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How do School Functionaries perceive Equity in Secondary Schools? Measurement through a self-constructed PESE Scale

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This empirical paper is based on the measurement of perceptions of school functionaries in secondary education in Uttar Pradesh. The perceptions were measured on a self-constructed scale titled *Perceptions on Equity in Secondary Education* (PESE), bifurcated into two, *Positive Measures for Equity* (PMES) and *Negative Measures for Equity* (NMES) for purposes of analyses. For this research, school functionaries constituted 98 school principals and 196 school teachers of secondary schools across two districts in Uttar Pradesh. The purpose of doing this analysis was to understand how school functionaries perceived different dimensions of equity, that were based on systemic policies, learner attributes, teaching-learning and classroom processes. T-test and correlations were used as statistical techniques to find out differences amongst groups of school functionaries on how they perceived equity as well as to find any associations between demographic and professional details of school functionaries and their perceptions on equity. The findings revealed that school functionaries found a few dimensions of PMES as critical for enhancing equity in secondary education in Uttar Pradesh. Their perceptions were also significant on NMES and its dimensions. These findings were useful in drawing implications for improving the practices of school functionaries towards an equitable secondary education experience for students...

Keywords: Equity, Perceptions, Scale, Secondary Education, Uttar Pradesh

In the Indian context, it has often been argued that large-scale educational reform programmes did not factor in interventions at the school level, rather on macro level initiatives for improving access and participation (Batra 2017, Biswal 2011). On the other hand, micro level interventions, such as addressing pedagogical needs of different learners, creating inclusion in classrooms and ensuring flexibility in achievement systems, have been regarded as essential conditions if access has to be made meaningful for students' participation. These strategies at school level need to be implemented parallel and supplementary to macro level strategies of demand generation and ensuring retention to achieve universalization of participation (GoI 2014, Biswal 2011). In a different context, Batra (2017) also discussed how educational policies had limited success in alleviating conditions of poverty, as they did not focus on improving the classroom processes and educational experiences of marginalized children. The educational system needed to address what she termed as conditions of 'capability deprivation' that arose out of perceptions of school functionaries. These perceptions looked at children of the poor with 'stigmatised identities' and treated them as 'non-epistemic entities', reflective of an inequitable belief system. Hence, along with provisions, educators and policy makers were required to engage with the underlying processes of education that often did not favour the poor. Thus, there has been a consistent call for policies that create equitable opportunities and fair treatments in classrooms and schools for all children irrespective of background factors. This empirical paper delves deeper into this aspect of educational policy and aims to measure the perceptions of school functionaries of secondary schools in the state of Uttar Pradesh through the construct of equity (Malik 2015). This research is part of doctoral thesis, covering two broad objectives: to develop a scale based on psychometric principles that could measure the construct of equity and to measure the perceptions of school

functionaries on equity in secondary education. The results of development and validation of self-constructed scale, *Perceptions on Equity in Secondary Education* (PESE) were published separately (Malik 2017). The exploration of the second objective is covered in this paper, with the formulation of the central question, "How do school functionaries perceive equity in secondary schools?" Within this larger question, two specific questions were asked:

1. How do different groups of school functionaries perceive equity in secondary education?
2. What is the relationship between demographic and professional details of school functionaries and their perceptions on equity in secondary education?

Review of Literature

Equity as a philosophical concept is a much deliberated idea, revolving around notions of *'fairness'* and *'justice'*. It has been understood as different from the principle of equality where equity refers to fairness and equality refers to sameness or absence of discrimination (Secada 1989). Equity is also described in terms of its absence or presence of educational inequities/disparities. Further, this concept has been explained and operationalized through various research studies, with emphasis on institutional/school related practices (Skrla and Scheurich 2003, 2004a, 2004 b, Grant 1989, Boaler 2002, Lotan 2006, Arvin 2009). Equity in school and classroom related practices refer to a variety of treatments accorded to students by teachers that are part of the latter's belief systems, *perceptions*, and actions. Perception is a psychological phenomenon which refers "to the way in which we interpret messages from our senses to provide some order and meaning to our environment… Since different people can view the same situation in disparate ways, the interpretation of the meaning of a particular event determines how these individuals will react to it. Thus, perception can be thought of as an intervening variable that influences behavior " (Bowditch, Buono and Stewart 2007).

