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Inequality in financial attainment: an exclusion indicator to social development

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Abstract: This paper focuses on inter-district inequality in financial attainment by normalising with a reference district. It suggests that the financial achievement of households is more of exclusion and geographic discrimination. The exclusion of rural hamlets from the mainstream is a socio-economic reality that has worsened with geography, socio-demographic or economic barriers. The most banked district of Kangra in Himachal Pradesh is compared against all the 30 districts of Odisha. The tests of dimension wise correlation with components of HDI show significant relations. The FEI (exclusion index) strongly correlates with HDI than the traditional CRISILX-2013. It confirms the test of discrimination. The degree of exclusivity could be lowered with higher branch network capacity.

Keywords: index; exclusion; HDI; BFSI.

JEL codes: D63, J14, O18.

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1 Introduction

The narratives on financial inclusion fall broadly into the coverage of individuals or households or on the cross-country variations in financial inclusion across the globe. There are few studies to highlight the extent of financial exclusion in rural India, specifically areas that had been away from the catchment radar of formal banking firms. Bank branches were opened in large numbers, and a sizeable share of the population could not be brought under the fold of the banking system. Discrimination against villages is visible in the differential concentration and inequality. There are pockets of

habitation where the inclusion is much lower in urban capital cities. Of late, World Bank (2014) mentions the existence of involuntary exclusion of individuals or households due to insufficient income, low creditworthiness and similar imperfections. The involuntary element is a barrier to financial capabilities that requires policy and research initiatives. Leyshon and Thrift (1996) defined financial exclusion as preventing certain social groups and individuals from gaining access to the formal financial system. Previous works attempted to construct an indicator as a composite of outreach, usage and quality (see Sarma, 2008; Honohan, 2008).

Interestingly, the pure economic barriers orchestrated by BFSI firms could have made it easy for them to discriminate by using filters of geographic locations. Although it may not be possible to nail down to micro clusters and scattered settlements, this study could identify the presence of similar drives from district-level data. The exclusion index is calculated for 30 rural districts of Odisha by combining the representative dimensions of reach, availability and activity, using penetration data from the State Level Bankers Committee (SLBC) for a few years.

Full inclusion would imply the coverage of BFSI (banking and financial sector) for each adult member in a household. The gross delivery capacity of the BFSI sector is limited to their network catchment or incremental additions to their capacity from time to time. The service delivery ability of the BFSI sector increases when each customer enters into multiple relationships (e.g., called depth of inclusion). The variations in network capacity across the districts could generate a disturbing trend in possible exclusion of households. This paper highlights the extent of the financial exclusion index that incorporates the three stages of barriers possibly orchestrated by BFSI players. We deduce the shortfalls from threshold levels of a bundle of attributes to represent the normative gap, rather than visualising the attainment of a basket of achievements by households. This paper focuses on the computation of an index that incorporates impactful barriers to represent exclusiveness.

The rest of the paper continues as follows: we begin by highlighting the literature on barriers to inclusion in Section 2, propose the model in Section 3, describe the data and results in Section 4, and conclude the study in Section 5, respectively.

2 Literature

The majority discriminates against the minority. Industrial discrimination includes price discrimination by firms with monopolistic power in labour markets, restrictions on entry by existing trade unions and the use of government power to further political interests. Owing to Becker (1957), discrimination is a non-pecuniary element in human interactions. Appasamy et al. (1996) mention social discrimination or separation, where the variations are examined by geography, gender, age, income, wealth, religion and caste. The exclusion of a few groups inhibits households from accessing public or financial services. Discrimination against another group results from a social or physical distance or relative socio-economic status. An increase in the numerical importance of a minority group can increase the prejudice against them since the majority could fear the minority for their growing power.

