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Effects of Social Stratification and Kinship Networks on Educational Attitudes: Sociology of education from the perspective of social stratification and social networks

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Abstract

Sociological research has predominantly concentrated on the significance of educational attitudes as a mediating factor in generating class disparities in educational attainment. However, theoretical considerations regarding the purpose of education and the findings of sociological research on social networks suggest that sociological analyses of educational attitudes have the potential for development in the following two directions. The first is to broaden the research scope to include attitudes toward children's social contribution rather than limiting it to attitudes toward children's status attainment, as has been conducted in the past. Second, the scope of the background factors to be considered should not be solely the status and resources of the parents but should be extended to their social networks. Considering these issues, we conducted an exploratory analysis from these two perspectives using survey data of parents raising children.

The results of the log-linear model revealed the following: (1) status attainment orientation was associated with parents' social status and positively correlates with the size of the competitive network; (2) cooperative network size, but not social class, was positively associated with the socially contributory parenting orientation, which has traditionally been overlooked; (3) positive parenting attitudes were negatively associated with competitive network size, whereas social class exhibited no direct association; (4) individuals with strong status attainment orientation were more likely to adopt negative parenting attitudes. These results suggest that private and cooperative relationships may influence the development of prosocial attitudes, competitive kinship may be a background factor in multigenerational influences on educational attainment, and when enhancing child-rearing resources outside the nuclear family, we should consider the quality of the relationship between these resources and

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the child's parents.

Key words: social network; prosocial attitude; competitive network

1. Research objectives and analytical perspectives

1.1. Scope of research on "social class and education"

Research on educational attitudes in the field of sociology of education has primarily been conducted in the framework of "social class and education". In this framework "education" refers to educational attainment—the level of academic skills and educational credentials—and educational attitudes are considered a mediating factor in the effect of parental class on children's educational attainment (see dashed frame in Fig. 1). The focus in this framework is Lareau's (2003) point that the middle class provides concerted cultivation, whereas the working class raises children by leaving them to their natural growth. Numerous empirical studies have been conducted in Japan, starting with Honda (2008), who was inspired by Lareau, and including Isa's (2019) study using longitudinal qualitative and quantitative research. Most studies analyzed the relationship between class-based educational attitudes and disparities in children's educational attainment [1].

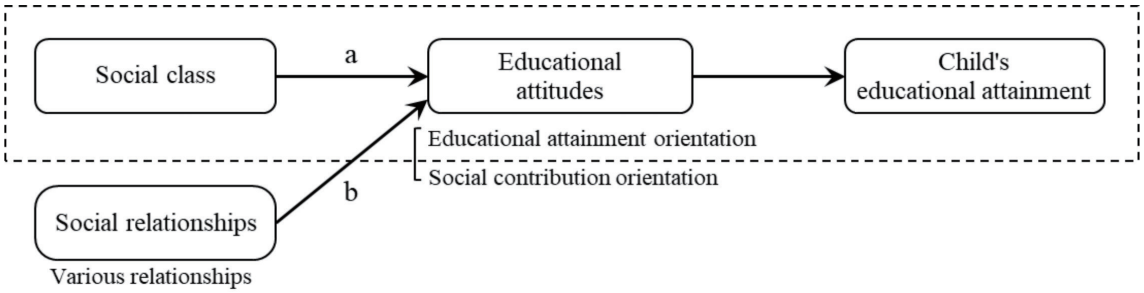

Figure 1. Research framework

Note: Dashed frame denotes the framework of "social class and education" research.

1.2. Another facet of education

As educational attainment is a strong predictor of occupational status, income, and various opportunities in life, research on educational attainment undoubtedly has considerable social significance. Moreover, at the individual household level, parents' ambitions related to their children's educational and socioeconomic status attainment should not be criticized. However, a problem could occur if the emphasis on the individualistic achievement of academic skills and educational levels is so significant that other essential aspects of education are forgotten.

The idea that the pursuit of individualistic success and well-being results in a lack of consideration for others and indifference to the community is a frequently raised concern (Bellah et al. 1985; Nobira 2000; Ikeda 2005). Behind this concern lies the perception that utilitarian individualistic principle that supports the individualistic pursuit of profit, idealizes an individual who perceives relationships with others as competitive and at odds with oneself and who realizes their life according to their personal plan, unhindered by others and isolated from them (Ikeda 2005, p. 102).

In other words, it is important to think not only for oneself but also for others and the community, and to manage society in cooperation (Bellah et al. 1985; Ikeda 2005). Transmitting these values to children and maintaining and sustaining the community through individuals who have acquired these values is also an important purpose of education (Nobira 2000). Nevertheless, in research of the sociology of education dealing with the relationship between family background and educational attitudes, this aspect of parental educational attitudes has rarely been addressed. Therefore, this study's first objective is to examine educational attitudes that promote social contribution.

