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ORIGINAL ARTICLE

Inequalities in Demand and Access to Early Childhood Education in India

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Abstract

Global investment in early childhood education is a key policy to address social and economic disadvantage for children and families. Since 1975, India has one of the world's largest provisions for free, public early childhood education, under a program called the *Integrated Child Development Scheme*. However, almost half of the children in India still do not have access to early childhood education and the reasons behind this inequality are largely unidentified. This study investigates the nature of factors affecting demand and access to preschool and how parental decisions may be influenced by parents' education and other socio-economic factors, societal status, and awareness of the value of preschool attendance. The analyses draw on survey data collected from 1373 households in two districts in West Bengal with data gathered through extensive fieldwork in 2015. A key factor affecting preschool non-attendance was found to be lower levels of parent education. This explained the largest variation in the data. It is important to increase parental awareness on the value of preschool, as well as to increase the availability of early childhood education in rural, as well as in urban districts, in India.

Keywords Early childhood education · Preschool attendance · Inequality · Demand · Supply

Résumé

L'investissement mondial en éducation de la petite enfance constitue une politique clé pour répondre au désavantage social et économique des enfants et des familles. Les dispositions prises par l'Inde depuis 1975 sont parmi les plus importantes au monde en matière d'éducation publique, gratuite de la petite enfance, dans le cadre d'un programme intitulé *Integrated Child Development Scheme* (ICDS, Régime intégré du développement de l'enfant). Néanmoins, près de la moitié des enfants en Inde n'a toujours pas accès à l'éducation de la petite enfance et les raisons à l'origine de cette iné-

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galité sont loin d'être identifiées. Cette étude explore la nature des facteurs affectant la demande et l'accès à l'éducation préscolaire, ainsi que la façon dont les décisions parentales peuvent être influencées par l'éducation des parents et d'autres facteurs socioéconomiques, le statut sociétal et la conscience de la valeur de la fréquentation préscolaire. Les analyses s'appuient sur des données d'enquêtes collectées auprès de 1373 foyers de deux districts du Bengale occidental, avec des données rassemblées à l'occasion d'un vaste travail de terrain en 2015. Les niveaux plus faibles d'éducation des parents se sont révélés être un facteur clé affectant la non fréquentation préscolaire. Ceci explique la variation la plus grande dans les données. Il est important de renforcer la conscience parentale de la valeur de l'éducation préscolaire, ainsi que d'augmenter la disponibilité de l'éducation de la petite enfance dans les districts tant ruraux qu'urbains, en Inde.

Resumen

La inversión global en educación infantil temprana es una política importante para contrarrestar la desigualdad social y económica que sufren las familias y la población infantil. Desde 1975 India cuenta con una de las mayores ofertas de educación infantil temprana pública gratis bajo un programa denominado *Esquema de Desarrollo Integrado de la Infancia* (ICDS por su abreviatura en inglés). Sin embargo, casi la mitad de los niños en India aun no tienen acceso a educación infantil temprana y las razones de esta disparidad son en su mayor parte desconocidas. El presente estudio investiga la naturaleza de los factores que afectan la demanda y el acceso a la educación preescolar y la forma en que las decisiones de los padres pueden estar influenciadas por factores socio económicos y de educación de los padres, su clase social y falta de reconocimiento de la importancia de asistencia a clases. Los análisis se basaron en datos obtenidos por medio de una encuesta a 1.373 familias en dos distritos de Bengala Occidental mediante un intenso trabajo de campo en el año 2015. Se concluyó que los niveles bajos de educación de los padres constituyen un factor importante que afecta la asistencia a clases de niños de preescolar. Esto explicó la gran variedad en los datos. Es de vital importancia crear conciencia en los padres sobre la importancia de la educación preescolar, así como aumentar la oferta de educación infantil temprana en distritos rurales y urbanos de India.