For example, migrants discriminating against other migrants or migrants discriminating against the natives are also seen in a few parts of the globe. Hossein

(2015) found that educated men of East Indian descent were hesitant to transact with blacks in the pacific islands. In Guyana, the leading microfinance agencies are educated middle-class Indo-Guyanese who prefer to lend to Indo-Guyanese folks (Hossein, 2014). Martín-Oliver (2018) highlighted the negative consequences of discrimination with the physical presence of branches fallen in territories with higher unemployment and lower income or educational levels in Italy. Deshpande (2011) has mentioned years of caste discrimination in India that resulted in abysmal credit attainment levels among folks of a few lower caste groups. Deshpande (2011) has also said that discrimination against new employee recruitment in public and private sector jobs had lower opportunities for a few lower caste groups in India. Minority groups can retaliate against others by reacting against such discrimination by distancing themselves from the majority, such as borrowing from the informal sector, pawnbrokers money lenders. Hossein (2015) has mentioned that the Blacks in the Caribbean had faced racial discrimination in the banking system and switched to cooperative rotational savings unions. Becker (1957) says that consumers' perceive a retail store based not only on the prices of goods speed of service but also on the attitude of staff manning the stores. Non-pecuniary discrimination creates difficult terms that increase the apparent sale price to customers (Becker, 1957).

Discrimination is larger in unionised entities rather than in competitive labour markets. Unlike monopolists, competition in the marketplace kills trade unionism and discrimination; low-end manufacturing or agricultural farm labourers discriminate lower. This is because there is no single large farmer owner in low value adds sectors who can turn into a monopolist. The discrimination employed by banking firms includes consumer discrimination. Rural consumers located in the hinterland have no choice but to remain at the mercy of such BFSI firms.

According to Kendall et al. (2010), an estimated 0.9 accounts per adult in developing countries, and only 28% of banked adults have accounts. Honohan and King (2009) looked to see the reasons that prevented the excluded groups from not availing of financial products. The supply barriers for financial inclusion were identified by physical distance from the branch, branch timings, burdensome documentation, ill-suited products, language and staff attitudes, respectively. Kempson (2006) gave few explanations for why people were financially excluded. Some of the observed exclusion parameters were population density, caste dominance, gender inequality, number of anthropological classes, linguistic classes, the physical distance between two community settlements, etc. The other barriers to inclusion include; gender, race, religion, geography, sales staff, or the service provider owners, respectively.

Table 1 shows the district wise penetration of branch banking in Odisha. The diversity in branch penetration is presented in Table 1.

In the past, authors have attempted to establish a causal relationship between discrimination and using secondary survey data (Sarma, 2008; Mehrotra et al., 2009). The inclusion index is more of a phenomenon of understanding exclusion rather than inclusion per se. Inequality could refer to inequity across the general dimension of income, gender, capital or wealth, the endowment of any kind. Inequality is multifaceted and needs an implementable and operational definition. The degree of exclusion could be lower with higher network capacity, reducing physical distance between communities, rising diversity in spoken languages, rising diversity as in the number of anthropological minorities, etc.