The individual characteristic of not prioritizing oneself and valuing others or the community is called Altruism. Altruism has been discussed in sociology since its earliest days and mentioned by the fathers of sociology, such as Auguste Comte. Mainly in the United States, volunteer behavior, which is a representative example of altruistic or prosocial behavior, has been the subject of a series of quantitative studies (Mitani 2015). Although almost no quantitative studies have examined prosocial behaviors in Japan, Mitani (2013, 2014) actively investigated it and discovered that class-related factors had little impact on prosocial behaviors such as volunteering [2)]. Moreover, Mitani found that school education did not effectively socialize children to become altruistic individuals [3)], whereas growing up seeing adults in the neighborhood helping others during childhood and mothers' religious participation were statistically significant factors associated with altruism. The finding that growing up surrounded by adults in a neighborhood that helps others has an effect suggests a socialization effect of non-relative social networks. On the other hand, Simpson and Willer (2015) reviewed social mechanisms that foster and maintain prosocial behaviors and found that social networks tend to produce prosociality through emotional commitment, sense of ethical obligation, interest in others' welfare, and reduction of uncertainty of behaviors typically exhibited by others.

1.3. Focus on social networks

As described above, social networks may be associated with the individual development of prosociality (Mitani 2013) and as social mechanisms that foster and maintain prosocial behaviors (Simpson and Willer 2015). However, perspectives on such networks were rarely incorporated in research on educational attitudes, which has followed the framework of "social class and education."

Nevertheless, analysis to which the above perspective can be applied has also been conducted in the field of "social class and education". Led by Mare's (2011) question, recent empirical studies have focused on the effects of multigenerational influences on educational achievement. Research findings on multigenerational effects on children's educational attainment suggest that not only parental class attributes but also parental social relationships may influence children's educational attainment (see arrow b in Figure 1). For instance, if knowledge and ways of thinking ("habitus") beneficial for educational attainment are passed on among relatives, it may be meaningful to explore the types of interactions and social relationships that affect the formation of parents' educational attitudes from a social network perspective. However, the focus of these studies has been to trace the origins of class influences (arrow a in Figure 1) back multiple generations, with little attention paid to the relationship

between parents and relatives (arrow b).

In contrast, some studies using the concept of social capital focus on the influence of social relationships on education and parenting. It should be noted that this concept is highly polysemic, but according to Inaba (2011a), most studies have focused on how networks foster trust and cooperative behavior. As trust and cooperation are expected to be associated with prosocial educational attitudes, their relationship should have been studied, but such studies have not been conducted. Japanese research in the sociology of education has highlighted that social capital held by parents and schools is associated with children's academic ability (Shimizu 2014). In other words, although some studies has focused on what arrow b in Figure 1 represents, the main focus of the research has been limited to its impact on children's educational attainment. This approach is similar to that of Lin (2001) and Bourdieu (1986), among researchers on social capital, who argue that the resources and capital present in networks are involved in individual status attainment and living conditions. However, assuming that attention to social capital theory is rooted in the recognition of the limits of methodological individualism and reflection on excessive individualism (Tsuji and Sato 2014), these ways of thinking are somewhat limiting. Although other topics such as local social capital, trust in schools, and happiness have been studied in Tsuyukuchi (2019), based on references to Putnam's (1993, 2000) work focusing on cooperation and general trust at the macro level and Coleman's (1988) discussion of the educational effects of social relationships within and outside the family, no studies have addressed the relationship between socially contributory attitudes and social capital. Moreover, most studies were conducted with the assumption that social capital has positive effects, such as trust and cooperation, as mentioned above, whereas little studies considered that they could have negative effects as well. Nonetheless, social capital can have a dark side (Putnam 2000; Inaba 2011b). It has also been pointed out that networks can have negative effects such as stress since the beginning of research using the concept of networks in Japan (Meguro 1988).

In the field of family sociology, research on childcare networks has been accumulated. However, its research interest has concentrated on supportive networks for mothers raising infants and toddlers. (Ochiai 1989, Matsuda 2008). This trend is understandable, as childcare assistance is especially important while raising young children. However, the interests of parents become complex as the children grow up, shifting from the simple hopes of having their child grow up healthy to guiding them to become individuals who have acquired the traits of their expectations. Therefore, research should consider that the effects of the network in parenting may broaden beyond direct help. For instance, it has been pointed out that parents may use other parents' strategies and behaviors as a reference for their own, compare their children's development with others', or be expected to yield to peer pressure, have a positive or negative effect on educational attitudes (Kim 2007, Aramaki 2019, 2023). As noted in Merton's (1957) theory of reference groups, it makes sense to explain that various relationships, such as modeling friends and acquaintances (normative reference) or comparing against each other (comparative reference), can have various effects on educational attitudes. Accordingly, the second objective of this study is to explore the effects of various networks on educational attitudes, represented

by the arrow b in Figure 1.

