

RESEARCH ARTICLE

The extension of wealth gap in education: the impact of economic inequality perception on students' value perception

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ABSTRACT

Abstract: Wealth gap is one of the key issues facing modern society. The inequality in social distribution and the risk of class solidification caused by it have gradually penetrated into the field of education. For young students, the economic inequality perception brought about by wealth gap affects students' correct values. Therefore, the study proposes hypotheses H1 and H2 to analyze the specific impact of economic inequality perception on students' educational value perceptions and fairness beliefs. The study conducts a questionnaire survey on 463 middle school students, and conducts regression analysis and mediation analysis based on the survey results. A negative correlation was observed between students' economic inequality perception and their educational value perception, at -0.24 , ($p < 0.01$). Students' economic inequality perception and their equal opportunity perception also showed a significant negative correlation, at -0.27 ($p < 0.01$). Economic inequality perception also had negative impacts on educational values ($\beta = -0.17$, $t = 4.14$ and $p < 0.001$), while fairness perception and the equal opportunity perception had a significant mediating effect.

Keywords: wealth gap; value perception; economic inequality; fairness perception; equal opportunity

1. Introduction

Economic inequality perception is an individual's subjective understanding of socioeconomic inequality, which affects various cognitions such as individual consumption decisions and value judgments in life. In a social environment where wealth gap continues to widen, economic inequality perception is widely spread through online media, which has negative impacts on young people. In cultivating students' value cognition, educational value perception and social equity value cognition are the keys to guiding their learning and life. Educational value perception affects students' attitudes in teaching practice. Students judge whether learning is beneficial to themselves based on their own educational value perception^[1]. Generally speaking, students with a correct educational value perception have higher enthusiasm and proactive attitude in learning practice. However, when students do not agree with the value of education, students' academic achievements and motivation will also be negatively affected^[2]. Therefore, cultivating educational value perception is the focus of adolescent mental health education in middle school. Most of the current research results on factors affecting students' value cognition basically define variables as micro factors such as family environment,

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parent-child relationship, and interpersonal relationships. However, there are relatively few discussions on the overall economic environment of society and wealth gap. The innovation of the research is that it connects students' economic inequality perception with their educational value perception, social equity and other values, and explores the relationship between the two. This study uses empirical analysis and questionnaire research methods, taking middle school students as the object, to analyze the cognitive impact of their economic inequality perception. This paper is to examine the relationship between the psychology of economic inequality and students' educational behavioral decisions, so as to guide the development of secondary education policies and educational practices.

2. Research methods

2.1. Research theories and hypotheses

The widening wealth gap and the uneven distribution of income resources have become one of the problems in modern society. The economic inequality perception also affects the behaviors and concepts of subjects with low economic status. The "Status Attainment Model" theory proposed by Blau and Duncan believes that individuals have differences in their expected probability of success, and cognitive differences will affect their perception of return on investment. Therefore, subjects in marginalized socioeconomic positions are more likely to believe that the probability of success through their own efforts is low^[3]. Social capital theory believes that family background, social network and community resources have an important impact on students' educational achievements. In a social context where the wealth gap is widening, the gap in families' ability to obtain resources is constantly widening, which affects children's educational opportunities. In social cognitive theory, observational learning and social interaction play an important role in the formation of students' values^[4]. Students' economic inequality perception influence the role models and behavioral patterns students observe, thereby shaping their values. Economic inequality perception may weaken subjects' social mobility beliefs. When students have a perception of insufficient social mobility from the economic inequality perception, it may lead students to believe that they cannot achieve success through their own efforts^[5]. In the process of cultivating students' value cognition, students reduce their recognition of concepts such as educational value, social equity, and justice, and reduce their tendency to learn independently and work hard, which ultimately leads to the extension of the wealth gap in education^[6]. The study proposes the following hypotheses:

H1: Economic inequality perception has negative impacts on students' educational value perception.

H2: Economic inequality perception has negative impacts on students' fairness beliefs.

2.2. Research object

The study distributed paper questionnaires to two middle schools in Chengdu, Sichuan Province, and collected them after students completed them. The study conducted a survey in a public high school and a private high school to explore the differences in students' perceptions of economic inequality and educational value in different learning and growth environments. Totaling 500 questionnaires were distributed, and 37 with missing answers or meaningless answers were eliminated. Totaling 463 valid questionnaires were obtained (92.6%). 229 were male (49.46%), and 234 were female (50.54%). The youngest was 15 and the oldest was 19. The overall average age was 16.47±1.19 years old. There were 213 first-year students, accounting for 46%, 148 second-year students, accounting for 31.97%, and 102 third-year students, accounting for 22.03%.

