

Age-Labor Income Profile

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Research Question

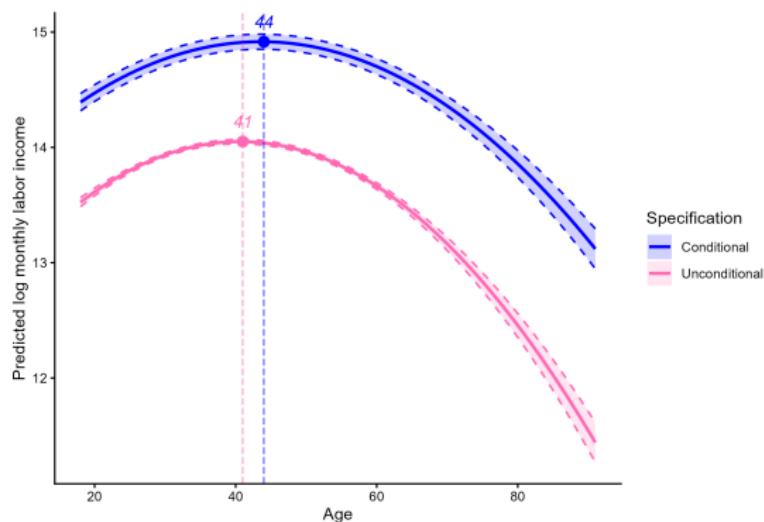
To what extent do labor income models capture the structural determinants of income, and how does the balance between their interpretability and predictive accuracy affect their usefulness for policymaking?

Is there empirical evidence of a non-linear (concave) relationship between age and labor income in Bogotá, and how does this relationship change when controlling for hours worked and type of employment?

Data

Estadísticas descriptivas relevantes

Figure 1: Descriptive Statistic Continuos variables



Data

Data

Table 1: *

Distribución de las variables categóricas

	N	%	Promedio
Sexo			
Male	7,775	52.7%	8,87
Female	6,989	47.3%	8,17
Máximo nivel educativo			
Complete secondary	4,812	32.6%	5,12
Tertiary education	6,115	41.4%	13,95
Complete primary	1,346	9.1%	4,26
Incomplete primary	662	4.5%	3,67
Incomplete secondary	1,732	11.7%	4,39
None	97	0.7%	3,23

Discussion

1. Evidence of a Non-Linear and Concave Age–Income Profile

The quadratic specifications show a positive coefficient on age and a negative coefficient on age², generating a **concave age–earnings profile**. There is clear evidence of an **earnings peak within the observed age range**, around 40 years.

In contrast, the linear model fails to capture this non-linearity and exhibits very low explanatory power.

- ▶ Results are consistent with the theory: “Earnings rise at a diminishing rate over the working life, and decline when net investment becomes negative, as in old age. The typical (logarithmic) working-life earnings profile is, therefore, concave” (Mincer, 1974)

Discussion

2. Effect of Conditioning on Hours Worked and Employment Type

Including controls for hours worked and employment type shifts the estimated **earnings peak to slightly older ages (approximately 41–43 years)** and substantially improves model fit.

This suggests that part of the observed non-linearity is driven by differences in labor intensity and occupational structure, rather than solely by human capital accumulation.

3. Economic Interpretation in the Context of Bogotá's Labor Market

The results support the theoretical prediction of a concave life-cycle earnings profile. However, the shape of the profile is influenced by labor market characteristics such as occupational heterogeneity and variation in working hours.

Overall, the observed age-income pattern reflects both experience accumulation and structural labor market factors.

References

Mincer, J. A. (1974). Schooling, Experience, and Earnings. National Bureau of Economic Research.