1.4. Research questions and objectives

As described above, at least two possibilities exist for the development of sociological research on educational attitudes. First, the educational attitudes we focus on should not be limited to those that seek educational and status attainment for children but should be expanded to include those that seek social contribution. Second, the scope of background factors to be examined should be expanded beyond parental status and resources to their networks. It is a very common sense view to assume that educational attitudes, whether aiming for status attainment or social contribution, are influenced not only by parental class status and resources, but also by their interactions with the people around them. Nevertheless, due in part to the lack of available data to examine this point [4], research examining the influence of networks on educational attitudes has not progressed much. Therefore, the purpose of this paper is to explore the background factors in the formation of parents' educational attitudes, using survey data that allows us to examine the influence of networks along with class background.

2. Methods

2.1. Data

To accomplish the above objectives, we used data from the "Survey on Parents' Social Relationships and Hopes," which interviewed parents of dependent children regarding their educational attitudes, social stratification, and networks. The survey participants were 1,200 women with children in elementary and junior high school residing in four prefectures in southern Kanto—Saitama, Chiba, Tokyo, Kanagawa. All participants were women, as they remain primarily responsible for raising children in modern Japanese society [5]. The survey was conducted by mail from September to October 2021, based on stratified two-stage random sampling from the Basic Resident Register. Responses were collected from 715 participants, resulting in a 60.4% response rate from the 1,184 individuals who could be surveyed [6]. However, the analysis was based on 617 cases where all the questions used had valid responses. Although the scope of the surveyed population was limited, the analysis results were expected to be meaningful because no similar surveys have been previously conducted and the survey achieved a satisfactory response rate for a mail survey. However, some studies on parenting networks point out that network type and their effects vary by region (Maeda 2008, Matsuda 2008), so this study must be understood as a case of women in the southern Kanto region.

2.2. Indicators of educational attitudes

Questions about parents' expectations for their children's future occupations and way of life are used to capture their attitudes toward children's status attainment and contribution to society. The following question was used: "What hopes do you have for your children's future?" Responses were rated on a four-point Likert scale (1 = disagree; 4 = agree), and the following five statements were used:

"First and foremost, I want my child to get a high-income job," "I want my child to obtain the highest level of education possible," "I want my child to get a prestigious job," "I want my child to get a job that helps other people," and "I want my child to become a person willing to help others." Of these, the first three represented attitudes prioritizing income, educational attainment, and status, respectively, whereas the latter two represented attitudes that prioritize socially contributing work and behavior. A principal component analysis using the responses to these questions resulted in two principal components with eigenvalues exceeding 1 being extracted, as shown in Table 1. The first principal component was termed "Status attainment orientation," and the second "Social contribution orientation"; their scores were used in the analysis.

Table 1. Principal component analysis of orientations in parenting attitudes

	Status attainment orientation	Social contribution orientation
High-income job	0.52	-0.24
High educational attainment	0.53	-0.24
Prestigious job	0.54	-0.17
Job that helps others	0.35	0.56
Person who helps others	0.20	0.74
Eigen value	2.21	1.21
Contribution rate (%)	44.2	24.2

How do people with these orientations in parenting attitude raise their children? A particularly significant potential problem is that excessive investment in education based on a status attainment orientation can hinder the development of healthy relationships between parents and their children. This concern has been raised since the 1970s as educational landscapes became increasingly competitive and were recognized as a social problem (Ninoseki 1971). Recently, sensational terms such as "education abuse" are being used. To evaluate parents in this respect, the survey included questions on how often the participants "ignored their child," "hit their hand or body to scold their child," and "said things that would hurt their child" in the past year. Responses were rated on a four-point Likert scale (1 = never; 4 = often). The principal component analysis using the responses to these questions extracted the first principal component with an eigenvalue of 1.8 and a contribution rate of 60.4%, which corresponded to a negative parenting attitude. In a subsequent analysis, this was reversed and used as an indicator of positive parenting attitude [7].

2.3. Methods of measuring personal networks

As mentioned above, previous research focused on trust and cooperation between network members, support from network members for mothers with small children, and comparison and

restrictions of behavior between members. Since there have already been many studies on support such as caring for children, and the importance of support for elementary and junior high school students declines compared to that of infants and toddlers, this study focuses on aspects of relationships other than support. Furthermore, as mentioned above, many previous studies dealt with size as a basic attribute of networks. Therefore, this study will also examine the size of networks with various functions.

Another aspect of networks that should be considered in their measurement is the types of ties. Wellman and Wortley (1990) noted that the types of support provided varied by types of ties, such as family, neighbors, friends, and colleagues. In this regard, it is expected that the functions of the networks will differ depending on the types of ties, even in aspects other than support. While this paper attempts to join "social class and education" research with network research, it is particularly important to clarify the impact of kinship relationships, especially in the context of research on multigenerational effects (e.g., Mare 2011). Therefore, this study focused on the size of networks as they relate to the various relationships with relatives.