2.3. Research tools

Based on the "Subjective Wealth Gap Scale" proposed by Schmalor, the study selected four items related to the understanding of economic inequality to form the economic inequality perception scale. The scale includes four questions: "Almost all wealth is in the hands of a few people", "No one is rich except for those in the upper class of society", "In life, the opportunities needed for success are only available to the wealthy", and "Only in the upper class of society have all wealth" are used to assess students' awareness of the wealth gap. The scale adopts a five-point scoring method, from 1 to 5, signifying strongly disagree, disagree, average, agree, and strongly agree^[7]. The Cronbach's α of the economic inequality perception scale in this study was 0.716, indicating good reliability. **Table 1** presents the specific scale information.

Table 1. Main research scales and topic information.

Tool	Number	Title
Economic Inequality Perception Scale (U)	1	Almost all wealth is in the hands of a few people
	2	No one is rich except for those in the upper class of society
	3	In life, the opportunities needed for success are only available to the wealthy
	4	Only in the upper class of society have all wealth
Fair Perception Questionnaire (J)	1	What happens around me is fair
	2	I am usually treated fairly
	3	I believe I can get what I deserve
	4	Unfair phenomena are the exception rather than the norm
	5	Basically, I believe that what happened to myself is consistent with what I thought
	6	I think some major decisions about me are usually fair
Educational Value Perception Questionnaire (E)	1	In your opinion, is it important to perform well in school?
	2	In your opinion, is it important to achieve high scores in school?
	3	In your opinion, is it important to enter a university after graduating from high school?
	4	In your opinion, is academics important?
	5	In your opinion, is it important to become one of the best students in the class?
	6	In your opinion, is it important to enter the best university to study?
Equal Opportunity Perception Questionnaire (F)	1	In our country, as long as children work hard and are smart enough, they can have the same opportunities for further education.
	2	The descendants of workers and farmers have the same opportunities as the descendants of others to become wealthy and influential individuals.
Elitism Belief Scale (G)	1	In society, where there is a will, there is a way
	2	Everyone has the same chance of success
	3	As long as you work hard and study hard, there is a possibility of success
	4	There will be as much return as there is effort put in
	5	Students who put in effort will achieve outstanding results and receive praise

As shown in **Table 1**, the study also selects six items from the "Beliefs in a Just World Questionnaire" to form a fairness perception questionnaire for students, which is used to assess students' overall recognition of social fairness. The scale uses a seven-point scoring method. 1 is strongly disagree and 7 is strongly agree. The Cronbach's α coefficient of the Fairness Perception Questionnaire is 0.881, which is highly reliable and suitable for research^[8]. In addition, the study designs an educational value perception questionnaire based on factors such as students' performance, grades, academic studies, further education, class level and other factors in educational practice to assess students' value perception of educational practice^[9]. The educational

value perception questionnaire also uses a five-point scoring method, with 1 indicating that it is not important at all and 5 indicating that it is very important. The Cronbach's α of the Educational Value Perception Questionnaire is 0.797, demonstrating good reliability and suitable for research [10]. To analyze the mediating effect of economic inequality perception on educational value perception and fairness perception, the study uses equal opportunity perception as a mediating adjustment idea. Based on the China Comprehensive Social Survey Questionnaire, two of the questions are selected to form a questionnaire. This scale also uses a seven-point scoring method. 1 is strongly disagree and 7 is strongly agree. The Cronbach's α is 0.681, which indicates good reliability and is suitable for research. Finally, to explore the mediating mechanism of elitist beliefs on students' perception of economic inequality and educational value cognition, a elitist belief scale was designed. This scale consists of 5 questions, covering students' perceptions of academic engagement and fairness. This scale also uses a 5-point scoring method for scoring, where 1 represents completely disagree and 5 represents completely agree. The Cronbach's alpha coefficient of the questionnaire is 0.844, indicating good reliability and suitability for research.

2.4. Data processing methods

After obtaining students' economic inequality perception, education, and equity cognitive evaluation through questionnaires, the study uses SPSS26.0 to organize the data content. After data cleaning is completed using statistical software, some indicators are reverse scored, and the Pearson Correlation Coefficient (PCC) completes the correlation analysis between variables [11]. Afterwards, the differences between the core variables and the subject's demographic variables are tested. Finally, the PROCESS macro program of statistical software is used to conduct mediation effect analysis.

