Measuring perceptions and preferences on meritocracy in school in Chile

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Introduction

The belief that economic disparities are justified by differences in meritocratic elements—such as individual effort and talent (Young, 1958)—has been identified as a key mechanism to explain the persistence of inequalities. From its beginnings, educational institutions have been fundamental in promoting such values, due to their connection with the promises of social mobility and better life opportunities (Dubet, 2011). Prior research shows that individuals who endorse stronger meritocratic beliefs tend to perceive less inequality, attributing economic differences to personal achievement rather than structural factors (Mijs, 2019; Wilson, 2003). At the school level, such beliefs also legitimize greater inequality, as they foster attitudes that accept social hierarchies as fair (Batruch et al., 2022; Wiederkehr et al., 2015). Yet concepts and instruments for measuring meritocracy vary substantially across the literature. Addressing this problem, Castillo et al. (2023) proposes a conceptual and measurement framework to assess meritocratic and non-meritocratic perceptions and preferences, showing that their scale captures these constructs effectively in the adult Chilean population.

With the aim of contributing to empirical research on the formation of meritocracy and its related factors at early ages (Batruch et al., 2022; Darnon et al., 2018; Wiederkehr et al., 2015), this study seeks to evaluate the applicability of this scale in the school population in Chile, a country characterized by acute and persistent economic inequality and a highly stratified educational system (Chancel et al., 2022; Corvalán et al., 2017). We first argue that

there is a distinction between perception and preferences in meritocracy. While perception is associated with how individuals view the functioning of meritocratic principles in society (what is), preferences refer to normative judgments (what should be). The second distinction concerns meritocratic and non-meritocratic elements. In this case, it is also considered that aspects such as the role of personal contacts and family wealth are not necessarily opposed to the perception and valuation of effort and talent in achieving success and rewards.

To determine the extent to which it is possible to recognize the different dimensions of meritocracy in the school population, a confirmatory factor analysis procedure will be implemented using data from Chilean students. Additionally, longitudinal invariance estimates will be performed across two waves drawn from the same cohort to evaluate the scale's stability over time.

Data, Variables, and Methods

Data

This study relies on information from the Panel Survey on Education and Meritocracy (EDUMER) database for its 2023 and 2024 waves for students. This survey is based on the administration of web questionnaires to sixth-grade and first-year secondary students from nine schools in the Metropolitan and Valparaíso regions of Chile. The first wave included 839 students (411 girls, 446 boys, 45 identifying as other; $M_{age} = 13.1$, $SD_{age} = 1.6$), and the second wave followed 612 of them (309 girls, 343 boys, 22 identifying as other; $M_{age} = 14.1$, $SD_{age} = 1.6$). Data collection was funded by Chile's National Agency for Research and Development (ANID) under FONDECYT project No. 1210847, "Meritocracia en la escuela: fundamentos morales del mercado educativo y sus implicancias para la formación ciudadana en Chile".

Variables

Perceptions and Preferences Scale on Meritocracy: The variables included in the measurement model on meritocratic and non-meritocratic perceptions and preferences are operationalized according to the same items proposed by Castillo et al. (2023). This is a scale based on two components, fourth dimensions and eight items (two for each dimension). The perception of meritocracy is measured through two items that inquire about the degree of agreement with the statement that effort and ability are rewarded in Chile, while non-meritocratic perception is measured with two items that assess the degree of agreement with the idea that success is linked to personal contacts and family wealth. The preference for meritocracy is measured with two items that assess agreement with the idea that those who exert more effort or possess more talent should be more rewarded. The preference for non-meritocratic aspects is measured with two indicators assessing agreement with the idea

Table 1: Meritocratic and Non-Meritocratic Items

Component	Dimension	Item
Perception	Meritocratic	In Chile, people are rewarded for their efforts.
	Meritocratic	In Chile, people are rewarded for their intelligence and abilities.
	Non-meritocratic	In Chile, those with wealthy parents do much better in life.
	Non-meritocratic	In Chile, those with good contacts do better in life.
Preference	Meritocratic	Those who work harder should receive greater rewards than those who work less hard.
	Meritocratic	Those who have more talent should receive greater rewards than those who have less talent.
	Non-meritocratic	It is good that those with wealthy parents do well in life.
	Non-meritocratic	It is good that those with good contacts do well in life.

that it is acceptable for those with better contacts or wealthy parents to have more success (see Table 1). Each item was answered on a four-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (4).

Methods

To evaluate our hypotheses, we employed confirmatory factor analyses (CFA) based on a four-factor latent measurement model (Castillo et al., 2023) with Diagonal Weighted Least Squares (DWLS) estimator due to the ordinal nature of the items (Kline, 2023). The model fit was assessed based on the criteria proposed by Brown (2015): CFI > 0.95; TLI > 0.95; RMSEA < 0.06.

To examine the metric stability of the measurement model (Davidov et al., 2014), we performed tests of longitudinal invariance using data from the two waves of the study. In line with Liu et al. (2017), we followed a hierarchical approach with four models: configural (equivalent factorial structure), weak (equality of factor loadings), strong (equality of intercepts), and strict (equality of error variances). This approach is particularly relevant for ordered categorical indicators, as treating four-point Likert scales as continuous may introduce biases in the estimates. In addition to the chi-square change criterion, we adopted the change in CFI ($\Delta \geq -0.010$) and RMSEA ($\Delta \geq 0.015$) as indicators of invariance, following Chen's recommendations (2007).

Results

The results reveal that the scale presents good fit indices (CFI = 0.989, TLI = 0.979, RMSEA = 0.046, χ^2 (df = 14) = 39.183) and that its dimensions correspond to the multidimensional model proposed for the school population. High factor loadings (> 0.6) were observed for all items in their respective latent factors. The correlations between factors are consistent with those observed in the adult population (Castillo et al., 2023): the perception of meritocratic elements is negatively associated with the perception of non-meritocratic elements, while the latter is positively related to preference for meritocracy. These findings suggest that, at an early stage of socialization, students distinguish between how they perceive the functioning of meritocratic and non-meritocratic elements and how they prefer these to operate in society. It is noteworthy that a higher perception of non-meritocracy is linked to a greater preference for the same, highlighting the importance of this moral principle in the formation of values and attitudes during the school years (Batruch et al., 2022; Darnon et al., 2018; Wiederkehr et al., 2015).

The longitudinal invariance tests do not support full metric stability. At the weak level—where factor loadings are constrained across waves—the model fits well (Δ CFI = –0.003; Δ RMSEA = 0.001), indicating that loadings are invariant over time. In contrast, the strong level—which additionally constrains item intercepts—produces a poor fit (Δ CFI = –0.045; Δ RMSEA = 0.035), so scalar invariance is not achieved. Further inspection shows that the misfit stems from the intercepts of the items tapping perceptions of effort and talent. Substantively, this implies that the average endorsement—or salience—of these items shifts between waves. A plausible explanation is a socialization process through which students, over time, develop a more nuanced understanding of how meritocratic principles operate in society.

Pre-registration

The pre-registration of the study can be found in this link.

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