The questionnaire measured the number of people in the following seven aspects among relatives who "often spoke with about parenting and education of children": "People I can cooperate with to accomplish work or chores," "People I can share happiness and sorrows with," "People I can trust," "People I can refer to as a model for parenting and ways of thinking," "People who compare their children's development and performance with my child's," "People who like to compare wealth and possessions of families," and "People who expect me to act like them." Respondents were asked to select the number of persons corresponding to each item using the following options: "None," "1–2," "3–4," and "5 or more." However, in real life, multiple items may apply to the same individual in many situations, suggesting that many overlaps exist between the seven networks. A correlation analysis revealed high correlation coefficients between two groups of items: (1) "People I can cooperate with," "People I can share emotions with," "People I can trust" and "People I can refer to as a model of parenting" and (2) "People who compare children's growth and performance," "People who like to compare family wealth," and "People who expect me to act like them" (Table 2). This indicated strong associations among the items contained within these two groups. Thus, we created a composite index by applying principal component analysis to each of these two groups of variables [8]. The first and second groups capture the size of cooperative and competitive networks, respectively. In the following analysis, these principal component scores are used as indicators of two types of network size.

2.4. Class indicators

Three items were used as indicators of the participants' class: participants' educational background (years of education), annual household income (logarithmic value) [9], and the number of books in home library [10]. However, the main point of interest for this study is not to compare the relative importance of various class factors, but to ask how class and networks are related to educational attitudes, respectively. Furthermore, as a certain degree of correlation was observed among the above class attributes, the analysis used a comprehensive class index synthesized by principal component analysis[11].

Table 2. Correlation matrix between network sizes

	1	2	3	4	5	6	7
1 People I can cooperate with	1.00						
2 People I can share emotions with	0.67 **	1.00					
3 People I can trust	0.64 **	0.83 **	1.00				
4 People I can refer to as a model	0.56 **	0.60 **	0.61 **	1.00			
5 People who compare children	0.03	0.04	0.02	0.08 *	1.00		
6 People who compare family wealth	0.00	-0.03	-0.05	0.07	0.54 **	1.00	
7 People who expect me to act like them	0.14 **	0.14 **	0.10 **	0.18 **	0.34 **	0.25 **	1.00

Note: *p <.05, **p <.01

2.5. Analysis methods

The purpose of this study is to explore and elucidate the structure of the previously unanalyzed relationships among the four variables of social stratification, cooperative networks, competitive networks and educational attitudes, and among the six variables if the relationships among the three educational attitude variables are also considered. Therefore, we performed analyses using a log-linear model, which is suitable for elucidating complex relationship structures. When creating a crosstabulation table with four or more dimensions, the number of categories for each variable should be kept as small as possible to guarantee the number of cases that can be assigned to each cell. All variables in this study are constructed as principal component scores and could be recategorized in a way that avoids skewed distributions. To present the results clearly, we converted them into binary variables that divided the distribution into two equal parts [12]. Of course, there is a possibility that weak associations between variables may be detected by reducing to binary values, but this has the advantage of allowing us to discard weak associations and focus on the clear association structure that can still be found. Thus, it was considered suitable for the purposes of this exploratory study.

3. Results of analysis

3.1. Results of basic aggregation

Before applying the log-linear model, the relationship between class and network indicators and each educational attitude was examined using the cross-tabulation results. Figure 2 summarizes the cross-tabulation results of the three educational attitude variables with class and two network indicators. This is a graphical representation of the difference between categories for each indicator (i.e., the value obtained by subtracting the lower ratio from the higher ratio) with respect to the strength of the tendency to take each educational attitude. For instance, the leftmost element shows that participants with higher

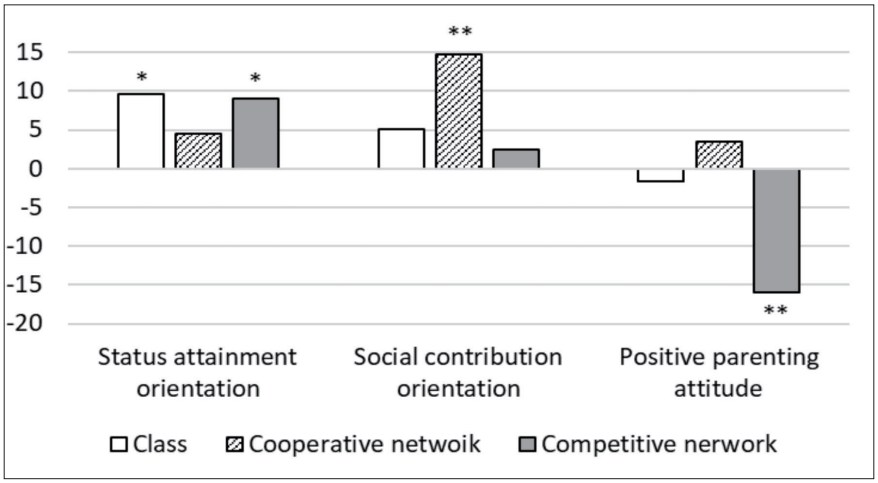

Figure 2. Educational attitudes by class and network sizes

Note: Values represent the difference in proportion between categories foreach variable. *p <.05, **p <.01

class attributes tended to have a stronger status attainment orientation by approximately 10 percentage points than those with lower class attributes. The results can be summarized as follows: (1) parents with higher class attributes had strong status attainment orientations; (2) parents with abundant cooperative networks had strong social contribution orientations; (3) parents with rich competitive networks had strong status attainment orientations, were less likely to adopt positive parenting attitudes, in other words, they were more likely to adopt negative parenting attitudes.