3. Experimental results

3.1. Difference test results of demographic variables

To examine the differential impact of the subject's grade and gender on the questionnaire results, the study carried out a difference test analysis of demographic variables. The specific results are shown in Figure 1.

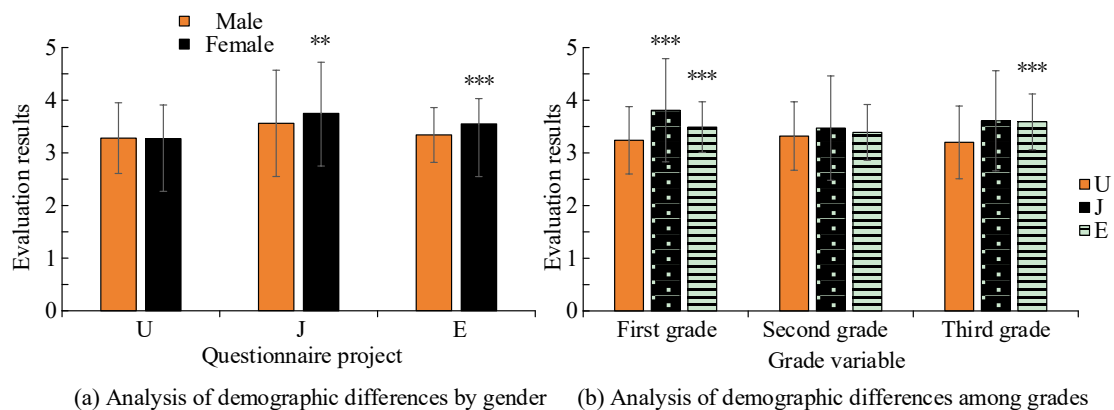


Figure 1. Analysis of differences in demographic variables.

Note: * means $p < 0.05$, ** indicates $p < 0.01$, *** means $p < 0.001$, and their meanings are the same in subsequent charts.

From Figure 1(a), no difference occurred between male and female subjects in economic inequality perception ($p > 0.05$). In the fairness perception questionnaire, the average evaluation of female was 3.75 ± 0.97 , and the average evaluation of male was 3.56 ± 1.01 . The evaluation of female was higher than that of male ($p < 0.01$). In the educational values survey results, the average evaluation of female was 3.55 ± 0.48 ,

and the average evaluation of male was 3.34 ± 0.52 . Similarly, the evaluation of female was higher than that of male ($p < 0.001$). From Figure 1(b), no obvious difference occurred between the grades of the subjects in economic inequality perception ($p > 0.05$). In the fairness perception questionnaire, first-year were higher than second- and third-year ($p < 0.001$). In the educational values survey results, first-year and third-year were higher than second-year ($p < 0.001$). Generally speaking, in terms of gender differences, male were weaker than female in perceptual sensitivity. Perceptual sensitivity and happiness perception have a greater impact on the economic inequality perception, which may lead to differences in male's economic inequality perception and female's. However, the findings found no significant differences. In the Chinese middle school environment, students of different grades have differences in educational value perception and perceptions of fairness. Because students at this stage are far less concerned about socioeconomic inequality than they are about school life, there is still no significant difference in their economic inequality perception across grades in middle school [12].

3.2. Correlation analysis results

Afterwards, PCC was employed to explore the relationship among different variables, as presented in **Table 2**.

Table 2. Correlation coefficient between different variables.

Questionnaire	Average evaluation	Standard deviation	U	J	E	F
U	3.25	0.63	1			
J	3.66	0.99	-0.24**	1		
E	3.47	0.49	-0.14**	0.17**	1	
F	3.59	1.42	-0.27**	0.58**	0.19**	1

From **Table 2**, students' economic inequality perception and their fairness perception had a negative correlation, at -0.24 ($p < 0.01$). Therefore, the H2 is preliminarily verified. Students' economic inequality perception showed a significant negative correlation with their educational value perception, at -0.24 ($p < 0.01$). Therefore, the H1 is preliminarily verified. Finally, students' economic inequality perception and their equal opportunity perception also demonstrated a negative correlation, at -0.27 ($p < 0.01$). Generally speaking, the economic inequality perception has negative impacts on students' psychological and learning status, especially students whose family economic environment is not sufficient to support the cost of study [13]. Since the rate of return on education as a long-term investment cannot be directly observed, economically marginalized students may be more susceptible to the idea of reducing investment in their own education. The results of this study also confirm this social phenomenon.