Introduction

Early childhood education (ECE) is acknowledged as an important intervention to build human capital (Almond and Currie 2011; Cunha and Heckman, 2007; Heckman 2000). Children's experiences during their early years provide them with foundations for learning at school, as well as supporting the development of other social skills (Evans et al. 2000). Access to ECE is important for children living in developing countries because many children in these countries are more vulnerable to risks of poverty and disadvantage. Thus, "to break [the] cycle of poverty, violence, and disease, interventions must come early in life, the earlier the better" (UNICEF 2001; p. 43). There is limited research exploring issues related to access and participation

in ECE in India. This quantitative study focuses on reasons for inequality in access to ECE in India and investigates reasons behind lower levels of preschool attendance, in order to understand how differences in preschool attendance may be generated; as well as the nature of the factors influencing parental decisions about participation in preschool.

Scholars and policymakers unequivocally assert that investment in early childhood education is a powerful asset that offers lifetime returns for individuals and society (Yoshikawa et al. 2013; Irwin et al. 2007). It is widely acknowledged that children are central to global sustainable development, and the early years are crucial to establishing a strong foundation. There is consistent evidence showing the positive impact of early childhood education and care on the well-being of children and society. The effects of early disadvantage on children can be reduced by providing early education and care. Children who receive assistance in their early years perform better at later stages and achieve more success (Weiland and Yoshikawa 2013; Yoshikawa et al. 2013; DeCicca and Smith 2011; Dumas and Lefranc 2012, Gormley et al. 2008). As adults, they have higher employment and earnings, better health, and lower levels of welfare dependence and crime rates than those who don't have these early opportunities. Moreover, ECE can be considered as an effective instrument for improving development outcomes for children from disadvantaged families and from developing countries (Bakken et al. 2017; Engle et al. 2011; Dumas and Lefranc 2012; Waldfogel 2015). In countries with socio-economic inequalities, ECE initiatives may act to 'leveling the playing field' and bringing equality (UNICEF 2016, p. 41).

The child population in India, in the age group of 0–6 years, stands at 164.5 million which is about 13.5% of the total population of the country (Census of India 2011). Two major sets of provision for early childhood education are available in India: one in the public sector and one in the private sector. The public ECE provisions are usually called 'Anganwadi Centres' and are available under the program, *Integrated Child Development Scheme* (ICDS), which has been in operation since 1975. These provisions are provided at no cost to parents. There are also unregulated private provisions of ECE services which are mainly for-profit initiatives. Currently, there are about 1.3 million Anganwadi Centres across the country and about 36 million children are enrolled in these centres (Ministry of Women and Child Development, 2015). Despite significant progress in recent years, many children are still left behind because of lack of access to ECE and the ICDS has failed to provide universal coverage (Government of India 2011, p. 41). This is also evident from the data available from the World Bank (2015). Gross enrolment rates in pre-primary education in India are below other South Asian countries, as well as far below the global average (see Fig. 1). As a result, a considerable number of children in India still have no access to ECE.

Explaining Variation in Preschool Attendance: Economic Perspectives

To understand the variations in preschool attendance in ECE in India, it may be effective to explore how the interaction between the demand and the supply of

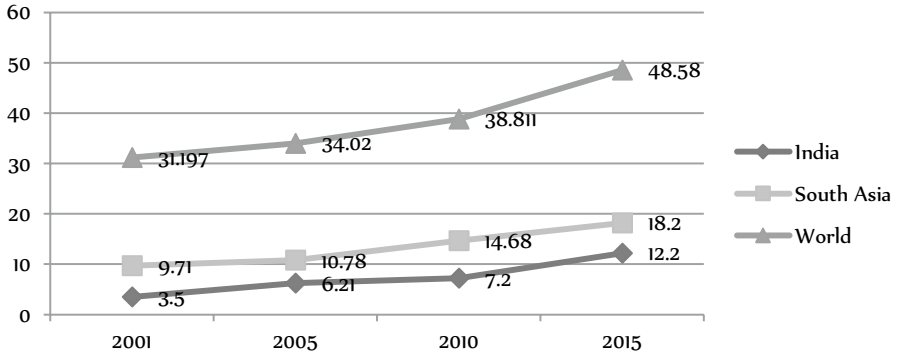

Fig. 1 Gross enrolment ratio for pre-primary education in India

preschool education affects attendance. On one hand, growth in services is effectively created by societal demand, for example, when parents seek access to preschool services for their children they create demand for preschool provisions. On the other hand, if the supply of preschools is increased and operates efficiently for families (e.g. access, cost, and quality) to match the growing demand, then preschool attendance is promoted. Furthermore, if access to ECE services improves success and engagement of children in school, by either demand or supply, this will lead to improved engagement by children in school and future socio-economic opportunities for children and their families.