Table 1 District wise banking profile in Odisha in 2011

No.	*District*	*Branches*	*ATMS*	*No. of households*	*Deposit (INR crores)*	*Credit (INR crores)*
1	Angul	163.00	254.00	297,050	4,001.43	1,857.99
2	Baleshwar	145.00	299.00	533,001	3,547.05	2,620.9
3	Bargarh	239.00	154.00	370,308	1,773.87	1,167.37
4	Bhadrak	141.00	205.00	306,333	1,854.28	1,421.15
5	Bolangir	43.00	175.00	414,749	2,010.17	1,065.87
6	Baudh	148.00	43.00	106,961	362.96	271.56
7	Cuttack	391.00	598.00	579,170	9,398.43	5,051.76
8	Debagarh	38.00	39.00	75,452	457.72	143.45
9	Dhenkanal	128.00	133.00	279,364	1,806.06	902.86
10	Gajapati	54.00	107.00	128,523	663.71	251.14
11	Ganjam	401.00	516.00	758,267	5,526.32	3,183.87
12	Jagatsinghpur	155.00	196.00	261,307	3,892.5	1,319.84
13	Jajapur	208.00	282.00	407,851	2,848.74	1,729.38
14	Jharsuguda	91.00	136.00	136,061	1,596.16	2,613.36
15	Kalahandi	132.00	144.00	401,251	1,359.46	1,026.81
16	Kendrapara	68.00	71.00	172,022	959.86	378.93
17	Keonjhar	128.00	173.00	321,934	1,856.89	940.6
18	Khorda	198.00	261.00	405,272	4,329.34	2,505.32
19	Koraput	690.00	1159.00	494,212	33,338.59	21,200.56
20	Malkangiri	118.00	141.00	337,677	2,000.07	896.92
21	Mayurbhanj	44.00	37.00	137,599	660.27	161.21
22	Nayagarh	255.00	279.00	586,253	3,029.25	1,635.79
23	Nabarangapur	108.00	57.00	273,423	1,131.32	759.48
24	Nuapada	60.00	130.00	228,315	716	430.39
25	Kandhamal	55.00	55.00	152,210	813.71	321.38
26	Puri	212.00	268.00	367,269	2,650.87	1,665.12
27	Rayagada	94.00	124.00	226,144	1,290.21	1,738.73
28	Sambalpur	185.00	230.00	249,597	9,103.77	1,743.93
29	Sonapur	66.00	66.00	151,136	677.38	435.19
30	Sundargarh	255.00	361.00	479,109	6,061.6	3,784.36

Note: In 2010, the only district in India has the largest number of bank branches is the Kangra District of Himachal Pradesh (RBI, 2010) that had 202 branches for 338,887 households having 3,372 villages covered (3,736) and a total of credit-deposit of Rs.680.1 millions in the year.

Source: SLBC Odisha and Reserve Bank of India

3 Model

Previous studies have attempted to devise financial inclusion by directly multiplying numbers, but only a few have suggested alternate approaches. The most commonly used attributes comprised a number of bank accounts (per 1,000 adult persons), the number of bank branches (per million people), number of ATMs (per million people), amount of bank credit and amount of bank deposit, etc. Beck et al. (2007) considered few other banking sector outreach indicators, such as geographic branch penetration, loan and deposit accounts per capita, loan-income and deposit-income ratios, respectively. Sarma (2008) compared an index for over 55 countries in the globe by incorporating the number of bank accounts, number of branches, total credit, total deposit, etc. Sarma (2008) mapped three major dimensions; depth of access, number of accounts held per 1,000 people, availability, number of bank branches and number of ATMs per 1,000 people, respectively. Mehrotra et al. (2009) built an index for inclusion by using; the number of offices in rural areas, number of deposit accounts in rural branches, the total volume of rural deposits, and rural credit from over sixteen major states in India. For example, the HDI (2019) implies that the divergence in basic capabilities among citizens leads to variation in enhanced capabilities, such as critical healthcare or professional education. This could mean inequality is represented by revising the threshold levels of capabilities or adding to the bundle of attributes over time.

Sen (1992) and Tsui (2002) suggest that a person i may be called poor concerning attribute j if $x_{ij} < z_j$. Conversely, a person i is regarded as rich if $x_{ij} \geq z_j$ for all j. The total number of poor can be summed up by adding the number of people in $x_{ij} < z_j$.

Alkire and Foster's (2011) original model and its adaptations in HDI (2008) are implemented as a geometric mean of the sub-indices of education, health and assets. HDI (2008) uses pre-defined thresholds attainments, namely, education [e.g., no household member completed five years of schooling < 1 and having a school-age child (up to grade 8) not attending school ≥ 1], health (e.g., no. household member malnourished ≥ 1 and no. children died ≥ 1), standard of living (e.g., no. of electricity meters at home < 1, no. drinking water pipe at home < 1, no. toilet at home or vicinity < 1, kgs of modern cooking fuel used < 1 and no. of car, truck or motorised vehicle < 1 and no. of bicycle/motorcycle/radio/ refrigerator/telephone/television ≥ 1).