Researchers have found that inequitable perceptions of school functionaries border on 'deficit' views regarding students especially those who are low-achievers and attribute their academic achievement to their family and cultural background; associate causes of failure with the students rather than tracing these causes to the school context; and expect lower academic performance from students who are unable to cope with the academic requirements of the curriculum (Skrla and Scheurich 2003, 2004a, 2004b). Batra (2017) studied perceptions of student teachers who were trained in state run District Institute for Education and Training (DIETs) (Group 1) and compared them with perceptions of those educated through a four year integrated B.El. Ed. programme of undergraduate colleges (Group 2). She observed that Group 1 teachers approached children through the lens of behaviouristic psychology, whereas Group 2 teachers approached education as embed in the socio-cultural and economic milieu of children. Group 1 teachers consistently viewed children as "lacking in something", while Group 2 teachers based their classroom processes on need based appropriate pedagogic techniques through engagement with subject knowledge and taught within the framework of socio-constructivism and critical pedagogy.

In a study of elementary schools in Delhi, Namrata (2012) examined teachers' prejudices and discriminatory classroom practices against marginalized children. The findings revealed that children who were considered as performing well by teachers were usually seated in the front rows, ran errands for the teacher and were often called upon to answer questions in the class. Whereas, children who were described by the teacher as 'dull', poor in studies and less likely to complete even elementary education, were seated at the back and were rarely asked questions within the classroom. The study concluded that such kind of practices eventually led the children to dislike the school and drop out. While studying the treatment of *dalit* communities in the Indian educational process, Nambissan (1996) argued that besides poor infrastructural facilities, students belonging to these communities also faced lack of pedagogic supports to acquire competencies. In addition, the treatment by teachers towards these students was indifferent and discouraging, further deteriorating the

learning experiences of the disadvantaged. A study in 12 government primary schools in Bihar, Maharashtra and Kerala investigated learner-centred beliefs and pedagogies of teachers (Brinkmann 2015). Teachers with low learner-centred beliefs considered some students as not capable of learning, particularly those from low socio-economic or caste backgrounds. They were of the opinion that students' backgrounds negatively affected learning and were also less capable of learning, either because poor children were less intelligent, had bad habits or adverse home environments (ibid.).

Creating equitable classrooms by addressing diverse learning needs and at the same time focusing on all the students can be a daunting task for teachers. Lotan (2006) argued that all students in a classroom must access a rigorous and an academically challenging curriculum. Furthermore, teachers had to make conditions conducive for students to have positive interactions with teachers and their peers in order for them to have "balanced" and "equal-status" participation inside the classrooms. On the contrary, if students were labeled as 'weak' and 'bright' it led to the neglect of the weak students by teachers and also resulted in associating poor levels of performance with academically weaker students as also negatively affecting their perceived status vis-à-vis the high achievers. Low expectations form low achievers led to a lower participation rate of such students. Teachers needed to assign tasks that required high competence to low-status students which would help in raising their self-confidence and weaken the relation between status (that could be social/cultural/economic) and participation. The study also proposed creating opportunities for group activities that were equity promoting in mixed ability classrooms. Discrimination and stereotyping towards disadvantaged students have been characterized as inequitable behavior by teachers and peers, leading to marginalization of students (Harvey and Klein 1989). In a traditional model, teachers have stereotyped students as 'weak' and 'bright', as ones who do not pay attention in class or do not want to learn as against those who do their work on time. Boaler (2002) found that traditional methods of teaching mathematics were perceived as more suitable for working class disadvantaged students. While working on the equity principle, his research concluded that reform-oriented curriculum for mathematics, which required higher order cognitive thinking was found to be understandable by all students, even by those who were considered as non-performers. Instances where teachers were found to be biased against black students while assigning high cognitive tasks were also documented by Grant (1989).

Skrla and Scheurich (2003, 2004a, 2004b) placed 'equity' and 'excellence' together, not as mutually exclusive paradigms but as capable of co-existing and reinforcing each other's aim. One of the defining link between the two concepts is the belief that *all* children are equally capable of learning. This principle was derived on the basis of extensive researches carried out in some of the schools of the best-performing districts in USA, where it was found that the drive for accountability had inadvertently improved the performance of students, even those who were considered as academically weak. This established the fact that all children were capable of learning despite 'deficit' views of principals and teachers towards students and their cultural and family background. The performance of all students also helped principals and teachers overturn their belief that the cause of failure of the student was inherent and had no connection with school factors.