3.2. Results of the analysis with the log-linear model

A log-linear model was used to examine whether the above results would be observed when considering the relationships between each indicator variable. Furthermore, with four or more variables, the number of models that can be constructed is vast, making it nearly impossible to check all of them; therefore, the model must be set appropriately for the research purpose (Taromaru 2005). As this study aimed to clarify how the social class indicator and the two network indicators are related to educational attitudes, respectively, clarifying first the relationships between these three indicators was considered effective.

Table 3 shows the results of the log-linear model [13]. S represents class, N_1 cooperative networks, and N_2 competitive networks—the variables in [ ] are related to each other, whereas the others are independent. For instance, $[S][N_1][N_2]$ in Model 1 indicates that the three variables are mutually independent, and $[SN_1][N_2]$ in Model 2 indicates that class and cooperative networks are related, but both are independent from competitive networks.

The first criterion for selecting an appropriate model is its goodness of fit to the data, which is determined based on the likelihood ratio statistic (G^2), degrees of freedom, and significance level. As the number of parameters increases, the fit to the data improves; however, the model becomes more

complex, increasing the level of difficulty in interpreting it. Therefore, the parsimony of the model is considered the second criterion of selection. The index used to evaluate this is the Akaike Information Criterion (AIC), which adjusts the goodness of fit by the number of parameters, where smaller values indicate a better model [14]. As improving the fit by increasing the number of parameters and evaluating a parsimonious model with a high degree of freedom are contradictory, the models selected using the two selection criteria do not necessarily match. In the present case, however, Model 4, which assumes a relationship between two networks, is judged to be optimal based on both criteria, as shown in Table 3. In other words, both networks can be considered independent of class. The standardized residuals of individual cells in Model 4 exhibit no case where the absolute value exceeds 1.96; therefore, we concluded that a more complex model was not needed.

Table 3. Log-linear models of class and networks

	Model	G^2	df	*p*	AIC
1	$[S][N_1][N_2]$	7.0	4	.138	-1.0
2	$[SN_1][N_2]$	6.9	3	.076	0.9
3	$[SN_2][N_1]$	6.5	3	.088	0.5
4	$[S][N_1N_2]$	1.6	3	.670	-4.4

Note: S, Class; N_1, Cooperative networks; N_2, Competitive networks.

Next, from Table 4, a four-variable loglinear model that considers the association between the above three indicators and each educational attitude is considered. Model 1 assumed only the relationship between networks $[N_1N_2]$ based on the above results and indicated the independence of class and networks from educational attitudes [Y]. Using this model as a benchmark, we investigated which indicator related to each educational attitudes should be considered. Models 2 to 4 are models that take into account that each of the class and network indicators is associated with educational attitudes, respectively, and Models 5 and 6 consider the effect of each network indicator, assuming the relationship [SY] between class and educational attitudes.

For status attainment orientation, among Models 2 to 4, Model 2, which considered class, was optimal in data fit and AIC; however, the fit of Model 4, which considered competitive networks, was almost equally good. As expected, based on this, Model 6, which considered both relationships, was best. For social contribution orientation, Models 3 and 5, which considered the relationship with cooperative networks, had a good fit. For the purpose of comparing the effects of class and network, we adopt model 5, which includes [SY] [15]. For positive parenting attitudes, we can conclude that Models 4 and 6, which consider the association with the competitive network, fit the data, but let us again adopt Model 6, which considers the association with class. Furthermore, the standardized residuals for each adopted model had no cells with an absolute value exceeding 1.96; thus, a more complex model was not required.

The estimated results of the adopted models for the educational attitudes are schematized in Figure

Table 4. Log-linear models with educational attitudes

a.Status attainment-orientatation

	Model	G^2	df	*p*	AIC
1	$[N_1N_2][S][Y]$	14.2	10	.165	-5.8
2	$[N_1N_2][SY]$	8.5	9	.484	-9.5
3	$[N_1N_2][S][N_1Y]$	13.0	9	.165	-5.0
4	$[N_1N_2][S][N_2Y]$	9.2	9	.423	-8.8
5	$[N_1N_2][SY][N_1Y]$	7.3	8	.506	-8.7
6	$[N_1N_2][SY][N_2Y]$	3.5	8	.900	-12.5