Variations in demand for preschool may be attributed to the socio-economic status of parents. Variations in educational decisions may occur because parents behave rationally in an economic sense and their decisions are a function of their position in the socially stratified system in which they live. Meyers et al. (2009) have described parental child care decisions as accommodations to various economic and socio-emotional aspects of family life, such as social and cultural expectations; available information; and financial, social, and other resources available in families. Choice of a preschool may reflect personal goals and values, as well as a conventional cost–benefit analysis (Gibson and Weisner 2002). Therefore, educational decisions are not only a reflection of parents' rationality to make decisions but are also influenced by their access to resources, societal status, and their values and sentiments.

There may also be significant variation in preschool attendance because of insufficient supply. Parents, regardless of their motivation for their children to participate in preschool, are unable to access a preschool in their local area. Regional variations in preschool availability across India have been found, and children from relatively less-developed regions have a lower level of probability of being able to attend preschools (Government of India 2011; Gangbar et al. 2014). If lack of availability causes the inequalities in preschool attendance, then this is of utmost importance to address so that all young children in the country can have equal opportunity to access preschool and realise their potential.

In the Indian context, influences on preschool attendance are likely to be economic and social factors, as well as regional variations through differences in

socio-economic status. In India, caste and social class remain intertwined and castes remain an aspect of social stratification that designates a hierarchy of social roles (Sankaran et al. 2017). Additionally, public preschools (Anganwadi Centres) are free, so there is no financial burden on parents. If parents do wish to send their children to preschool and there is close access to public preschool from their residence, then income or economic status should not be an obstacle.

Socio-demographic Factors Influencing Preschool Attendance

For parents, the benefit of ECE is potentially twofold: First, early education programs can enhance children's development, particularly among disadvantaged children and build human capital for the family (Becker 1964; Heckman 2000; Blau and Currie 2006). Parents may want better education for their children because they want their children to have a better future so that early education is an initial step for parents to build the capabilities of their children for a better educational future (Checchi 2006, p. 15). Second, ECE provisions can make it feasible for both parents, or a sole parent in a single parent family, to be employed. This role has become increasingly important in an era of welfare reform, in which able-bodied mothers are expected to work regardless of the age of their children.

While, in principle, all parents could demand an ECE program for their children, the actual picture is rather different. For any educational options to be positively considered by parents, it needs to be appropriate for families to access given their level of resources, as well as to align with parents' beliefs and values and the needs and desires of other family members (Vesely 2013). Differences in the socio-economic background are produced through variations in parents' level of education, type of occupation, family income, assets owned, and the nature of the family of origin (e.g. caste, religion, and cultural beliefs). These differences in background may impact on the educational opportunities for children (Seginer and Vermulst 2002). More highly educated parents are likely to have more resources for their children which will lead to positive associations between family socio-economic background and parental educational aspirations (Jonsson and Erikson 2000; Schober and Spiess 2013; Spiess et al. 2008). Moreover, children's demographic, health, and cultural background, and parental motivation may also significantly predict variation in preschool attendance (Delprato et al. 2016; Jackson et al. 2011; Tocu 2014).

The Current Study

The research explores influencing factors on parental motivation and choices to access preschool in India for their children and how such demand influences preschool attendance. Source of differences in preschool attendance in India is explored through two interrelated research questions:

1. What are the reasons that parents report for sending their children to preschool?
2. What social and economic factors of families influence parental decisions for sending their children to attend preschool?

The analyses in this study control for different child and household characteristics, locational variations, and possible supply-side variations to examine the influences of various factors that affect inequalities in preschool attendance. There is a probability that parents' decisions about sending (or not sending) their children to preschool has an association with the socio-economic status of the family. Factors such as parents' education, income, and employment status may play an important role in preschool decisions. The ethnic background of the household could also be expected to influence decisions made about preschool. Variation in preschool attendance could also be influenced by family and child demographics. There may be regional variations in preschool attendance, both in terms of rural–urban habitation and by different residential districts because of the level of availability of preschools in different regions.