In the educational literature on equity, another theme that is well researched is the relationship between gender and stereotypes. The dynamics of gender and stereotypes regarding the discipline of mathematics stemmed from the belief that it was a superior discipline reserved for boys and less utilitarian for girls. Kaely (1995) stated that cultural norms of societies gave rise to existing disparities in participation of girls in mathematics. This was a case with many developed countries too, where the enrolment of girls became less as soon as the subject became optional. Though many believed that gender differences in participation and achievement in mathematics had biological roots, researchers pointed these differences to an interaction of socio-cultural factors, expectations of the society, and personal belief systems (Kaiser and Rogers

1995). Morrow and Morrow (1995) cited many reasons for this disconnect with mathematics for girls, such as the absence of active listening by the teacher, inability of teachers to link concepts with everyday life experiences, the absence of a classroom environment that instilled belief in girl students and the absence of a space to make mistakes and take risks without the fear of answering in right or wrong. While describing the evolution of certain subjects, Harris (1995) found out that embroidery for instance, became entrenched as a craft solely for women by the nineteenth century, whereas, earlier in medieval times it was practiced as an art by both men and women. The subject when became a part of the curriculum in English education system, differentiated the abilities of girls from boys, where girls practiced embroidery and calculation work was reserved for boys.

Factors such as professional development of teachers and provision of qualified and trained teachers to all students as measures for enhancing equity are considered as an important parameter for providing equitable learning opportunities to children. Studies have put forward the view that teacher education programmes need to be reformed by teaching the teachers to improve classroom interactions through equitable practices and bridging gaps in achievement among students. They have called for sensitizing teachers to individual learning differences and enhancing their beliefs about students' abilities to perform (Skrla and Scheurich 2003, 2004b; Darling-Hammond 2007). It has also been argued that teacher's mastery of knowledge and teaching is the most important factor for student's achievement. Further, her qualifications, knowledge, skill and understanding can make more difference for student learning than any other single factor. Access to high quality teachers, thus is one of the key factors at the school level that can bring equitable participation and influence student achievement (Lindsey 2012).

This review of researches brought forward a number dimensions that highlighted perceptions and beliefs in favour of equity and those that stand against equity in school system as well as classroom processes. Based on this, a scale following psychometric principles was developed and validated (Malik 2017 & 2015). This paper presents the findings of the perceptions of school functionaries of secondary education on this self-constructed scale, abbreviated as PESE scale.

Method

Research Design

This research was part of the doctoral thesis on "A Study of Equity in Access and Participation in Secondary Education in Uttar Pradesh". The research design of the thesis was a multi-level exploratory study on issues related to equity in access and participation at secondary education (Class IX-X). Development of a self-constructed scale and measurement of perceptions on the construct of equity formed one of the objectives of this thesis (Malik 2015).

Sampling technique

For this research, the total number of secondary schools in two districts of Uttar Pradesh was taken as the population (2010-11). The sampling technique used for selection of sample was stratified proportionate random sampling (Malik 2015).

Sample

There were a total of 655 secondary schools in both the districts combined of which 15% was taken as the sample from each of the districts (2010-11). The sample secondary schools included 53 schools in district Meerut and 45 schools in district Bareilly.1 A total of 98 secondary schools formed the sample. The respondents included both principals and teachers from these schools. In addition to 98 secondary school principals, two teachers from each school were also taken as respondents. Hence the total number of respondents were 98 secondary school principals and 196 secondary school teachers (N=294). In this analysis, the total respondents are referred to as the school functionaries (Table 1). Table 2 and Table 3 give the demographic and professional details of principals and teachers respectively. For analysis, principals and teachers belonging to scheduled caste and other backward classes were clubbed as the non-general category.

Table 1 Total Respondents (N=294)

Respondents	Number
Bareilly	135
Meerut	159
Principals	98
Teachers	196
Female	126
Male	168
Non-general Category	108
General category	186

Tools

For the purpose of this research, a 5-point Likert self-constructed scale titled 'Perceptions on Equity in Secondary Education' (PESE) was used. The analysis was conducted on its two sub-sets the Positive Measures for Equity Sub-scale (PMES) and Negative Measures for Equity Sub-scale (NMES) [Appendix 1- Table 1&2].

Proedure

For the exploratory questions, t-test and correlations were used as statistical techniques. The results have been presented separately for t-test and correlations. For t-tests, the analysis was run between variables of total respondents (sex, category, subject code- principals and teachers and districts -Bareilly and Meerut), principals (sex, category), teachers (sex, category, professional qualification) and scores of PMES and NMES along with their dimensions. Correlations were computed between variables of total respondents (age), principals (age, years of experience as principal, annual income), teachers (age, educational qualification, years of experience as a teacher, years of experience in IX-X and annual income) and scores of PMES and NMES along with their dimensions. Only significant results have been reported.