b.Social contribution orientation

	Model	G^2	df	*p*	AIC
1	$[N_1N_2][S][Y]$	19.3	10	.036	-0.7
2	$[N_1N_2][SY]$	17.8	9	.038	-0.2
3	$[N_1N_2][S][N_1Y]$	5.9	9	.754	-12.1
4	$[N_1N_2][S][N_2Y]$	19.0	9	.025	1.0
5	$[N_1N_2][SY][N_1Y]$	4.3	8	.829	-11.7
6	$[N_1N_2][SY][N_2Y]$	17.4	8	.026	1.4

c.Positive parenting attitude

	Model	G^2	df	*p*	AIC
1	$[N_1N_2][S][Y]$	29.3	10	.001	9.3
2	$[N_1N_2][SY]$	29.1	9	.001	11.1
3	$[N_1N_2][S][N_1Y]$	28.5	9	.001	10.5
4	$[N_1N_2][S][N_2Y]$	13.3	9	.149	-4.7
5	$[N_1N_2][SY][N_1Y]$	28.4	8	.000	12.4
6	$[N_1N_2][SY][N_2Y]$	13.2	8	.107	-2.8

Note: S, Class; N_1, Cooperative networks; N_2, Competitive networks; Y, Educational attitudes.

3a–c. The numbers in the figure indicate the strength of the association between educational attitudes and each indicator, which is the log odds ratio obtained from the parameter estimates. From this, we can see that class and competitive network have the same level of effect on status attainment orientation, with high class having 1.47 (=e.3844) times stronger odds ratio than low class, and a large competitive network having 1.44 times stronger odds ratio than a small competitive network. In the same light, mothers with larger cooperative networks are 1.81 times more likely to have a strong social contribution orientation than those with smaller networks. Positive parenting attitudes show a strong negative association with competitive networks, indicating that competitive relationships with relatives are more likely to result in negative parenting attitudes (1.92 times more likely). In both the case of social contribution orientation and positive parenting attitude, we adopted a model that also included the relationship with class based on the results showed in table 4, but the estimates of the [SY] parameter were not significant in either model.

Finally, a six-dimensional crosstab that included all educational attitude variables was examined. First, we examined the relationship among the three educational attitude variables and found that we only need to consider the relationship between status attainment orientation and positive parenting attitudes $[Y_1Y_3]$, as shown in Table 5. Figure 3d schematizes the estimated results for the model $[N_1N_2][SY_1][N_2Y_1][N_1Y_2][N_2Y_3][Y_1Y_3]$, which added the item $[Y_1Y_3]$ to the results of the analysis for the three educational attitudes shown in Figure 3a–c [16]. As shown in Figure 3d, the relationships presented in Figure 3a–c were observed almost directly. Thus, we can conclude that the results of these analyses are

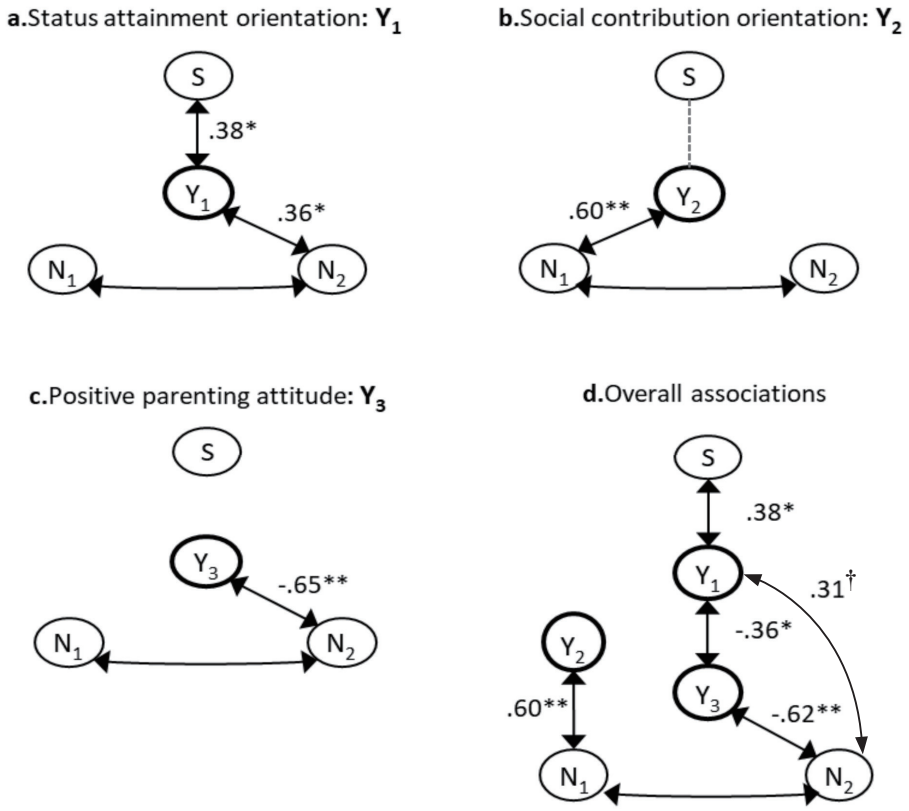

Figure 3. Effects of variables in a log-linear models

Note: S, Class; N1, Cooperative networks; N2, Competitive networks. Based on the adoption model presented in Table 4, values represent odds ratios. Solid arrows denote statistically significant associations, and dashed lines represent non-significant associations.