Methodology

These analyses draw on primary survey data collected from 1373 households in two districts in West Bengal in India, through extensive fieldwork conducted in 2015. The data are made available from a larger cross-sectional research project conducted by the Bamberg Graduate School of Social Sciences (BAGSS) at the University of Bamberg in Germany, with support from the German Research Foundation (DFG). The primary objective of the larger project was to explore the possible effects of ECE provisions on children's well-being in India.

Sampling and Recruitment of Families

In this project, there was a purposive sampling of households and a multi-stage sampling procedure. The choice of state (West Bengal) was pragmatic, and the sampling method was driven by convenience to identify an appropriate sample, as well as pragmatic reasons of possible efficiency in costs and time for data collection. The area-based sampling consisted of two districts covering 169 villages and 75 municipal wards which are electoral districts of a corporation/municipal council or town board. The overall population size across the two districts was approximately 2,000,000 people. The districts were chosen in such a way so as to ensure maximum variation in household socio-economic status by per capita income and adult literacy rate. One district, Howrah, was randomly chosen from the top tier of socio-economic status ($n=473$ households) with a 50% rural population ($n=238$). The second district, Murshidabad, was randomly chosen from the bottom tier of socio-economic status and oversampled ($n=900$ households) with 88% rural population ($n=788$).

The unit of analysis was households who had children currently enrolled in first grade in primary schools. Children enrolled in first grade would include children with, and without, ECE experience. This focus optimised the likelihood that parents of children in first grade would recall their recent motives related to their ECE decisions. Recency in the recall period reduces non-response in survey items and

increases data quality. Table 1 shows the distribution of the total sample based on the two districts sampled, as well as the rural–urban proportions in the sample. The sample in both districts was selected in proportion to the rural–urban habitation within these two districts.

Data Collection and Ethical Considerations

Participation in the project was completely voluntary on the part of the households, and each of the households was included in the study after providing written consent. Considering the available resources and time frame, it was initially projected to include a sample size of approximately 1400 households. From the 1400 families initially identified, 1373 families gave final agreement to participate in the project and were included in the final sample. Individual identity of the participants and their families were kept anonymous, and information provided was kept confidential. It was used only for the purposes of the research and to provide policy advice.

The household survey was conducted by a personal visit to each of the 1373 households, and paper-based questionnaires were completed. Field workers were recruited from each of the study districts to conduct the household survey. Additional personnel was involved in electronically transforming the data at the district level to the main dataset. The entire fieldwork was jointly administered by a representative from BAGSS in collaboration with the Government of West Bengal. During the visit to the households, fathers were usually absent because of their occupation status and mothers were generally at home. Among the respondents, 84% were mothers, 11% were fathers, and 5% were other relatives with whom the child lived.

Interviews were conducted in households using the *Household Survey Questionnaire*, which consisted of three parts: (1) child information, (2) household information, and (3) information on ECE. Even though participants were free to choose whether to answer (or refuse) any of the questions asked, there were very limited non-responses to items and mainly due to the permanent absence of either parent in a family due to death or another reason. The survey had both quantitative and qualitative components, and when parents were allowed to express their opinions, an open discussion took place in which many parents conveyed their feelings and emotions related to their children and their upbringing. These discussions were helpful in understanding and explaining the sentiments associated with parental preschool decisions.

Table 1 Sampling distribution across districts

Name of district	Total	Rural	Urban	Attended preschool	
	Sample size (households)			Yes	No
Howrah	473 (34%)	235 (50%)	238 (50%)	443 (94%)	30 (6%)
Murshidabad	900 (66%)	788 (88%)	112 (12%)	463 (51%)	437 (49%)
Total	1373	1023	350	906 (66%)	467 (34%)

Approach to the Analyses

Descriptive analyses of the quantitative data are reported using means, count data, and percentages. Qualitative data were also categorised for reasons that parents reported for sending (or not sending) their children to preschool. Differences in qualitative response categories are reported by parental levels of education and districts sampled.