The fixed threshold values of HDI sub-indices are a priori Bayesian estimates and could be biased in nature. The fixed thresholds of capability (Z_j) cannot explain the movements of the poor being rich in the group.

Let the probability of an included household be $P(x, z)$, where x (x_1–x_m) refers to the bundle of attributes, where x_1, x_2, x_m are the attributes 1 – m.

The households are included when they have attained the least level of each attribute ($x_j \geq Z_j$). The definition relies on the capability threshold between the haves and have nots.

We define an exclusion indicator

$$\rho_i, \text{ where } \rho\left(x_j, z\right) = 1 \text{ if } \exists j \in (1, 2, \ldots, m),\ x_{ij} < z_j \text{ and } \rho_i\left(x_i, z\right) = 0, \text{ otherwise} \quad (1)$$

The probability of exclusion, $Prob_i$ ($x_j \leq Z_j$), is the proportion of households who do not possess either of m bundles 1 to j within a group.

$$Prob_i\left(x_j \leq Z_j\right) = \sum\nolimits_i \rho\left(x_j, z\right) \quad (2)$$

Here, the capability threshold (z_j) changes with the rise in capacity.

We present a three-level discrimination scheme to explain the impact of the three dimensions:

1 *No-reach: No-reach* indicates whether the cob-web of BFSI has reached the nooks of people across the catchment or provinces, viz. geographic or demographic penetration indicators. First level discrimination would imply that BFSI ignored a few villages or panchayats. Conversely, *full reach* could mean that the catchment of BFSI covered households in all 649,481 villages in India (Census of India, 2011).

2 *In-availability: In-availability* indicates the density of bank branches, BFSI centres, extension counters, ATMs, etc. The second level of discrimination would imply that BFSI never attempted to install in network capability or ATMs, bank branches or BFSI centres in those districts.

3 *Inactivity: Inactivity* indicates the depth of the financial relationships, number of accounts per household, balance in deposit and credit accounts. The third level of discrimination would imply that BFSI never attempted to attract and retain or activate the households who already had some financial relationship.

We denote and apply this framework to territories:

- let C_{ni} be projected targets for province n and attribute m
- let A_{nj} be threshold levels for province n and attributes m
- let a_{nj} be the actual attainment for province n and attribute m.

Then, exclusion equals

$$E_{nj} = C_{ni} - A_{nj} - a_{nj} \tag{3}$$

For each level of discrimination, the dimensions are given below:

1 *No-reach:* $D_{1i} = \dfrac{\sum E_{1ji}}{m}$

where D_1 is the dimension index for no-reach.

2 *In-availability:* $D_{2i} = \dfrac{\sum E_{2ji}}{m}$

where D_2 is the dimension index for in availability.

3 *Inactivity:* $D_{3i} = \dfrac{\sum E_{3ji}}{m}$

where D_3 is the dimension index for dormancy.

Each sub-index D_i (D_1–D_3) varies between (0, 1) when normalised. The financial exclusion index is arrived as,

$$FEI = \left(D_{1i}^{1/3} + D_{2i}^{1/3} + D_{3i}^{1/3}\right) \tag{4}$$

As in Foster and Shorrocks (1991), the geometric mean FEI index does satisfy properties of normalisation, monotony, scale invariance and focus axiom, respectively. The correlation tests among the attributes ensure focus axiom. Further, Alkire and Foster (2011) suggested using independent and unrelated statistics on income, health and education to summarise path independence.

