

# A Multi-Purpose Equivalence Estimator for Quantitative Career Matching

Cao Bittencourt

March 25, 2024

### **Abstract**

lalala dsds.

**Keywords:** lalala; lalala; lalala; lalala; lalala.

## Contents

## List of Tables

## List of Figures

# 1 Introduction

lalala (Lalala, 1919).

## 2 Methods

### 2.1 Conceptual Background

#### 2.1.1 Defining Sufficient Similarity

dsds (Ds, 1919)

#### 2.1.2 Identifying Core Attributes

### 2.2 A Multi-Purpose Equivalence Estimator

An initial insight for an equivalence estimator:

$$\text{eq}(x, M) = x^{\frac{1}{1-M}} \quad (1)$$

The linear-logistic trigonometrically-scaled equivalence estimator:

$$\text{eq}(x, M) = x \{1 + M(1 - x) \exp[-b(x - M)]\}^{-\frac{M}{x}}, \quad (2)$$

$$b = \tan \left[ \frac{\pi}{2} \cos^{M(1-M)} \left( \frac{\pi}{2} x(1 - M) \right) \right], \quad (3)$$

$$x, M \in [0, 1]. \quad (4)$$

### 2.3 Applications of the Equivalence Estimator

#### 2.3.1 Skill Set Interchangeability

$$\beta_{k,q} = \beta(s(\mathbf{a}_k, \mathbf{a}_q), M) = \text{eq}(s(\mathbf{a}_k, \mathbf{a}_q), M) \quad (5)$$

$$\mathbf{B} = \begin{bmatrix} \beta_{1,1} & \cdots & \beta_{n,1} \\ \vdots & \ddots & \vdots \\ \beta_{1,n} & \cdots & \beta_{n,n} \end{bmatrix} = \begin{bmatrix} 1 & \cdots & \beta_{k,1} & \cdots & \beta_{n,1} \\ \vdots & \ddots & \vdots & \vdots & \vdots \\ \beta_{1,k} & \cdots & 1 & \cdots & \beta_{n,k} \\ \vdots & \vdots & \vdots & \ddots & \vdots \\ \beta_{1,n} & \cdots & \beta_{k,n} & \cdots & 1 \end{bmatrix} \quad (6)$$

$$(7)$$

$$h_{k,q} = h(\beta_{k,q}) = \begin{cases} 1, & \text{if } \beta_{k,q} \geq 0.5. \\ 0, & \text{otherwise.} \end{cases} \quad (8)$$

### 2.3.2 Attribute Equivalence

$$\ddot{a}_i^k = \ddot{a}(\mathbf{a}_k, M) = \text{eq} \left( \frac{a_i^k}{\max_j a_j^k}, M \right) \quad (9)$$

## 2.4 Data and Implementation

## 3 Results

### 3.1 Equivalence-Weighted Euclidean Matching

### 3.2 Similarity-Interchangeability Matrix

## 4 Discussion

dsdsds (dsdsds [ds], 1919)

## 5 Conclusion

## References

- Ds, D. S. (1919). *dsds*. dsds.  
dsdsds. (1919). *dsdsds*.  
Lalala, L. (1919). lalala. *lalala*.



## Appendix