Multivariate analyses were conducted to estimate the effects of family and household socio-economic status, possible influences on supply-side variations, as well as regional variations in preschool attendance using Probit estimation (Wooldridge 2009, pp. 575–587). A Probit model is used when the outcome variable takes only two values. This modelling approach is commonly used in economic analyses using a binary classification for the outcome variable in these analyses (1 = attended preschool; 0 = did not attend preschool).

The purpose of the Probit modelling was to identify independent variables that predicted preschool attendance. This approach enabled the estimation of the probability that households with particular characteristics could be classified by these predicted probabilities, while taking account of the other variables included in the model. The binary response variable for preschool attendance is represented by P_i (preschool attendance) in the following equation:

$$P_i = \propto + \beta_1 H_i + \beta_2 C_i + \beta_3 D_i + \epsilon_i \quad (1)$$

- H_i *is a vector representing components of socio-economic status* Drawing from the broader extant literature and understanding of the Indian context, socio-economic status consists of three main components: economic status, educational status, and social status of parents. Monthly household income (log of household income); housing type (concrete, semi-concrete, non-concrete) and house ownership (owned, rented) were also included as indicators of the economic status of households. The highest education level achieved by either parent in each household was included as the indicator of family educational status (classified as primary school, secondary school, higher secondary school or above). The social status indicators were parental employment status (regular, casual, or no job); religion (Hindu, Islam and other); and caste origin (higher caste, lower caste).
- C_i *represents a vector of several control variables related to family and child characteristics* sex of the focus child in first grade; number of family members, and number of siblings in the family. A variable related to district sampled (Howrah, Murshidabad) and geographic location (urban residence, rural residence) were also included.
- D_i *has also been included in the model to incorporate the supply-side variation in the model* An exogenous variable, distance, was included to represent approximate distance from each household to the nearest preschool (within 500 m, more than 500 m) to account for ease of preschool access (e.g. by government supply of the service).

Results

As indicated in Table 1, 34% of the children ($n=467$) in the overall sample did not attend preschool, although this percentage differed across the two districts sampled (6% of children in the district in which families had higher socio-economic status and 49% of children in the district with lower socio-economic families tier who lived predominately in rural areas). This was a large discrepancy across districts, even though attendance in preschool in the public preschools is free so that attendance at an Anganwadi Centre is not a financial burden to parents. Other descriptive differences in socio-economic and household variables are described in "Appendix", in relation to household income and preschool attendance, as well preschool attendance and as other household characteristics.

Parents were also asked the reasons behind their decisions about their child's attendance at preschool. Parents who sent their children to preschool provided a list of reasons (Table 2), which could be classified into four broad categories: value of early education, school readiness, material benefits, and other reasons. The primary reasons for sending children to preschool were for early education and school readiness. The reasons cited by parents for not sending children to preschool were also

Table 2 Reasons provided by parents for their preschool decisions

	Categories derived from reasons given	Examples of parent reasons
Parental reasons for sending their child to preschool	Value of early education (69%)	Education is important for child's future Child learns something early
	School readiness (20%)	Child will get used to going to school Child gets ready for primary school Child get more socialisation opportunities
	Material benefits (9%)	Receives free meal and accessories No cost for schooling
	Other reasons (2%)	Mother gets time for other siblings Parents get time for housework Parents get time for paid work
Parental reasons for not sending their child to preschool	Motivational factors (59%)	Do not consider preschool important Child not interested in preschool Had no ideas about preschool No preschool was available at that time Preschools were far away (inaccessible)
	Supply-side factors (30%)	Timing was inconvenient Cost was high Quality of schooling was very poor Preschool service was irregular Want to raise children ourselves
	Cultural factors (11%)	Child should spend time with other siblings Child is too young for school Nobody to take the child to the centre
	Other reasons (2%)	No time due to household work Neighbours do not send their children