4 Data and results

Table 1 shows the banking profile of Odisha in 2011 for all the 30 districts in Odisha. It is seen that few districts have poor branch penetration and credit or deposit levels (e.g., Baudh, Debgarh, Kandhamal). The Kangra District of Himachal Pradesh is the district in India that has the largest number of 419 bank branches in 2019 (RBI, 2020) reported. In 2010, Kangra District of Himachal Pradesh had the largest number of 202 bank branches (RBI, 2010) for 338,887 households having 3,372 villages covered (3,736) and a total of credit-deposit of INR 6,801 crores in the year. Therefore, the capacity parameter is village coverage, branch penetration and total credit deposit of Kangra District in this study. The rest of the actual inclusion data are collected from the district level statistics reported by SLBC. The computation of FEI proceeds with each of the three ratios for the Kangra District of Himachal Pradesh.

Hence, the sub-index values of D_1, D_2, and D_3 for each district in Odisha are normalised by dividing the relevant ratios for Kangra in Himachal Pradesh for 2010–2011 (e.g., geographical penetration = shares of villages covered = 3,736/3,908), branch coverage = shares of branches to households = 223/338,887, and a total of credit and deposit = 6,801 crores, Kangra District of Himachal Pradesh had 202 branches for 338,887 households and 3,372 villages covered (total 3,736) and a credit-deposit of INR 6,801 crores).

Table 2 shows that the maximum value FEI above 0.70 is achieved by Malkangiri, Kandhamal and Boudh. The minimum FEI levels, which imply values below 0.2, and positive inclusion, are the districts of Cuttack, Ganjam and Khurda, respectively. All other remaining districts have FEI values ranging between 0.2 and 0.7. Mishra et al. (2020) identified eight backward districts of Odisha in a study of convergence and inequality using Census of India (2011) data. The eight low developed backwards districts reported in Mishra et al. (2020) happen to be a subset of the low FII districts identified in our analysis. The current levels of FEI could be lowered with higher branch network capacity.

Alongside FEI in Table 2, we report the HDI for all the 30 districts for 2011 as reported in Singh and Keshari (2016).

Table 3 gives the dimension wise summary and the FEI for the districts of Odisha. Table 3 also shows the HDI values and CRISILX values for all the districts of Odisha.

We conduct a correlation test between the calculated FEI and HDI values. Table 4 reports a matrix of the correlations among the dimensions of our FEI and the three elements of HDI to identify the degree of sensitivity.

Table 2 District wise HDI for Odisha and $FEI_{BANKING}$ in 2011

No.	*District*	*Health*	*Education*	*Income*	*HDI*	*Financial exclusion index (FEI)*
1	Anugul	0.70	0.59	0.39	0.542	0.34
2	Balangir	0.67	0.42	0.33	0.454	0.48
3	Baleshwar	0.76	0.74	0.39	0.603	0.48
4	Bargarh	0.74	0.30	0.33	0.420	0.49
5	Baudh	0.56	0.54	0.28	0.439	0.49
6	Bhadrak	0.70	0.65	0.37	0.550	0.70
7	Cuttack	0.72	0.73	0.47	0.628	0.06
8	Debagarh	0.70	0.49	0.30	0.465	0.71
9	Dhenkanal	0.65	0.55	0.36	0.507	0.52
10	Gajapati	0.59	0.48	0.34	0.457	0.63
11	Ganjam	0.65	0.53	0.47	0.543	0.17
12	Jagatsinghapur	0.77	0.81	0.45	0.654	0.32
13	Jajapur	0.75	0.70	0.35	0.570	0.45
14	Jharsuguda	0.79	0.52	0.38	0.542	0.46
15	Kalahandi	0.62	0.41	0.32	0.436	0.54
16	Kandhamal	0.59	0.55	0.26	0.436	0.74
17	Kendrapara	0.72	0.71	0.43	0.604	0.40
18	Kendujhar	0.65	0.48	0.32	0.461	0.38
19	Khordha	0.67	0.80	0.53	0.659	-1.00
20	Koraput	0.55	0.30	0.30	0.368	0.57
21	Malkangiri	0.51	0.39	0.25	0.366	0.63
22	Mayurbhanj	0.71	0.51	0.26	0.456	0.56
23	Nabarangapur	0.52	0.18	0.25	0.283	0.70
24	Nayagarh	0.63	0.60	0.36	0.515	0.68
25	Nuapada	0.63	0.44	0.32	0.449	0.68
26	Puri	0.71	0.78	0.46	0.637	0.35
27	Rayagada	0.57	0.38	0.32	0.411	0.54
28	Sambalpur	0.73	0.37	0.40	0.480	0.13
29	Sonapur	0.71	0.62	0.35	0.534	0.67
30	Sundargarh	0.74	0.63	0.36	0.548	0.16
All					0.500	0.43