†p <.10, *p <.05, **p <.01

Table 5. Log-linear models of the indicators of educational attitudes

	Model	G^2	df	p	AIC
1	$[Y_1][Y_2][Y_3]$	9.4	4	.053	1.4
2	$[Y_1Y_2][Y_3]$	7.4	3	.061	1.4
3	$[Y_1Y_3][Y_2]$	3.2	3	.367	-2.8
4	$[Y_1][Y_2Y_3]$	8.9	3	.031	2.9

Note: Y_1, Status attainment orientation; Y_2, Social contribution orientation; Y_3, Positive parenting attitude.

robust and that the effects of class and network on the three educational attitudes operate independently of each other. The negative association between status attainment orientation and positive parenting attitudes also indicates that those with strong status attainment orientation are more likely to adopt

negative parenting attitudes.

4. Discussion

This study examined background factors of the development of educational attitudes using an exploratory analysis in the following two directions: (1) focusing not only on the status-attainment orientation that has been considered in the framework of " class and education" research, but also on the social contribution orientation that corresponds to the other purpose of "education"; (2) as the background of its formation, focusing not only on the parental class but also on the influence of the kinship network. The results of the analysis showed that (1) status attainment orientation, which has traditionally been the focus of attention, was associated with parents' social class and was also independently positively correlated with the size of the competitive network; (2) only the size of the cooperative network, not social class, was positively associated with parenting with a social contribution orientation, which has traditionally been overlooked; (3) positive parenting attitudes were negatively associated with the size of the competitive network, whereas social class had no direct association; (4) mothers with strong status attainment orientation were more likely to adopt negative parenting attitudes.

The most important of these findings is that those with a rich cooperative network are more likely to have a strong socially contributory parenting orientation, and that class is not relevant. As mentioned earlier, Mitani (2013, 2014) found that childhood interactions with neighborhood adults who help others are important for the socialization of prosocial behavior, while the class of the individual is less relevant. Similar to Mitani, the findings of this paper suggest that private and cooperative relationships may influence the formation of prosocial attitudes. Related to this, Bellah et al. (1985) argued that the experience of collaborating with others through social activities can nurture a sense of publicness, even if participation is initially motivated by personal interests. On the other hand, Fischer, who has been a leader in network research, describes the function of networks in mediating between macro social structures and micro individual behavior as follows: "It is through personal ties that society makes its mark on us, and vice versa. Parents teach children society's rules, and schoolmates teach them society's tacit standards for bending those rules. All through life, the facts, fictions, and arguments we hear from kin and friends are the ones that influence our actions most. Reciprocally, most people affect their society only through personal influences on those around them" (p. 3). Considering these ideas, the findings of this study indicate that it is worthwhile to study in more detail the possibility that personal social relationships develop prosociality—or, in the words of Fischer (1982) and Bellah et al. (1985), that they further develop a solidaristic society.

The second notable point is the finding of the statistically significant effect of competitive networks. Studies on parenting networks in family sociology and on social capital have primarily focused on positive social interactions. In this study, however, we found that competitive relationships, which have not been previously addressed, are related to educational attitudes, providing a new perspective for network research. Moreover, the finding that competitive relationships are linked with status attainment

orientations provides new insights for Japanese sociology of education, which has conventionally focused on the association between positive relationships (social capital) and academic skills (e.g., Shimizu 2014).

Furthermore, our findings suggest that the competitive nature of kinship relationships is one of the background factors that produce multigenerational effects which has drawn attention recently in the field of "class and education" research. In other words, competition and normative constraints on status attainment within a kinship may promote achievement-oriented educational attitudes, which in turn may lead to children's educational attainment. Assuming the validity of this reasoning, competitive kinship culture or habitus can be understood as important dynamics operating behind individualistic "success".

Reflecting on the discussion on parenting environments, the fact that competitive relationships with relatives often result in negative parenting attitudes is interesting. Watanabe (1994) pointed that modern parenting environments depend largely on how parents interact with child-rearing entities outside of the nuclear family. Watanabe aimed to assert that enriching effective child-rearing resources outside the nuclear family enables wholesome parenting. The significance of this study lies in the finding that the quality of relative relationship, which is one of these resources, can be one factor that determines the quality of parenting [17]; nevertheless, this may also apply to the quality of nonrelative relationships [18]. As such, attempts to develop child-rearing resources outside the nuclear family with the goal of enriching the parenting environment should not consist solely of increasing the number of relationships. Rather, the quality of the relationship between them and the child's parents should also be considered, taking into account that this relationship could be counterproductive if it is competitive [19].