Results

I. t-test

A. Total Respondents

PMES

1. The means of Male (M=7.76, n=168) and Female (M=7.29, n=126) school functionaries, which included both principals and teachers, were found to differ significantly for *support for scheduled caste students* at secondary level (t=-2.41, p=0.017). Male school functionaries perceived that scheduled caste students required incentives to continue their education and needed the support of remedial classes to perform better as compared to females (see Table 4 and Table 5).

Table 2 Demographic and Professional details of Principals (n=98)

Sex	Category	Years of Experience as Principal	Annual Income
Female (n=38)	Non-General (n = 31)	Up to 10 (n=60)	Less than Rs. 2 lakh (n=44)
Male (n=60)	General (n=67)	11-30 (n=22)	Rs. 2 to 4 lakh (n=23)
		21-30 (n=14)	More than Rs. 4 lakh (n=31)
		>30 (n=2)	

Table 3 Demographic and Professional details of Teachers (n=196)

Sex	No.	Cate-gory	No.	Educational Qualification	No.	Professional Qualification	No.	Years of Experience	No.	Years of Experience in Class IX-X	No.	Annual Income (Rs.)	No.
Female	88	Non-General	77	Graduate	20	Trained	156	Upto 15	137	Upto 15	153	less than equal to 2,00,000	117
Male	108	General	119	Post Graduate	165	Untrained	40	16-30	51	16-30	38	2,00,001-4,00,000	50
				M.Phil/and Ph.D.	11			More than 30	8	More than 30	5	more than 4,00,000	29

2. The means of Non-general (M=7.89, n=108) and General school functionaries (M=7.36, n=186) were found to differ significantly for *support for scheduled caste students* at secondary level (t=2.731, p=0.007) (see Table 4 and Table 5). Non-general category school functionaries, who included scheduled caste, scheduled tribe and other backward classes principals and teachers, had higher perceptions on support required by scheduled caste students as a positive measure to enhance equity in the system, as compared to their general category counterparts.

NMES

The means of Teachers (M=7.15, n=196) and Principals (M=6.59, n=98) were found to differ significantly on *learner's inabilities* (t=-2.574, p= 0.01), which was a dimension of the negative measures of equity sub-scale. (Table 8 and Table 9 in Appendix 1). Between principals and teachers, it were the teachers who had higher perceptions on the inabilities of learners to perform well in school, and believed that performance in studies depended only on the intellectual ability of a student (see Table 4 and Table 5).

Table 5 Mean and Standard Deviation for Total Sample (N=294)

	Sex	n	Mean	Standard Deviation
PMES_ F7	Female	126	7.29	1.747
	Male	168	7.76	1.584
PMES_ F7	Non-general	108	7.89	1.524
	General	186	7.36	1.722
NMES_ F3	Principal	98	6.59	1.758
	Teacher	196	7.15	1.74

B. Principals

PMES

The means of Non- general category (M=17.68, n=31) and General category (M=17.67, n=67) Principals were found to differ significantly on *academic expectations* (t=-2.207, p=0.030), a dimension of the positive measures for equity sub-scale (see Table 6 and Table 7). Principals

Table 4 t-test for Total Sample (N=294)

	Sex		Category		Subject Code (Principals and Teachers)	
	t	Sig.	T	Sig.	t	Sig.
PMES	-1.503	0.134	1.43	0.154	-0.670	0.503
F1	-1.401	0.162	1.337	0.182	-1.020	0.308
F2	0.536	0.593	-0.934	0.351	-0.916	0.361
F3	0.327	0.744	0.845	0.399	-1.206	0.229
F4	-0.507	0.612	1.117	0.265	-1.726	0.085
F5	-1.35	0.178	-0.389	0.698	1.102	0.272
F6	-0.29	0.772	0.914	0.361	1.316	0.189
F7	-2.41	0.017*	2.731	.007*	0.459	0.647
F8	-1.563	0.119	1.29	0.198	-0.556	0.579
NMES	-0.879	0.38	1.185	0.237	-0.894	0.372
F1	-0.897	0.37	2.169	0.346	-0.140	0.889
F2	-0.023	0.981	0.244	0.807	0.103	0.918
F3	-0.019	0.985	0.826	0.41	-2.574	0.011*
F4	-1.176	0.24	-0.674	0.501	-0.590	0.556

belonging to non-general category believed that academic expectations from students led to better academic performance. This dimension also laid emphasis on higher expectations of better relationship among teachers and between teacher and students, as much as on academic knowledge of subjects by teachers.

NMES

The means of Female (M=6.37, n=38) and Male (M=6.73, n=60) Principals was found to differ significantly on *learner's inabilities* (t=2.404, p=0.018), which was a dimension for the negative measures for equity sub-scale (see Table 6 and Table 7).