Source: Author's calculation

We find that the correlations with HDI dimensions such as Health, education, and income are significant. HDI and FEI correlation (–0.551) is negative and significant. The correlation between HDI and CRISILX (0.496) is positive and significant. FEI shows a higher correlation with HDI than CRISILX. FEI is strongly correlated (–0.802) with CRISILX. In continuation, branch density shows the highest correlation (0.657) with the income parameter of HDI. The attribute of total deposit and credit shows the highest correlation (0.631) with the income parameter of HDI. Overall, it seems the income

parameter of HDI is consistently correlated with all the dimensions of FEI. Further, the strong negative correlation implies that exclusion has negatively impacted development indicators. The evidence in earlier studies of Burgess and Pande (2005) demonstrated the role of branch banking in poverty alleviation. Koomson et al. (2020) demonstrated similar evidence on poverty using a multidimensional measure of inclusion.

Table 3 District wise HDI, $FEI_{BANKING}$ and CRISILX in 2011

No.	*District*	*Coverage of villages*	*Branch density*	*Total deposit and credit*	*Financial exclusion index (FEI)*	*HDI*	*CRISILX*
1	Angul	0.94	0.56	0.54	0.34	0.542	38.9
2	Balangir	1.00	0.28	0.33	0.54	0.454	35.1
3	Baleshwar	0.37	0.59	0.64	0.48	0.603	31.8
4	Bargarh	0.94	0.48	0.29	0.49	0.420	28.2
5	Baudh	1.00	0.32	0.30	0.54	0.439	30.3
6	Bhadrak	0.99	0.43	0.06	0.70	0.550	26.5
7	Cuttack	0.93	0.61	1.00	0.17	0.628	44.1
8	Debagarh	0.84	0.52	0.05	0.71	0.465	27.8
9	Dhenkanal	0.83	0.43	0.31	0.52	0.507	34.8
10	Gajapati	1.00	0.48	0.10	0.63	0.457	29.2
11	Ganjam	0.94	0.55	1.00	0.20	0.543	36.7
12	Jagatsinghapur	0.84	0.61	0.60	0.32	0.654	39.5
13	Jajapur	0.80	0.47	0.44	0.45	0.570	34.0
14	Jharsuguda	0.93	0.68	0.25	0.46	0.542	39.7
15	Kalahandi	0.96	0.37	0.27	0.54	0.436	32.0
16	Kandhamal	0.26	0.45	0.15	0.74	0.436	29.6
17	Kendrapara	1.00	0.43	0.28	0.50	0.604	33.3
18	Kendujhar	0.68	0.56	0.62	0.38	0.461	39.7
19	Khordha	1.00	1.00	1.00	0.00	0.659	72.4
20	Koraput	0.66	0.34	0.36	0.57	0.368	32.0
21	Malkangiri	1.00	0.29	0.08	0.71	0.366	22.0
22	Mayurbhanj	0.29	0.49	0.57	0.56	0.456	36.5
23	Nabarangapur	0.89	0.22	0.13	0.70	0.283	31.0
24	Nayagarh	0.92	0.29	0.11	0.68	0.515	20.7
25	Nuapada	0.26	0.73	0.17	0.68	0.449	33.5
26	Puri	1.00	0.54	0.47	0.36	0.637	38.9
27	Rayagada	1.00	0.46	0.20	0.54	0.411	34.4
28	Sambalpur	0.95	0.63	1.00	0.15	0.480	44.0
29	Sonapur	0.86	0.40	0.10	0.67	0.534	29.3
30	Sundargarh	0.95	0.52	1.00	0.21	0.548	34.3
					0.48	0.500	