Percentages are rounded, so percentage may add to more than 100%

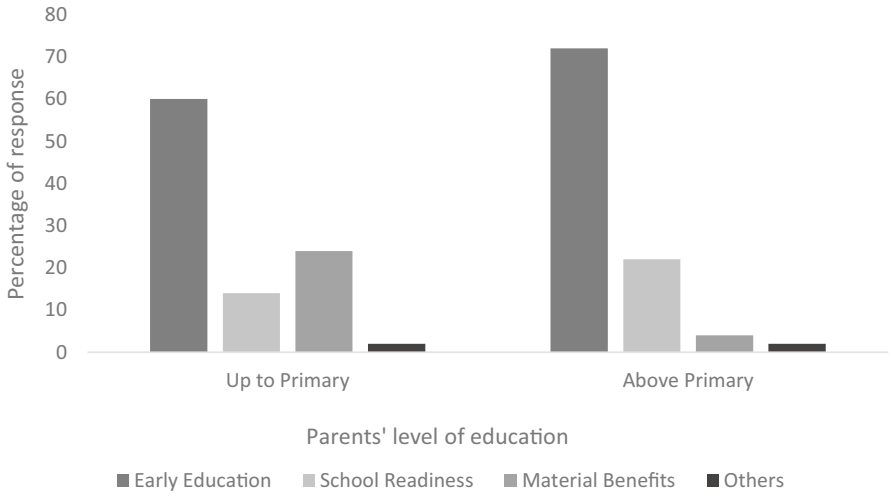

Fig. 2 Parental education and reasons for preschool attendance

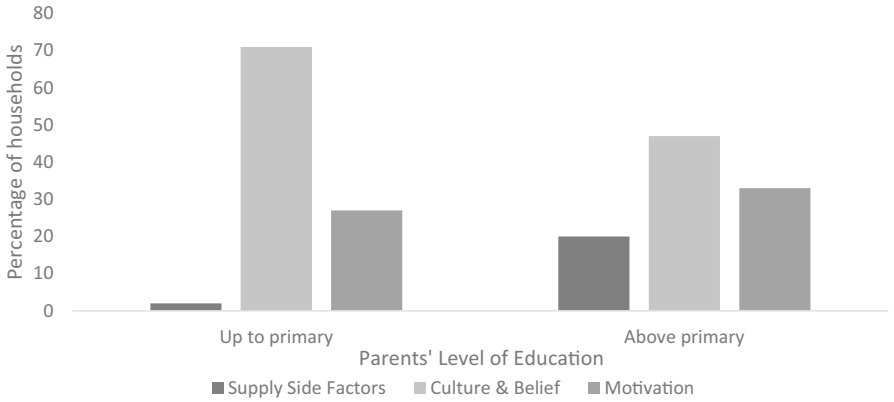

Fig. 3 Parents education and reasons for preschool non-attendance

divided into four categories (see Table 2). These responses were classified as: motivational factors, supply-side factors, cultural factors, and other reasons.

Parents with primary school education and education above primary school indicated that both early education and school readiness were important reasons for sending their child to preschool (Fig. 2). Material benefits were also identified by parents with only primary school education. These reasons for preschool attendance were similar across the two geographical districts included in the sample.

The reason for non-attendance at preschool and its relation to parental education are indicated in Fig. 3. Cultural reasons were the strongest factor for parents with lower levels of education (primary school education), while for parents with more than primary school education then supply-side factors, cultural factors and

motivational factors were all identified. Figure 4 illustrates that motivational factors were more frequently given as reasons for preschool non-attendance in both the geographical districts sampled, although supply-side factors were also commonly indicated for non-attendance at preschool for rural families in Murshidabad.

Multivariate Model for Predictors of Preschool Attendance

The significant predictors for children's preschool attendance, which were identified by the Probit analyses, are presented in Table 3. The coefficients generated in these analyses indicated that higher levels of parental education (i.e. secondary school or above) made it more likely that, on average, that children would attend preschool compared to children whose parents had only completed primary education. Father's employment status in a regular job (not a casual job) made it more likely that a child would attend preschool, while mothers' employment did not make a significant impact on preschool attendance. In a predominantly patriarchal society like India, male members of the family are the primary wage earners and father's employment status may matter in household decisions. Religious affiliation also impacted on preschool attendance. Children from Hindu families were less likely to attend preschool than children from Islamic and other minority religions. Households from 'Islam and other' religions had a lower level of income and more children, compared to households from the Hindu religion. Independent sample t-tests found that the average monthly income of households for families who were from Islam and other religions ($n = 304$) was INR (Indian rupee) 879.00 lower than Hindu families, and the average number of children was 0.54 higher than in Hindu households ($n = 1066$). These statistically significant differences ($p < 0.001$) in income and number of children by religion may cause the variation in preschool attendance by children from different religious background.