The means of non-general category (M=10.13, n=31) and general category (M=9.72, n=67) Principals were found to be significantly different on *environmental barriers* (t=-2.410, p=0.019). (Table 10 and Table 11 in Appendix 1). Principals of non-general category had higher perceptions on this dimension indicating beliefs in negative conception of equity, such as perceiving separate sections for weaker students that could help in addressing their learning needs, or the presence of a competitive environment in school which could create a feeling of failure among weak students (see Table 6 and Table 7).

Table 6 t-test for Principals (n=98)

	Sex		Category	
	t	Sig.	t	Sig.
PMES	0.272	0.786	-.792	0.430
F1	1.284	0.202	-1.148	0.254
F2	-1.527	0.130	-.415	0.679
F3	-.047	0.963	.013	0.989
F4	.019	0.985	-2.207	0.030*
F5	-.514	0.608	.954	0.343
F6	0.007	0.995	.388	0.699
F7	0.161	0.872	-.342	0.733
F8	1.642	0.104	-.345	0.731
NMES	1.335	0.185	-1.908	0.059
F1	1.403	0.164	-1.972	0.052
F2	-.749	0.456	.438	0.663
F3	2.404	0.018*	-1.001	0.319
F4	.941	0.370	-2.410	0.019*

Table 7 Mean and Standard Deviation for Principals (n=98)

		n	Mean	Std. Deviation
PMES_F4	Non-general	31	17.68	1.326
	General	67	17.67	1.44
NMES_F4	Non-general	31	10.13	2.172
	General	67	9.72	1.945
NMES_F3	Female	38	6.37	1.852
	Male	60	6.73	1.696

C. Teachers

PMES

The means of female (M= 7.61, n=88) and male (M=8.13, n=108) teachers were found to differ significantly on teacher's role (t=-2.0048, p=0.042), a dimension of the positive measures for equity sub-scale. Male teachers had higher perceptions on teacher's mastery of the subject and positive teacher behaviour in classroom for improving students' participation, in comparison to female teachers (Table 8 and Table 9).

The means of female (M=7.17, n=88) and male (M=7.81, n=108) teachers were found to differ significantly on support for scheduled caste students (t=-2.521, p=0.013) (Table 8 and Table 9).

The means of non-general category (M=7.99, n=77) and general category (M=7.23, n=119) teachers were found to differ significantly on support for scheduled caste students (t=3.040, p=0.003) (Table 12 and Table 13 in Appendix 1). Male and non-general category of teachers believed that provisions for scheduled caste students, such as incentives and remedial classes were required as a measure for enhancing equity in participation (Table 8 and Table 9).

NMES

No significant t-tests were observed between teacher variables and NMES (Table 8 and Table 9).

Table 8 t-test for Teachers (n=196)

	Sex		Category	
	T	Sig.	t	Sig.
PMES	-1.322	0.188	1.457	0.147
F1	-.954	0.326	0.660	0.510
F2	0 .926	0.356	-.135	0.893
F3	0.298	0.766	0.923	0.357
F4	0.578	0.564	1.135	0.258
F5	-2.048	.042*	-.094	0.925
F6	-.469	0.640	1.156	0.249
F7	-2.521	0.013*	3.040	0.003*
F8	-1.699	0.091	0.419	0.676
NMES	0.183	0.855	0.447	0.655
F1	0.260	0.795	1.654	0.100
F2	-.267	0.789	0.696	0.487
F3	0.492	0.623	-.620	0.536
F4	0.032	0.974	-1.352	0.180

Table 9 Mean and Standard Deviation for Teachers

		n	Mean	Std. Deviation
PMES_F5	Female	88	7.61	1.738
	Male	108	8.13	1.767
PMES_F7	Female	88	7.17	1.864
	Male	108	7.81	1.708
PMES_F7	Non-General	77	7.99	1.594
	Ggeneral	119	7.23	1.875

II. Correlations

A. Total Respondents

PMES

The Age of the total respondents was found to be positively correlated with teacher's role (r=0.117) at 0.05 significance level (Table 10). With higher age, school functionaries placed importance on teacher's mastery of subject and behaviour of teachers in classroom in order to improve student's interest and participation in classroom activities.

NMES

The age of the total respondents was found to be positively correlated with differential treatment (r=0.151) at 0.01 significance level (Table 10). School functionaries who were older held negative perceptions too, that teacher's expectations varied with learning abilities of students and students with low learning ability showed low levels of performance.