3.3. The mediating role of economic inequality perception and educational value perception

To illustrate the relationship among economic inequality perception, just world beliefs and educational values, the study used mediation effect analysis to examine the mediating role of students' fairness cognitive variables, as presented in **Table 3**.

Table 3. The mediating role of fairness cognitive variables between students' economic inequality perception and educational value perception.

Variable	Educational value perception		Fairness perception		Educational value perception	
	β	t	β	t	β	t
Gender	0.46	5.47***	0.17	1.97	0.47	6.11***
Grade	0.07	1.74	-0.13	-3.17	0.15	2.48*

Variable	Educational value perception		Fairness perception		Educational value perception	
	β	t	β	t	β	t
Economic inequality perception	-0.17	4.14***	-0.27	-8.54***	0.18	5.17***
Fairness perception	/	/	/	/	0.17	4.41***
R ²	0.08		0.06		0.09	
F	17.58***		28.64***		21.54***	

Table 3. (Continued)

As shown in **Table 3**, in the regression model of educational values, gender ($\beta=0.46, t=5.47, p<0.001$) and economic inequality perception ($\beta=-0.17, t=4.14, p<0.001$) had impacts on educational values, while the effect of grade was not significant ($\beta=0.07$ and $t=1.74$). The R² was 0.08, and the F was 17.58 ($p<0.001$). The model was overall significant. Therefore, hypothesis H1 holds. In the regression model of fairness perception, economic inequality perception ($\beta=-0.27, t=-8.54, p<0.001$) had negative impacts on fairness perception, while the effects of gender ($\beta=0.17$ and $t=1.97$) and grade ($\beta=-0.13$ and $t=-3.17$) were not significant. The R² was 0.06, the F value was 28.64***, and $F<0.001$ indicates that the model was overall significant. Therefore, H2 is established. Finally, in the model after adding fairness perception, gender ($\beta=0.47, t=6.11, p<0.001$) still had positive impacts on educational values, the direct effect of economic inequality perception weakened ($\beta=0.18, t=5.17, p<0.001$), and fairness perception ($\beta=0.17, t=4.41, p<0.001$) had positive impacts on educational values. The R² was 0.09, and the F was 21.54, ($p<0.001$). Fairness perceptions had a mediating role in students' economic inequality perception.

Afterwards, the study explored the mediating role of equal opportunity perception between students' economic inequality perception and fairness perception, as displayed in **Table 4**.

Table 4. The mediating role of equal opportunity perception between students' economic inequality perception and their fairness perception.

Regression		Overall fitting index			Regression coefficient and significance		
Result variable	Predictor variable	R	R ²	F	β	95%CI	t
Fairness perception	/	0.54	0.292	84.41***	/	/	/
	Academic performance				0.06	[0.001, 0.101]	2.00*
/	Gender				0.18	[0.083, 0.299]	3.84**
	Economic inequality perception		/		-0.17	[-0.202, -0.088]	-4.51***
	Equal opportunity perception				0.48	[0.418, 0.532]	16.15***
	U*F				0.12	[0.064, 0.176]	4.17***

From **Table 4**, after the equal opportunity cognitive model was added, academic performance differences had positive impacts on fairness perception ($\beta=0.06, t=2.00, p<0.05$). Gender differences also had positive impacts on students' fairness perception, with an impact coefficient of 0.18, ($p<0.01$). The students' economic inequality perception had negative impacts on their fairness perception, with an impact coefficient of -0.17, ($p<0.001$). Equal opportunity perception had positive impacts on fairness perception ($\beta=0.48, t=16.15, p<0.001$). The R² was 0.54, the F was 84.41, ($p<0.001$). The model was overall significant.

The study explored the mediating role of equal opportunity perception in students' economic inequality perception and educational value perception, as presented in **Table 5**.

Table 5. The mediating role of equal opportunity perception between students' economic inequality perception and their equal opportunity perception.

