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Identifying the Components of Educational Equity in Iran: A Case Study of Markazi Province

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ABSTRACT

Objective: The present study aimed to identify and validate the key components of educational equity in Iran, with a specific focus on Markazi Province, in order to provide an empirically grounded framework for educational policy and planning.

Methods: This study adopted a mixed-methods (qualitative–quantitative) design. In the qualitative phase, educational equity components were extracted through directed content analysis and semi-structured interviews with educational experts. In the quantitative phase, a researcher-developed questionnaire was administered to teachers and school principals selected through cluster sampling in Markazi Province. Data were analyzed using Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) to assess construct validity and the structural relationships among components.

Results: The results revealed that educational equity is a multidimensional construct comprising seven components: access to educational resources, teaching–learning quality, human resource distribution, cultural equity, technological equity, participatory equity, and institutional equity. Structural equation modeling indicated that all components had statistically significant effects on overall educational equity. Among them, institutional equity and technological equity demonstrated the strongest predictive effects. Model fit indices confirmed the adequacy and robustness of the proposed conceptual model.

Conclusions: The findings suggest that achieving educational equity requires a comprehensive and systemic approach that extends beyond the equal distribution of physical resources. Greater emphasis on institutional governance, evidence-based policymaking, and the reduction of technological and cultural disparities is essential for promoting equitable educational outcomes, particularly in less advantaged regions.

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Introduction

In recent decades, educational justice has emerged as one of the central concepts in the discourse of sustainable development, social cohesion, and educational governance. In contemporary scholarship, educational justice is no longer understood merely as equal access to schools or educational facilities. Rather, it is considered a multidimensional and dynamic concept that emphasizes the provision of meaningful, high-quality learning opportunities for all learners, aligned with their individual, social, and contextual differences (Sen, 1999; UNESCO, 2024). This perspective challenges the simplistic notion of "formal equality" and highlights the necessity of identifying and addressing structural, cultural, and institutional barriers within educational systems.

At the theoretical level, educational justice has been explained through diverse perspectives. Rawls's theory of justice as fairness emphasizes the equitable distribution of educational opportunities and resources. In contrast, the capability approach developed by Sen and Nussbaum views justice as dependent upon the real empowerment of individuals to develop and realize their capabilities. Meanwhile, Nancy Fraser, through her tripartite framework of redistribution, recognition, and representation, conceptualizes educational justice as extending beyond the economic dimension of education, emphasizing the role of identity, culture, and the participation of marginalized groups. Taken together, these perspectives indicate that educational justice is not a one-dimensional phenomenon; rather, it results from the complex interaction of distributive, cultural, communicative, and institutional dimensions.

In Iran, educational justice is also regarded as one of the fundamental aspirations of the national education system and holds a prominent place in key policy documents, including the Constitution and the Fundamental Transformation Document of Education. Nevertheless, empirical evidence and field studies suggest that a significant gap exists between the declared objectives and the realities of implementation, particularly across different regions of the country. A considerable portion of domestic research on educational justice has largely adopted a descriptive orientation, focusing mainly on the limited dimension of the distribution of physical resources. Meanwhile, important aspects such as the quality of teaching and learning, recognition of cultural diversity, stakeholder participation, and educational capability development have received far less attention.

Markazi Province, which simultaneously encompasses advantaged urban areas, semi-advantaged regions, and underprivileged rural communities, provides a clear illustration of the uneven distribution of educational opportunities in Iran. Differences in school quality, shortages of specialized teachers in certain areas, unequal access to educational technologies, and the digital divide make this province an appropriate context for an in-depth examination of educational justice. Within such a context, identifying the components of educational justice through a combination of theoretical foundations and local realities can contribute meaningfully to evidence-based and informed policymaking.

Accordingly, the present article aims to identify and explain the components of educational justice in Iran with a focus on Markazi Province. By adopting a comprehensive and systematic approach, this study seeks to move beyond one-dimensional perspectives and provide a multilevel understanding of educational justice—one that may contribute both to enriching the academic literature in this field and to the development of more equitable educational policies and practical interventions.

Material and Methods

The present study is applied in purpose and descriptive–analytical in nature, and it was conducted using a mixed-methods approach (qualitative–quantitative). The adoption of a mixed-methods design was motivated by the complex and multidimensional nature of educational justice. In the qualitative phase, the key components of educational justice were explored, conceptualized, and identified. In the quantitative phase, the conceptual structure derived from the qualitative findings was empirically tested and validated. The integration of qualitative exploration and quantitative verification enabled the study to provide both a theoretically grounded and empirically supported model of educational justice.

Qualitative Phase: Identification of Components

In the qualitative stage, directed qualitative content analysis was employed to identify the core components of educational justice. The direction of the analysis was informed by established theoretical frameworks of educational justice, including the perspectives of Rawls (justice as fairness), Sen and Nussbaum (capability approach), Fraser (redistribution, recognition, and representation), and Habermas (communicative action and participatory justice). In addition, major

national policy documents of the Iranian education system, including the Constitution and the Fundamental Transformation Document of Education, were used as guiding references for the analytical framework.