Source: Author's calculation using SLBC data

Table 4 Pearson correlation between elements of $FEI_{BANKING}$ and HDI (development)

No.	*Variable 1*	*Variable 2*	*Correlation (ρ)*	*t-value*
1	HDI	Financial exclusion (FEI)	–0.598	–3.95**
2	HDI	CRISILX	0.496	3.02*
3	CRISILX	Financial exclusion (FEI)	–0.802	–7.10**
4	Branch density	HealthHDI	0.511	3.15*
5	Branch density	EducationHDI	0.467	2.79*
6	Branch density	IncomeHDI	0.657	4.61**
7	Coverage of villages	HealthHDI	–0.002	–0.01
8	Coverage of villages	EducationHDI	0.024	0.13
9	Coverage of villages	IncomeHDI	0.338	1.90*
10	Total deposit and credit	HealthHDI	0.408	2.37*
11	Total deposit and credit	EducationHDI	0.363	2.06*
12	Total deposit and credit	IncomeHDI	0.631	4.31-*

Notes: 1 FEI shows a higher correlation with HDI than CRISILX.
2 FEI is strongly correlated with CRISILX.
3 Branch density shows the highest correlation with the income parameter of development.
4 Total deposit and credit shows the highest correlation with income parameter of development.
5 *Significance at 95%.
6 **Significance at 99%.

Source: Author's calculation using SLBC data

5 Conclusions

This paper focused on inter-district inequality in the financial attainment of a state by normalising against an existing benchmark district outside the state. It worked on a conceptual measure of the degree of exclusivity that complied with standard properties. It normalised the inequality among the districts of Odisha against a reference district of Kangra in Himachal Pradesh. It described the status quo of the current level of attainment and found wide variability in financial inclusion. It identified few districts of Deogarh, Malkangiri, Boudh, and Kadhmal had much higher FEI values. This establishes the half-hearted supply-side efforts made by BFSI players. Chakrabarty (2010) had mentioned that a considerable amount of resources needs to be invested in ensuring branch capacity expansion, given the lethargic efforts of the BFI players. We found a strong positive impact of inclusion on all development parameters using correlation tests. Chakrabarty (2010, 2014) had especially stressed that inclusion resulted from a long drawn lack of pace in the enhancement of capacity. It attempted to relate the backwardness of a few districts to the lack of inclusive efforts. It established a strong correlation between human development and the FEI. Sen (2000) suggested that the perspective of social exclusion enhances the understanding of capability deprivation. Sen (2000) mentioned that instead of just calculating social exclusion, the concept has to be assessed in terms of its contribution to understanding deprivation. Sen (2000) highlighted

that the causally significant exclusions of the nature of banking services do have social implications due to the denial of fair economic opportunities.

The main differences in this study are the relationship between exclusion and discrimination is analysed at a micro-level, considering the qualitative dimension of the problem. While financial discrimination in India is mostly undertaken at the state level, few attempts to report inclusion across districts. The suggested approach is consistent with theories of financial discrimination as a multidimensional problem (Carbo et al., 2005; Kempson et al., 2000). There are few limitations in our data-hungry approach with respect to its implementation for developing economies. The compilation of statistics that are input for constructing the index is not periodically available for many provinces. Even HDI (2008) data for state-level are not an attempted reality in India. Future research must attempt to find the impact of institutional discrimination, such as voters concentration, unions existing within BFSI had led to larger discrimination. Oppenheim (1998) suggests focusing on multi-causal, relational, and intangible aspects such as losing status, power, self-esteem and political exclusion. Becker (1957) mentioned the importance of workplace discrimination and union concentration, respectively. Sen (2000) mentions that the focus on social exclusion can help in causal and constitutive analyses of poverty and deprivation.

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