B. Principals

PMES

The Age of the Principals was found to be negatively correlated with teachers' competence (r=-0.240) at 0.05 significance level (Table 10). With an increase in age, the principals were found to have less faith in teaching experience and professional training of teachers as factors for increasing teachers' competence.

The Annual Income of Principals (An_Inc) was found to be negatively correlated with teacher's competence (r=-0.263) at 0.01 significance level (Table 10). The above finding revealed that principals having higher annual income did not believe that teaching experience and professional training were essential factors for teachers' competence.

NMES

The Annual Income of Principals was found to be negatively correlated with negative measures of equity sub-scale (r =-0.214), and its two dimensions, learner's inabilities (r=-0.203) at 0.05 significance level and with socio-economic determinants (r=-0.318) at 0.01 significance level (Table 10). Principals with higher annual incomes subscribed less to beliefs that were negative to the conception of equity, as compared to principals with lower annual incomes. Principals with low annual incomes perceived high on NMES as well as on socio-economic determinants and learner's inabilities. These dimensions had items such as student's achievement was determined by his/her family and social background and disinterest in studies could be attributed to the social and economic background of students. They also held beliefs that only few students were capable of performing in school or the performance of students depended only on the intellectual ability of students.

Table 10 Correlations for Total Respondents, Principals and Teachers

Total Sample	PMES	F1	F2	F3	F4	F5	F6	F7	F8	NMES	F1	F2	F3	F4
Age	-0.01	-0.113	0.034	-0.071	-0.069	.117*	0.035	0.091	-0.025	0.113	0.069	.151**	-0.002	0.087
Principals														
Age	-0.072	-0.089	0.159	-0.146	-0.135	0.125	-0.129	0.054	-.240*	-0.005	-0.107	0.087	-0.061	0.147
An_Inc	-0.077	-0.047	0.093	-0.102	-0.04	0.049	-0.18	0.072	-.263**	-.214*	-.318**	0.129	-.203*	-0.105
Teachers														
Age	0.039	-0.101	0.02	-0.006	0.009	0.092	0.048	0.1	0.082	.216**	.161*	.191**	0.125	0.099
Years_ Exp	0.02	-0.082	-0.014	-0.055	0.007	0.062	0.097	0.075	0.053	.184*	0.133	.175*	0.069	0.104

C. Teachers

PMES

No significant correlations were observed between teacher variables and PMES

NMES

The Age of the teachers was found to be positively correlated with *negative measures of equity* (r=0.216, p=0.01) and its two dimensions, *socio-economic determinants* (r=0.161, p=0.05) and *differential treatment (r=0.191, p=0.01) (Table 14 in Appendix 1)*. The teaching experience of teachers (Years_Exp) was found to be positively correlated with *negative measures for equity* (r=0.184) and *differential treatment* (r=0.175) at 0.05 significance level (Table 10).

Discussion

The results for Positive Measures for Equity Sub-scale (PMES) brought to the forefront *support for scheduled caste students, academic expectations, teacher's role and teachers' competence* as significant dimensions for enhancing equity in secondary education in Uttar Pradesh. Males and non-general categories of school functionaries and of teachers perceived scheduled caste students to be at a disadvantage and considered support to these students as a measure for bringing equity in the system. Prior studies have argued for scholarships, freeships and other incentives to be provided to students belonging to various target groups in order to overcome direct and indirect costs of education at both elementary and secondary level, ensuring their participation (Panchmukhi 2005, Padmanabhan 1985). Public subsidies such as these are provided by state governments for educational upliftment of students belonging to low socio-economic background and girls, and are a regular feature of policies initiated in Uttar Pradesh (Malik 2015). Principals belonging to non-general category registered higher perceptions on the dimension of *academic expectations*. This dimension measured the positive notion of equity through items such as higher academic expectations lead to better performance of students and students tend to perform better if they believe their academic achievement depends on their efforts. These principles have been highlighted by researches emphasizing on equitable instructional practices that favour inclusion of students belonging to different backgrounds (Batra 2017, Brinkmann 2015, Skrla and Scheurich 2003, 2004b). On the contrary it is found that perceptions of teachers regarding low achievers lead them to expect lower standards of performance from them, resulting in even further marginalization of low-achievers. Male respondents amongst teachers perceived the dimension of *teacher's role* as an important measure of enhancing equity in the system. This dimension included items such as student's interest in a subject is dependent on the teacher's mastery of the subject and that students' passivity in classroom activities is dependent on their teacher's behavior. Teacher's mastery of knowledge and teaching is regarded as an important factor for ensuring equitable participation and enhancing student's achievement (Lindsey 2012). Further studies such as those conducted by Lotan (2006) have argued for creating positive interactions between

teachers and students and students with their peers so as to have equal-status participation inside classrooms.