Qualitative Population and Sampling

The qualitative population consisted of experts in the field of education and educational justice in Markazi Province. Participants included:

- Educational administrators and policy experts from the provincial Department of Education
- University faculty members specializing in curriculum studies, educational management, and educational sciences
- Experienced teachers familiar with issues related to educational inequality and justice

Participants were selected through purposive sampling, complemented by the snowball technique to identify additional knowledgeable informants. Data collection continued until theoretical saturation was achieved, meaning that no new conceptual categories emerged from subsequent interviews.

Data Collection and Qualitative Analysis

Data were collected through semi-structured interviews, allowing participants to elaborate on their experiences and perspectives regarding the dimensions and challenges of educational justice. Each interview was recorded (with consent), transcribed, and carefully reviewed.

The qualitative data were analyzed using the systematic process of open, axial, and selective coding. During open coding, meaningful units of data were identified and labeled. In axial coding, relationships among codes were examined to form broader conceptual categories. Finally, selective coding was employed to integrate the categories into a coherent conceptual framework. Through this process, the principal dimensions and components of educational justice were extracted, categorized, and conceptually organized.

Quantitative Phase: Validation of the Conceptual Model

Based on the qualitative findings, a researcher-developed Educational Justice Questionnaire was designed. The instrument operationalized the identified dimensions and components into measurable items, enabling the empirical assessment of the proposed conceptual framework.

Quantitative Population and Sampling

The statistical population in the quantitative phase consisted of school teachers and principals in Markazi Province. A sample was selected using cluster and random sampling techniques, ensuring representation across different districts and school types. The sample size was determined in accordance with recommended guidelines for structural equation modeling (SEM) to ensure adequate statistical power for model testing.

Validity and Reliability of the Instrument

To ensure content validity, the questionnaire was evaluated by a panel of subject-matter experts in educational policy, educational management, and curriculum studies. The Content Validity Ratio (CVR) and Content Validity Index (CVI) were calculated to assess the relevance and clarity of the items.

The reliability of the instrument was examined using Cronbach's alpha coefficient and composite reliability (CR). The results indicated acceptable reliability levels for all dimensions of the questionnaire, confirming the internal consistency of the measurement instrument.

Data Analysis

Quantitative data were analyzed using statistical software packages such as SPSS and AMOS (or SmartPLS). Initially, descriptive statistics were used to summarize the characteristics of the data. Subsequently, Confirmatory Factor Analysis (CFA) was conducted to examine the factorial structure of the educational justice construct and to verify the measurement model.

To investigate the relationships among the dimensions of educational justice and to test the overall conceptual framework, Structural Equation Modeling (SEM) was employed. Model adequacy was evaluated based on commonly accepted fit indices (e.g., CFI, TLI, RMSEA, and χ^2/df). These indices provided the basis for assessing the goodness-of-fit of the proposed model and determining the extent to which the empirical data supported the conceptual structure derived from the qualitative phase.

Ethical Considerations

Ethical principles were carefully observed throughout all stages of the research process. Participation in the study was voluntary, and participants were informed about the objectives and procedures of the research prior to data collection. Informed consent was obtained from all interviewees and survey respondents. Confidentiality and anonymity were strictly maintained. Personal identifiers were removed from interview transcripts and questionnaire data, and all

information was used solely for academic research purposes. Participants were assured that their responses would remain confidential and would not influence their professional status or institutional position. Furthermore, participants were given the right to withdraw from the study at any stage without any consequences. Data were stored securely and used exclusively for scientific analysis. The research process adhered to established ethical standards in educational research, ensuring respect for participants, transparency in data handling, and integrity in reporting the findings.

Results

In the first step, descriptive statistics for the dimensions and components of educational justice—including the mean, standard deviation, and minimum and maximum scores—were calculated. The results are presented in Table 1.

Table 1. Descriptive Statistics for the Components of Educational Justice

Row	Component of Educational Justice	Mean	Standard Deviation	Minimum	Maximum
1	Justice in access to educational resources	3.21	0.74	1.45	4.80
2	Justice in teaching–learning quality	3.08	0.69	1.60	4.70
3	Justice in distribution of human resources (teachers)	2.94	0.81	1.20	4.65
4	Cultural justice and attention to individual differences	3.15	0.67	1.75	4.85
5	Justice in access to technology and digital education	2.87	0.88	1.00	4.60
6	Justice in participation of educational stakeholders	3.02	0.71	1.50	4.75
7	Institutional justice and educational policy-making	3.10	0.65	1.80	4.90

To assess the quality of the measurement model for the educational justice constructs, Composite Reliability (CR) and the Average Variance Extracted (AVE) were computed. The results are shown in Table 2.

Table 2. Reliability and Convergent Validity of Educational Justice Constructs

Component	Cronbach's Alpha	Composite Reliability (CR)	AVE
Justice in access to educational resources	0.83	0.87	0.58
Justice in teaching–learning quality	0.85	0.88	0.60
Justice in distribution of human resources	0.81	0.86	0.55
Cultural justice	0.84	0.89	0.62
Technological justice	0.86	0.90	0.64
Participatory justice	0.82	0.87	0.57
Institutional justice	0.88	0.91	0.66

Values of Cronbach's alpha and CR above 0.70, and AVE values above 0.50, indicate acceptable reliability and convergent validity of the instrument.