Regression		Overall fitting index			Regression coefficient and significance			
Result variable	Predictor variable	R	R ²	F	β	95%CI	t	
Educational value perception	/	0.29	0.084	21.65***	/	/	/	
	Academic performance				0.15	[0.034, 0.164]	3.04**	
	Gender				0.42	[0.245, 0.500]	4.51***	
	/	Economic inequality perception		/		0.19	[0.108, 0.243]	5.41***
		Fairness perception				0.17	[0.073, 0.208]	4.65**

From **Table 5**, after the equal opportunity cognitive model is added, students' academic performance had positive impacts on educational values ($\beta=0.15$, $t=3.04$, $p<0.05$). Gender differences also had positive impacts on educational value perception, with an impact coefficient of 0.42 ($p<0.001$). The economic inequality perception had a significant positive impact on educational value perception, with an impact coefficient of 0.19 ($p<0.001$). Finally, students' fairness perception had active impacts on educational value perception ($\beta=0.17$, $t=4.65$, $p<0.05$). The R² was 0.29, and the F was 21.65 ($p<0.001$), demonstrating that the overall model was significant. Social equity cognition satisfies students' autonomy, allowing them to have a sense of control over their own behavior and choices, while enhancing their sense of belonging to society and interpersonal environment. Therefore, social equity cognition can compensate for students' cognitive psychology by believing in fairness and justice, rebuilding positive connections with society, and alleviating the negative impact of economic inequality perception on educational value cognition.

Finally, the study explored the mediating role of elitist performance between students' perception of economic inequality and their perception of educational value, as shown in **Table 6**.

Table 6. The mediating role of elitist beliefs in students' perceptions of economic inequality and educational equity.

Regression		Overall fitting index			Regression coefficient and significance			
Result variable	Predictor variable	R	R ²	F	β	95%CI	t	
Cognition of Educational Value	/	0.49	0.24	91.76***	/	/	/	
	Academic performance				-0.05	[-0.1105, 0.0006]	-1.94	
	Gender				0.11	[-0.001, 0.2216]	1.94	
	/	Perceived economic inequality		/		-0.08	[-0.1432, -0.0260]	-2.83**
		Fair cognition				0.44	[0.3804, 0.4974]	14.73***

From **Table 6**, it can be seen that the R^2 of the model is 0.49, the F value is 91.76, and the significance level is $p < 0.001$, indicating that the overall model is significant. After incorporating the elitist performance model, student academic performance did not have a significant impact on educational values ($p > 0.05$). And gender differences also cannot significantly predict educational values ($p > 0.05$). Perceived economic inequality has a significant negative impact on educational values ($\beta = -0.08$, $t = -2.83$, $p < 0.01$). Finally, the perception of fairness still has a significant positive impact on educational values ($\beta = 0.44$, $t = 14.73$, $p < 0.001$). It can be speculated that the belief in elitism helps students believe that the surrounding environment is stable and orderly. But when students believe that economic inequality is uncontrollable, they may question their beliefs in elitism, social equity, and educational values, and may question their belief that their academic investment and efforts will be rewarded.

4. Conclusion

To verify the impact of economic inequality perception on students' educational value perception and fairness perception, the study conducted a questionnaire survey with 463 middle school students as the research subjects. Experimental results showed that in the regression model of educational values, gender ($\beta = 0.46$, $t = 5.47$, $p < 0.001$) and economic inequality perception ($\beta = -0.17$, $t = 4.14$, $p < 0.001$) had impacts on educational values. In the regression model of fairness perception, economic inequality perception ($\beta = -0.27$, $t = -8.54$, and $p < 0.001$) had negative impacts on fairness perception. In the model after adding fairness perception, gender ($\beta = 0.47$, $t = 6.11$, $p < 0.001$) still had positive impacts on educational values, and the direct impact of economic inequality perception weakened ($\beta = 0.18$, $t = 5.17$, and $p < 0.001$), and fairness perception ($\beta = 0.17$, $t = 4.41$, $p < 0.001$) had positive impacts on educational values. Therefore, research shows that students' economic inequality perception have negative impacts on educational value perception and fairness perception, and equal opportunity perception in the educational process can play a moderating role. The study believes that in education, to weaken the negative impact of economic inequality perception on students' educational value perception, it is necessary to maintain students' trust in social fairness and stabilize students' psychological state through education on fairness perception and equal opportunity perception. In the overall social environment, the government needs to optimize distribution policies, improve the current situation of the widening wealth gap, and create an equal and just social environment^[13]. The limitation of the research is that the design indicators of some questionnaires are relatively thin. Therefore, future research will expand the number of index items and include as many factors that affect students' educational cognitive decision-making as possible.

Conflict of interest

The authors declare no conflicts of interest.

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