Principals who were older and had higher annual incomes did not perceive teaching experience and professional training as factors for *teachers' competence*. On the contrary, principals who were younger and had low annual incomes perceived this dimension as significant for making secondary education more equitable. This aspect has been highlighted in various national policies and researches on equity (NCFTE 2009, De Luca et.al.2009, Darling-Hammond 2007). The National Curriculum for Teacher Education clearly states in its vision, "Given the problems of inadequate quality in most secondary schools due to poor infrastructure and insufficient and poorly equipped teachers, the need for addressing the professional education of secondary teachers acquires great importance." (NCFTE 2009). Principals, who were younger perceived teachers' competence as critical to improving equity, perhaps there was a felt need for professional development amongst their community as they were newly inducted in the system.

The results for Negative Measures for Equity Sub-scale (NMES) revealed significant perceptions of school functionaries on the total score of NMES and its dimensions- *learner's inabilities, environmental barriers, differential treatment and socio-economic determinants.* Principals with higher annual income subscribed less to perceptions on NMES, whereas principals with lower annual incomes perceived 'deficit' views regarding students. On the other hand, teachers who were older and had more of teaching experience had higher perceptions on the total score of NMES, that is, they seemed to hold negative equity perceptions on all its dimensions. These perceptions emerged from 'deficit' views regarding students as documented in researches (Batra 2017, Brinkmann 2015).

Teachers and male respondents in the total sample had higher perceptions on *learner's inabilities*. This was also the case with principals having higher annual incomes. This dimension measured negative perceptions on equity through items such as only few students are capable of performing well and performance in studies depends only on intellectual abilities of students. Instead, studies have emphasized that not a few but all children are capable of learning and performing well in studies (Skrla and Scheurich 2003, 2004a, 2004b). Principals belonging to non-general category had higher perceptions on another dimension of NMES, that is, *environmental barriers*. This dimension had an item which stated- separate sections for weak students can help in addressing their learning needs more effectively. Once again, this could be a reflection of principals' felt need to put additional efforts for weaker students so that they could perform equal to others. Brinkmann (2015) found that teachers with low learner-centred beliefs preferred classrooms with children of similar ages, backgrounds, abilities and learning pace but that was not the case with teachers having high learner-centred beliefs who emphasized that students were different and had unique talents and strengths. Thus, separating weak students on the basis of their abilities could be debilitating for their development and hence, this dimension qualified as a negative measure of equity. Principals with higher annual income had lower perceptions on *socio-economic determinants*, that is, they did not perceive low academic achievement of students as an indication of their social background or the fact that disinterest in studies could be attributed to students' social background. This was, however, not the case with teachers who were older. Their perceptions were higher on these negative equity beliefs. These perceptions resonated with the findings of Brinkmann (2015) who found that teachers with low learner-centred beliefs attributed students' levels of learning on their negative home environments and social backgrounds. The age of total sample of school functionaries and the age and total experience of teachers were positively correlated with another dimension of NMES – *differential treatment.* Older school functionaries and teachers had higher perceptions on this negative measure of equity which had items such as teachers assign difficult subject related tasks to bright students and teachers' expectations vary with the learning abilities of the students. Such negative conceptions of equity were also found by studies

conducted by Grant (1989) who highlighted the discriminatory practices of teachers by assigning high cognitive tasks to middle class students and Boaler (2002) who discussed that teachers perceived traditional methods of teaching mathematics as more suitable to the learning needs of students belonging to working class disadvantaged students.