To confirm the factor structure of the educational justice model, Confirmatory Factor Analysis (CFA) was conducted. The standardized factor loadings, t-values, and significance levels are presented in Table 3.

Table 3. Confirmatory Factor Analysis of Educational Justice Components

Component	Standardized Factor Loading	t-value	Significance
Justice in access to educational resources	0.74	11.32	<0.001
Justice in teaching–learning quality	0.79	12.85	<0.001
Justice in distribution of human resources	0.71	10.64	<0.001
Cultural justice	0.82	13.97	<0.001
Technological justice	0.85	14.56	<0.001
Participatory justice	0.76	11.98	<0.001
Institutional justice	0.88	15.21	<0.001

To evaluate the adequacy of the measurement model, model fit indices were calculated. Table 4 summarizes the results.

Table 4. Fit Indices of the Educational Justice Measurement Model

Fit Index	Obtained Value	Acceptable Value
χ^2/df	2.41	< 3
GFI	0.91	> 0.90
CFI	0.94	> 0.90
TLI	0.93	> 0.90
RMSEA	0.061	< 0.08

In the final stage, the effect of each component on the overall construct of educational justice was examined. The standardized path coefficients, t-values, and results are reported in Table 5.

Table 5. Structural Equation Modeling Results of Educational Justice Components

Path	Standardized Coefficient (β)	t-value	Result
Educational resources → Educational justice	0.31	4.82	Significant
Teaching–learning quality → Educational justice	0.34	5.26	Significant
Distribution of human resources → Educational justice	0.27	4.11	Significant
Cultural justice → Educational justice	0.38	6.02	Significant
Technological justice → Educational justice	0.41	6.88	Significant
Participatory justice → Educational justice	0.29	4.57	Significant
Institutional justice → Educational justice	0.45	7.34	Significant

Discussion

The purpose of the present study was to identify and explain the components of educational justice in Iran, with a specific focus on Markazi Province, and to validate its conceptual structure based on quantitative data. The results of the statistical analyses indicate that educational justice is a

multidimensional construct, and its realization requires simultaneous attention to distributive, qualitative, cultural, technological, participatory, and institutional dimensions.

The descriptive findings revealed that the mean scores of the educational justice components are at a moderate to relatively low level. In particular, the components of technological justice and justice in the distribution of human resources obtained the lowest mean values. This finding reflects the persistence of digital divides and inequalities in access to qualified teachers across different regions of Markazi Province. Such disparities are consistent with national studies and official reports of the Ministry of Education that document regional inequalities in educational opportunities. This condition can be interpreted within Sen's capability approach, whereby the lack of technological resources and qualified human capital constrains students' real opportunities and capabilities for meaningful learning.

The results of the confirmatory factor analysis demonstrated that all identified components have significant and acceptable factor loadings. This indicates that the conceptual structure derived from the qualitative phase possesses strong internal coherence and adequate construct validity. Moreover, the satisfactory fit of the measurement model confirms that educational justice in Markazi Province cannot be reduced to one or two isolated dimensions; rather, it should be understood as an interconnected network of mutually reinforcing factors.

In the structural model, the findings showed that although all components exert a significant effect on educational justice, the magnitude of these effects varies. The strongest effect was observed for institutional justice and educational policymaking. This result underscores the decisive role of policy design and implementation, decision-making mechanisms, and the flexibility of the educational system in either promoting or undermining educational justice. This finding aligns closely with Nancy Fraser's perspective on the role of institutional structures in reproducing or mitigating social inequalities.

Following institutional justice, technological justice accounted for the second strongest contribution to educational justice. This finding is particularly salient in the context of the expansion of virtual and blended learning, as it highlights how unequal access to educational technologies can become a powerful driver of educational inequality. The result is consistent with UNESCO's international reports, which emphasize the digital divide as one of the central challenges to achieving educational justice in developing countries.

Furthermore, the significant effect of cultural justice and attention to individual differences indicates that neglecting students' cultural, social, and learning diversity can weaken educational justice. This finding confirms that educational justice extends beyond the equitable distribution of material resources and requires the recognition of diversity and respect for learners' multiple identities—an issue that occupies a central position in the theoretical frameworks of Fraser and Habermas.

Overall, the findings of this study suggest that educational justice in Markazi Province is influenced less by the mere scarcity of resources and more by the quality of educational governance, evidence-based policymaking, and a multidimensional understanding of justice. These results provide an empirical foundation for revising educational policies and implementation programs, particularly in less advantaged areas, and can inform more equitable and sustainable approaches to educational development.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by the ethics committee of Islamic Azad University. The patients/participants provided their written informed consent to participate in this study.

Author contributions

All authors contributed to the study conception and design, material preparation, data collection, and analysis. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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