Fig. 4 District variation in the reasons for preschool non-attendance

Table 3 Predictors of preschool attendance from the probit analysis

Base outcome: preschool non-attendance	Coefficient (SE)
Household income (log of income)	0.058 (0.030)
House type (Reference: Non-concrete)	
Concrete	0.043 (0.034)
Semi-concrete	0.023 (0.028)
House ownership (Reference: Rented)	
Owned house	0.048 (0.045)
Highest education of parents (Reference: Primary)	
Secondary school	**0.063*** (0.028)
Secondary school and above	**0.197***** (0.044)
Fathers' employment status (Reference: Casual Job)	
Regular job	**0.066*** (0.027)
Mothers' employment status (Reference: Casual Job)	
Regular job	−0.093 (0.058)
Religious origin (Reference: Hindu)	
Islam and others	**0.172***** (0.028)
Caste origin (Reference: General Caste)	
Lower caste	−0.025 (0.027)
District of family residence (Reference: Howrah)	
Murshidabad	**−0.348***** (0.028)
Nearest preschool (Reference: within 500 m)	
More than 500 m	**−0.058*** (0.023)
Sample size	1355
Adjusted R^2	0.237

N.B. Coefficients represent marginal effects after Probit regression. Only coefficients of major interest are presented in this table

*$p<0.05$; **$p<0.01$; ***$p<0.001$. Significant coefficients are highlighted in bold

Family size and per capita expenditure on children also seemed to have impacted on family decisions. A Chi-square test of independence examined the associations between religion and type of preschool attended and also found a significant effect, χ^2 (1, $N=1373$) = 15.37, $p<0.001$. A larger number of children from Islam and other religions (84%) attended public preschools compared to children whose families were Hindu (72%). One could argue that higher preschool attendance by children from families who were 'Islam and other religions' may simply due to material benefits. Alternatively, it could also be due to the higher motivation of these parents for their children to attend preschool. This finding warrants further investigation.

Children from Murshidabad district were significantly less likely to attend preschool compared to children from Howrah district. District variation in preschool attendance, even after controlling for parents' education and occupation, suggested that factors, other than the socio-economic status of parents, affect preschool attendance. For example, lower parental motivation in Murshidabad district, as reported

in the qualitative data of parent-reported reasons for attendance, and a higher number of parents citing supply-side reasons for not sending their children to preschool could explain this finding. There was also a negative association between the distance of preschool from the residence and preschool attendance. Those households who may not have had a free Anganwadi preschool within their local neighbourhood were less likely to send their children to preschool.

Discussion

Experience from around the world shows that the access to ECE is still an issue in more than half of low- and lower-middle-income countries and these countries are not on track to ensure at least one year of quality pre-primary education for every child by 2030, as set by the *Sustainable Development Goals* (United Nations 2017). A considerable number of children from low-income families, ethnic minorities (including immigrants), and those with disabilities or special needs continue to have lower levels of participation in ECE (Bertram et al. 2016; Economist Intelligence Unit (EIU), 2012; OECD 2012; Pascal and Bertram 2012).

Enrolment in preschool education in India is considerably lower than in many other countries, and thus, many children in India do not get the initial support to build a strong learning foundation for the development of cognitive and socio-emotional skills in the early years. Parents are key decision-makers for children's preschool attendance, so it is crucial to understand influences on parent decision-making. It was confirmed by the empirical analysis in this study that inequalities in preschool attendance in India were related parents' socio-economic status and supply-side reasons. Parental education was a particularly important influence to preschool attendance. Many parents who did not send their children to any preschool were not aware of the positive effects of early education for their children, and this knowledge was influenced by parental level of education. Research studies (Hewett et al. 2014; Jonsson and Erikson 2000) have shown that educated parents have higher aspirations for their children's education and are likely to possess greater knowledge about the educational options available for their children. Educated parents can influence the educational performance of their children in many ways. These include 'choosing' early education in a timely way, and motivating children to continue through school by supports such as practical help with school work. Empirical evidence from this study shows that children with fathers with stable employment are more likely to attend preschool. Scholars argue that parents with a stable income are often more focused on their child's future, whereas parents with income insecurity may have to spend more time to secure adequate income for their families and have less time to consider child's future education in order to meet more immediate family needs (Vesely 2013; Han 2004).