As discussed above, this exploratory analysis, which used a novel research framework and data, revealed several interesting findings. However, this study had several limitations. First, the participants were women in the southern Kanto region, and the analysis was limited to basic cross-tabulation tables. The networks covered were restricted to relatives, and the methods and content of the measurements of them were limited. Moreover, theoretical exploration of the concept of educational attitudes was insufficient. Additionally, the analysis only demonstrated a relationship between variables and did not examine causal relationships. Thus, since this paper is strongly characterized as an exploratory attempt using a new research framework and data, the reliability of the findings needs to be confirmed again using similar survey data as in the present paper. Merton (1957) once argued that new empirical data can arouse specific theoretical interests, shift the theoretical focus, and contribute to the development of research in a field by generating further data in that field [20]. This study could contribute to the advancement of sociological research based on an analytical framework that considers the effects of both class and networks.

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Notes

1) However, Isa (2019) stated that her interest shifted through the process of her research to uncovering the reasons why class differences do not necessarily result in clear disparities in academic achievement.
2) Mitani (2014) used data from the 1995 SSM and 2010 SSP survey and found that people with higher levels of education, income, and status were more likely to become volunteers in 1995, whereas significant differences in these relationships, except level of education, disappeared in 2010.
3) Mitani (2013) acknowledged that her analysis of the socialization effects of school education was insufficient. Nevertheless, research on this topic is itself scarce, with only a few studies such as Yamada (2006), who focused on the socialization of mutually beneficial relationships through school education.
4) This lack of data indicates low interest in this research. This is mentioned again at the end of this paper.
5) According to the Statistics Bureau, Ministry of Internal Affairs and Communications (2022), in 2021, the average number of daily hours spent on parenting activities for children younger than six years among women was 3 hours and 54 minutes, whereas that among men was approximately one-fourth of this time (1 hour and 5 minutes). Despite this gender gap, studies on men are necessary. Aramaki (2023) examined men, although the analysis was limited by participants, including only individuals registered with a survey company.
6) The figures exclude eleven participants with an unknown address, one who was hospitalized, and four who did not meet the inclusion criteria for the survey. Cases not meeting inclusion criteria are those who reported that they did not have children in elementary or middle school. It was possible that there were sampling errors, or that the criteria were no longer met due to divorce or loss of the partner after registering. The survey details were described by Aramaki (2023).
7) It is known that the distribution of responses to questions directly asking about positive parenting attitudes, such as “Do you talk to your child often?” is highly skewed toward the positive side. Therefore, the responses to the questions on negative parenting attitudes were reversed and used as indicators of positive parenting attitudes.
8) For network size, responses indicating “None,” “1–2,” “3–4,” and “5 or more” were assigned values of 0, 1.5, 3.5, and 5.5, respectively. For each first principal component, the former had an eigenvalue of 3.0 and a contribution rate of 74.1%, and the latter had an eigenvalue of 1.8 and a contribution rate of 59.0%.
9) The total annual household income for the past year, including the family taxes, was measured on a 12-point scale ranging from “No income” to “15 million yen or more.” This was converted into an amount represented by the median value of each option and presented as a logarithm.
10) Family library size was measured on a five-point scale ranging from “10 or less books” to “201 or

more books." This was converted into an amount represented by the median value of each option.

11) The score of the first principal component (contribution rate 49.4%) with an eigenvalue of 1.5 was used.
12) All variables used in the analysis are approximately 50–50 distributed. However, a slight bias was present in positive parenting attitudes, with 45.2% in the lower group and 54.8% in the higher group.
13) Analyses were conducted using LEM; see Taromaru (2005) for details on the use of LEM.
14) Bayesian information criterion (BIC) is a similar indicator. The penalty imposed by AIC is $2p$, with p representing the number of parameters, whereas the penalty imposed by BIC is $log(N)p$. Thus, as N becomes larger than eight, i.e. in almost all survey data, BIC prefers parsimonious models more than AIC does. However, in the present analysis, model selection results using both methods were the same, except those presented in Table 4a; therefore, only the AIC is shown. In Table 4a, Model 1 is optimal for BIC; nonetheless, this judgment is unacceptable when G^2 is also considered.
15) A comparison of Models 3 and 5 shows that, as ΔG^2 is 1.6 and the difference in degrees of freedom between the two is 1, adding item [SY] to Model 3 does not result in a significant improvement.
16) The result of the likelihood ratio test (G^2=56.3, df=51, p=0.282) is satisfactory, although one cell has a standardized residual exceeding 1.96 due to the extremely large number of parameters of 64.
17) However, the kinship network indicator in this paper also includes husbands who are members of nuclear families.
18) Related to this, Aramaki (2023) noted a particularly high level of parenting anxiety when people are in competitive relationships with non-relative, particularly the parents of their children's friends.
19) Regarding the quality of relationships, Ishida's (2018) observation that weak ties are more effective in resolving isolation than strong ties that appear reliable is also suggestive.
20) Merton (1957) did not state that the "Re-focusing of Theoretic Interest" necessarily renders desirable results in research. Nonetheless, an increase in research that combines class and networks would be beneficial to sociological research.

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