | 15      | 3.40           |
| Age              | 18-24 years old     | 25  | 4.72 | 1       | 15      | 3.57           |
|                  | 25-34 years old     | 33  | 5.94 | 1       | 13      | 3.36           |
|                  | 35-44 years old     | 61  | 6.28 | 0       | 16      | 3.81           |
|                  | 45-54 years old     | 57  | 5.53 | 0       | 23      | 4.63           |
|                  | 55-65 years old     | 56  | 5.70 | 0       | 14      | 3.64           |
| Household Income | less than 1799 DEM  | 14  | 6.83 | 1       | 15      | 2.99           |
|                  | 1800-2499 DEM       | 18  | 6.61 | 0       | 13      | 3.74           |
|                  | 2500-2999 DEM       | 30  | 4.97 | 1       | 13      | 2.71           |
|                  | 3000-3999 DEM       | 45  | 5.22 | 1       | 16      | 3.21           |
|                  | 4000-4999 DEM       | 49  | 5.20 | 0       | 15      | 3.69           |
|                  | 5000-7499 DEM       | 31  | 6.00 | 0       | 15      | 3.96           |
|                  | more than 7500 DEM  | 21  | 7.14 | 0       | 23      | 5.82           |

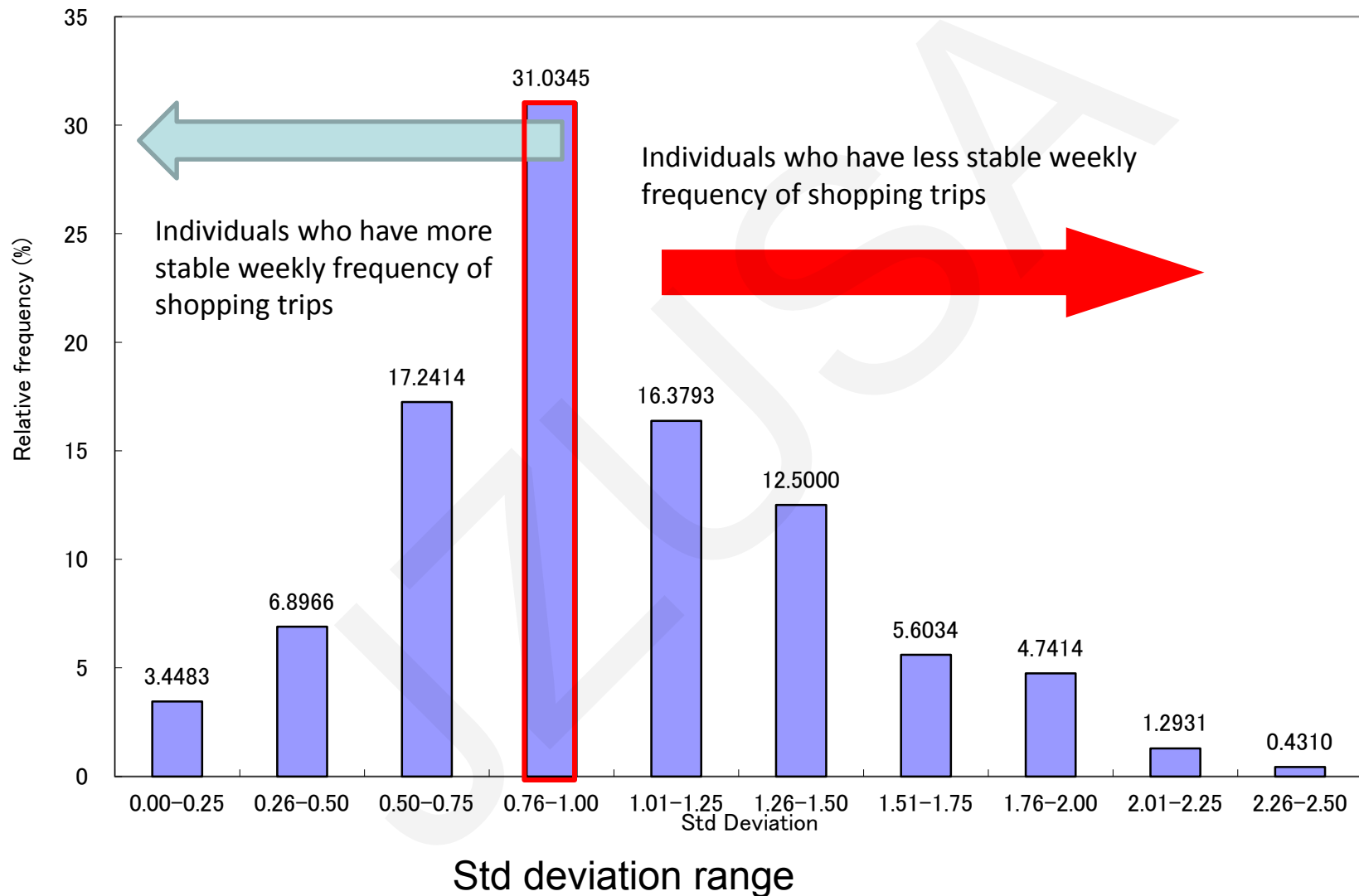
# The stability of weekly frequency of shopping

## Issues:

- How often does an individual go shopping in a week?
- Does the individual repeat a similar number of shopping days from week to week; or does shopping frequency varies over time, according to shopping needs?
- Who have a stable shopping frequency? Who doesn't?



# Distribution Across Individuals of the Standard Deviation of the Number of Shopping Days per Week



# Result - Regularity

dependent variable

Regularity

parameter

-1.46

+1.03

-0.95

+2.4

Significant explanatory variables

\* 18-24 years old

\*\*35-44 years old

\*Full time worker

\*\*Income 1800 – 2499 DEM

\*significant at 0.1 level

\*\*significant at 0.05 level

- Young people and/or full time workers do not have a fixed day for shopping. University student's life is full of irregularities.
- Middle age people (35 – 44 years) and those with
- middle-low income (1800 – 2499 DEM) tend to shop on a fixed day of the week. Family shopping on Friday?

# Conclusions

- Shopping behavior varies substantially across people.
- Intra-person variability is also substantial.
  - The number of shopping days per week varies from week to week for a given individual during the 6-week survey period.
- Variability varies from person to person.
  - Some show great variabilities across weeks, some do not.
- Diversities in shopping location and frequency vary across individuals in systematic ways.
  - For shopping location:
    - Individual attributes (full time worker, age, sex)
    - Residence location (Karlsruhe, suburbs)
  - For shopping frequency:
    - Individual attributes (full time worker, age, income)