From this research, it could be inferred that variations in the socio-economic and educational status of parents result in differential motivations towards ECE. Regional disparities in preschool attendance may also occur if districts have relatively lower adult literacy rates. Regional inequality is likely due to both demand-side and supply-side factors. Given lower levels of literacy and of income, parents in

rural districts may be less motivated towards ECE compared to parents living in districts with greater urban development. Therefore, regional variations in supply are likely to shape differences in preschool attendance. A limitation of this study is that it does not explicitly take into account all supply-side characteristics, other than distance to a preschool. It is beyond the scope of this research to disentangle the extent to which parent's socio-economic status is related to supply-side variations and fully explain the regional variation in preschool attendance. The associations between parent's socio-economic status and their motivations for enrolling their children in preschool in the Indian context could be explored in more depth in future research.

It is evident that ECE has a long-lasting effect on children's well-being, and this benefit is especially strong for children from the socio-economically disadvantaged backgrounds (Bakken et al. 2017; Hazarika and Viren 2013; Jung and Hasan 2014). Therefore, it is important to ensure that the existing ECE programmes are reaching the disadvantaged population (Nonoyama-Tarumi and Ota 2010). Equalising access to early education programmes could close the socio-economic status gaps in school readiness and later educational and occupational outcomes. An inclusive approach is essential given the recognised benefits for preschool education for all children.

Conclusions

Unequal opportunity to preschool in India is multi-layered, and affected by demand-side factors and supply-side factors, but can mainly be attributed to the variations in the socio-economic status of parents. While the importance of ECE for children may not be explicitly recognised by many parents in India, especially with lower levels of education, it is important that awareness and messages about the importance of ECE for children's learning and future schooling reach all parents. Stronger policy measures can provide more equitable access to preschool for all children. Universal access to preschool education should be a priority for advocacy efforts to support early education policies of all governments. Equitable access to preschools in all regions across India and for all socio-economic groups is a critical issue for policy development.

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Appendix

Household Characteristics and Preschool Attendance

Household income of families and preschool attendance

Variable name	Value	Attended preschool Mean (SD)	Did not attend preschool Mean (SD)	*P* value (*t*-statistic)
Gross monthly household income	Indian rupee (INR)	6802.6 (4726.0)	4809.2 (2592.5)	0.001***

Household characteristics and differences by preschool attendance. *Source*: Author's calculations based on primary data

Variable	Values	Attended preschool (%)	Did not attend preschool (%)	Pearson χ^2
House type (type of housing)	1 = concrete	421 (78.84%)	113 (21.16%)	χ^2 (2) = 86.63***
	2 = semi-concrete	270 (65.69%)	141 (34.31%)	
	3 = non-concrete	215 (50.23%)	213 (49.77%)	
House ownership	1 = owned	852 (66.77%)	424 (33.23%)	χ^2 (1) = 4.94*
	2 = rented	54 (55.67%)	43 (44.33%)	
Parent education (highest education by either parent)	1 = up to primary	242 (50.21%)	240 (49.79%)	χ^2 (2) = 126.25***
	2 = up to secondary	446 (68.20%)	208 (31.80%)	
	3 = higher secondary or above	218 (91.98%)	19 (8.02%)	
Father's job status	1 = regular	654 (77.40%)	191 (22.60%)	χ^2 (1) = 126.83***
	2 = casual or no job	244 (47.56%)	269 (52.44%)	
Mother's job status	1 = regular	49 (71.01%)	20 (28.99%)	χ^2 (1) = 0.79
	2 = casual or no job	856 (65.80%)	445 (34.20%)	
Household religion	1 = Hindu	683 (64.07%)	383 (35.93%)	χ^2 (1) = 7.79**
	2 = Islam and others	223 (72.64%)	84 (27.36%)	
Household caste	1 = Lower caste	220 (55.00%)	180 (45.00%)	χi^2 (1) = 30.35***
	2 = General caste	686 (70.50%)	287 (29.50%)	

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

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