Conclusion

This research measured the perceptions of school functionaries, i.e. school principals and teachers in the context of secondary education in a state in India, at a time when issues related to equity have acquired a centre stage in national policy discourse (GoI 2014, NCFTE 2009). Further, the perceptions gathered on both positive and negative measures of equity highlighted significant dimensions on both the sub-scales that could be taken as indicative of what school functionaries think on key aspects of equity in secondary education. The purpose of doing this analysis was to understand how school functionaries perceived different dimensions of equity, that were based on systemic policies, learner attributes, teaching-learning and classroom processes. This could help in drawing implications for improving the practices of school functionaries towards an equitable secondary education experience for students. Amongst positive measures of equity for improving access and participation, the dimensions that emerged significant were support for scheduled caste students, academic expectations, teacher's role and teachers' competence. Though there are target-specific strategies in operation for scheduled caste students in Uttar Pradesh, school functionaries perceived this as critical for enhancing equity in secondary education. There was also in addition a felt need for other positive measures such as academic expectations, teacher's role and teachers' competence to make the system more equitable. The need for teacher's role and teachers' competence was also substantiated by the fact that there were significant results for total scores on negative measures for equity and its dimensions – *learner's inabilities, environmental barriers, socio-economic determinants and differential treatment*. These negative perceptions held by school functionaries reflected 'deficit' views regarding students and stood against equity in secondary education in the state. Hence, an important recommendation emerging from these findings is the need for inclusion of equity related concepts and practices in various induction and in-service capacity building programmes for school functionaries, be it principals or teachers. These programmes must aim at reversing inequitable perceptions among principals and teachers, and help in building consensus around the fact that all children are capable of learning. Such opportunities for school functionaries can be used to bring about a shift in their perspective from negative perceptions regarding students' background factors and their learning attributes to a more equitable mindset. This argument has been clearly placed as "unless Indian teacher education programmes begin to address not only skills but also the deeper cultural beliefs in which teacher's practice is grounded, they will not be successful in transforming teaching practices" (Brinkmann 2015).

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Appendix 1

Table 1 Factor Loadings and Items of PMES

Factor Loading	S. No.	Factors and Items
		Factor 1: Provisions for Resources and Incentives (n=6)
0.599	16	Weak students require incentives to perform better
0.528	23	Incentives are required for weak students who work hard
0.680	25	Adequate incentives may be provided to most of the students for achieving their best
0.461	26	Students who belong to low income families require incentives irrespective of their caste status
0.512	28	The government must put maximum resources to increase the performance of high achievers
0.632	31	The government must put maximum resources to increase the performance of low achievers
		Factor 2: Separate Secondary Schools for Girls (n=2)
0.864	5	Separate schools for girls are necessary for their high enrolment at the secondary level
0.881	9	Separate schools for girls are necessary to ensure their participation at the secondary level
		Factor 3: Individual Differences (n=3)
0.685	38	All students irrespective of their abilities are an asset to the school
0.676	47	Learning pace of students will be different despite providing equal opportunities to learn
0.544	50	To become more effective in teaching, teachers need to constantly upgrade their skills
		Factor 4: Academic Expectations (n=4)
0.686	15	School expects all children to perform well
0.318	17	A teacher's relationship with other teachers and students is as important as her/his knowledge of the subject
0.418	35	Students tend to perform better if they believe their academic achievement depends on their efforts
0.557	49	All parents expect their children to perform well in school
		Factor 5: Teacher's Role (n=2)
0.836	33	Student's interest in a subject is dependent on the teacher's mastery of the subject
0.729	34	Student's passivity in classroom activities is dependent on their teacher's behavior

		Factor 6: Setting higher expectations (n=3)
0.298	12	A teacher is efficient when she/he is able to take the academic responsibility of each of her/his student
0.673	18	A teacher can improve a student's performance if she/he sets higher expectations from the student
0.605	39	Hard work generally determines the performance of a student
		Factor 7: Support for Scheduled Caste students (n=2)
0.642	8	Incentives are necessary for scheduled caste students to continue their Education
0.308	22	Remedial classes can ensure that scheduled caste students perform better
		Factor 8: Teacher's Competence (n=2)
0.753	43	A teacher's competence depends on her/his teaching experience
0.272	55	A teacher's competence is dependent on her/his professional training

Table 2 Factor Loadings and Items of NMES

Factor Loading	S. No.	Factors and Items
		Factor 1: Socio-economic determinants (n=5)
0.500	7	A student's achievement in school is largely determined by his/her family background
0.575	10	Low academic achievement of the students is an indication of their social background
0.622	19	Disinterest in studies can be attributed to the social background of the Students
0.659	51	Disinterest in studies can be attributed to the economic background of the students
0.471	53	Students who create disorderliness in schools are indisciplined by nature
		Factor 2: Differential Treatment (n=4)
0.368	11	Teachers assign difficult subject related tasks to bright students
0.714	13	Some parents are not able to contribute towards the academic achievement of their children
0.591	41	Teachers' expectations vary with the learning abilities of the students
0.590	46	Students having low learning ability generally show low levels of performance
		Factor 3: Learner's Inabilities (n=2)
0.556	6	Generally in a school only few students are capable of performing well
0.730	48	Performance in studies depends only on the intellectual ability of the students
		Factor 4: Environmental barriers (n=3)
0.502	24	Separate sections for weak students can help in addressing their learning needs more effectively
0.717	30	A competitive atmosphere in school creates feeling of failure amongst weak students
0.566	45	Participation of students in classroom activities is largely determined by their environment at home