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Moving Beyond Mechanical Objectivity: Addressing the Challenges and Exploring Novel Solutions in Iranian University Admissions

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A B S T R A C T

Extensive criticisms have been raised against Iran's university admission system, prompting the addition of final examinations alongside the national entrance exam. Despite these changes, standardized testing remains central, driven by a commitment to objectivity and ethical impartiality. In this paper, we argue that the traditional conception of objectivity—specifically mechanical objectivity or the value-free ideal—assumes that test scores alone are sufficient for admission, creating serious challenges for the validity of entrance exams. Classical test theory, rooted in operationalism and aligned with mechanical objectivity, emphasizes reliability over validity, failing to distinguish between appropriate and inappropriate assessments. Consequently, mechanical objectivity alone cannot ensure justice or epistemic integrity. Drawing on Daston and Galison's work, we highlight the need for additional epistemic virtues such as truth-to-nature and trained judgment. Latent variable models, which aim to uncover the underlying essence of phenomena, are presented as alternatives to classical test theory. Furthermore, trained judgment leverages expert evaluation to offer a more holistic view of student abilities. Recent perspectives also frame objectivity as context-sensitive and goal-oriented. Therefore, redefining objectivity in university admissions requires identifying clear social and academic goals and designing evaluations accordingly. Ultimately, we propose a hybrid framework that integrates latent variable-based assessments with expert-driven processes, aiming to create a fairer, multidimensional, and more just admission model for Iran's universities.

Keywords: *Mechanical Objectivity, Value-Free Ideal, National Entrance Examination, Epistemic Virtues, Validity*

Introduction

Iran's university admission system, centered around the national entrance examination (Konkour) and supplemented by final school examinations, has long been a subject of scrutiny and debate. The system's reliance on standardized testing reflects a deep-rooted commitment to objectivity, perceived as both an epistemic virtue ensuring reliable knowledge and an ethical principle promoting fairness. This traditional approach aligns with the concept of *mechanical objectivity*, a framework that emerged in the 19th century to eliminate subjective bias through standardized, observable criteria (Daston & Galison, 2007). In the context of university admissions, mechanical objectivity manifests as the belief that test scores provide a sufficient and impartial measure of a student's academic potential, free from personal, social, or economic influences.

However, this paper contends that an overreliance on mechanical objectivity introduces significant limitations. It challenges the validity of entrance exams, fails to capture the diverse abilities of applicants, and overlooks broader contextual factors critical to equitable assessment. Drawing on historical and philosophical insights from Daston and Galison (2007), as well as contemporary critiques of objectivity, we explore alternative epistemic virtues—*truth-to-nature* and *trained judgment*—and propose a hybrid admission framework. This framework integrates advanced psychometric models with expert evaluations to create a more just and comprehensive system tailored to Iran's educational landscape.

Mechanical Objectivity in Iran's Admission System

Mechanical objectivity, as a scientific ideal, prioritizes the removal of human judgment in favor of standardized protocols. Historically, it emerged as a response to concerns about subjective distortions in scientific representation, advocating for "value-free" observations untainted by personal bias (Douglas, 2009). In Iran's university admission system, this translates into a heavy dependence on the Konkour and final examinations, where test scores are treated as the definitive indicator of merit. The system operates on two key principles:

1. **Epistemic Reliability**: Standardized tests are assumed to provide a consistent, quantifiable measure of academic ability, akin to a scientific instrument like a thermometer, unaffected by external variables such as socioeconomic status.
2. **Ethical Impartiality**: Uniform testing conditions and scoring methods aim to ensure fairness, mirroring the controlled conditions of experimental science where all subjects are evaluated under identical circumstances.

This approach is reinforced by *classical test theory* (CTT), the psychometric foundation of Iran's exams. CTT posits that an observed test score comprises a "true score" (reflecting actual ability) and an "error" component, with reliability defined as the consistency of scores across repeated administrations (Lord & Novick, 1968). The operationalist roots of CTT, tied to early 20th-century positivism, emphasize measurable outcomes over interpretive depth, aligning seamlessly with mechanical objectivity's focus on observable, replicable results.

Critiques of Mechanical Objectivity

Despite its appeal, the application of mechanical objectivity in university admissions reveals several flaws:

Validity Concerns: The assumption that test scores comprehensively reflect a student's potential is problematic. Validity—whether a test measures what it intends to—is often sidelined in favor of reliability. For example, the Konkoor tests a fixed set of subjects (e.g., mathematics, physics, biology) for all applicants within a group, such as the empirical sciences track, regardless of their intended field (e.g., medicine vs. environmental health). This one-size-fits-all model fails to account for the diverse skills required across disciplines, undermining the test's predictive power for academic success. A hypothetical scenario illustrates this: a test with high reliability might consistently measure an irrelevant construct (e.g., travel preferences instead of mathematical ability), exposing CTT's inability to ensure appropriateness (Borsboom, 2005).

Narrow Assessment Scope: By reducing student potential to a single numerical score, the system overlooks qualitative attributes—creativity, resilience, or field-specific aptitudes—that are critical for higher education. This rigidity disadvantages students whose strengths lie outside the tested domains, perpetuating inequities rather than mitigating them.

Overemphasis on Quantification: Mechanical objectivity's commitment to eliminating subjectivity through quantification precludes alternative evaluation methods. The insistence on test scores as the sole criterion reinforces a narrow,

algorithmic approach, ignoring contextual factors like educational background or personal circumstances that shape performance.

These limitations suggest that mechanical objectivity, while striving for fairness, falls short of delivering a truly equitable or epistemically robust admission process.

Alternative Epistemic Virtues

To address these shortcomings, the paper explores two alternative epistemic virtues rooted in the history of scientific judgment:

Truth-to-Nature

Preceding mechanical objectivity, truth-to-nature emphasizes capturing the underlying essence of a phenomenon rather than its surface details (Daston & Galison, 2007). In testing, this aligns with latent variable models, such as item response theory (IRT), which infer unobservable traits (e.g., intelligence, aptitude) from observable responses. Unlike CTT, IRT accounts for item difficulty and discrimination, offering a more nuanced assessment of ability. Globally, IRT underpins high-stakes exams like the SAT and GRE, enhancing fairness by focusing on latent constructs rather than raw scores (Hambleton et al., 1991). For Iran, adopting such models could improve test validity by tailoring assessments to specific academic competencies.

Trained Judgment

Emerging as a counterpoint to mechanical objectivity's rigidity, trained judgment values the expertise of evaluators in interpreting complex data (Daston & Galison, 2007). In admissions, this manifests as holistic evaluation, where experts assess applicants through essays, interviews, and recommendations alongside test scores. Institutions like MIT exemplify this approach, using a multi-stage process involving faculty and admissions officers to evaluate candidates contextually. Trained judgment acknowledges that human insight can discern potential not captured by standardized metrics, fostering a more inclusive assessment.

Table 1. Epistemic Virtues and Their Application in University Admissions

Epistemic Virtue	Philosophical Definition	Assessment Counterpart	Manifestation in Iranian Admissions	Critique / Proposed Value in the Hybrid Model
Mechanical Objectivity	The suppression of human judgment and subjectivity through rigid, standardized rules and quantification.	Classical Test Theory (CTT) & Operationalism	The Konkur and standardized final exams; heavy reliance on raw, algorithmic scoring.	Critique: Prioritizes reliability over validity. Ignores socio-economic context and reduces complex human potential to decontextualized numbers.
Truth-to-Nature	The pursuit of underlying essences, idealizations, and fundamental patterns beyond mere surface-level observations.	Latent Variable Models	Currently absent or underutilized in the primary selection process.	Proposed Value: Shifts focus from observable raw scores to discovering the applicant's unobservable, true intellectual traits and capabilities.
Trained Judgment	The reliance on the synthesized expertise, interpretative skills, and contextual understanding of professionals.	Holistic Review, Portfolios, & Structured Interviews	Marginalized in favor of automated, algorithmic selection to avoid perceived bias.	Proposed Value: Allows expert assessors to evaluate applicants within their specific contexts, providing a nuanced and highly valid measure of potential.

Evolving Nature of Objectivity

The paper also engages with contemporary philosophy of science, which redefines objectivity beyond the value-free ideal. Scholars like Longino (1990) and Cartwright et al. (2022) argue that objectivity is not the absence of values but a context-dependent concept shaped by specific goals. In admissions, this means aligning evaluation methods with explicit academic and social objectives—e.g., fostering excellence, diversity, or equity—rather than adhering to a universal standard of impartiality. This shift challenges the notion that standardized tests alone can achieve justice, advocating instead for a purpose-driven design that integrates diverse epistemic tools.

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A Hybrid Framework for Iran

Building on these insights, the paper proposes a hybrid admission framework for Iran, combining the strengths of standardized testing with expert-driven evaluation:

Component 1. Enhanced Standardized Tests: Standardized tests remain a core element but are reimagined as an initial screening tool rather than the sole determinant. Using latent variable models like IRT, these tests establish a minimum competency threshold, focusing on criterion-referenced outcomes (e.g., mastery of core skills) rather than norm-referenced rankings. This reduces the pressure to differentiate top performers excessively, simplifies test design (e.g., aligning questions with curricula), and allows for hierarchical, field-specific assessments (e.g., tailored exams for medical vs. humanities tracks).

Component 2. Expert-Driven Evaluation: Beyond the threshold, a holistic review process assesses applicants' broader profiles—recommendations, personal statements, interviews—guided by the research priorities of specific programs (e.g., a biology department's focus on ecological innovation). Experts, trained to recognize "family resemblances" in applicant potential (a Wittgensteinian concept), balance quantitative scores with qualitative insights, ensuring alignment with academic goals while addressing social aims like equitable access.

Advantages and Considerations

This hybrid model offers several benefits:

- **Improved Validity**: By decoupling test scores from final decisions, the burden of proving comprehensive validity eases, allowing tests to serve as a reliable filter rather than a definitive measure.
- **Flexibility**: Field-specific assessments and expert input accommodate diverse talents, reducing the mismatch between tested skills and academic requirements.
- **Equity**: Contextual evaluation mitigates structural disadvantages, while retaining a baseline standard ensures fairness.

Challenges include resource demands (e.g., training evaluators) and potential subjectivity in expert judgments, necessitating clear guidelines tied to program goals. Existing quotas for disadvantaged groups can be integrated, with the initial test threshold ensuring minimum competency.

Conclusion

Iran's current admission system, anchored in mechanical objectivity, prioritizes reliability and impartiality but sacrifices validity and inclusivity. By embracing truth-to-nature and trained judgment, and redefining objectivity as goal-oriented, this paper advocates a transformative shift. The proposed hybrid framework—merging latent variable-based tests with expert evaluations—balances consistency with complexity, offering a fairer, more multidimensional path forward. This aligns with global trends in educational assessment and philosophical advancements, positioning Iran to better serve its students and society.

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