

FACTOR

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/VARIABLES IlliterPer_16 Degdepriv_16 SelfempFR_16 Unempper_16 FWDPer_16 Ol
dab65per_16 Pophu GreencapTHU Roadha_Thpop DisabPer_16 ExpADM_16 BdenkebA
/MISSING MEANSUB
/ANALYSIS IlliterPer_16 Degdepriv_16 SelfempFR_16 Unempper_16 FWDPer_16 Old
ab65per_16 Pophu GreencapTHU Roadha_Thpop DisabPer_16 ExpADM_16 BdenkebA
/PRINT UNIVARIATE INITIAL CORRELATION SIG DET KMO EXTRACTION ROTATION
/PLOT EIGEN
/CRITERIA MINEIGEN(1) ITERATE(25)
/EXTRACTION PC
/CRITERIA ITERATE(25)
/ROTATION VARIMAX
/SAVE REG(ALL)
/METHOD=CORRELATION.

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## Factor Analysis

[DataSet1] C:\Gizachew\_article\Third\_Journal\analysis\Expenditure\_2016\_MDI\_No  
v2020.sav

**Descriptive Statistics**

	Mean	Std. Deviation <sup>a</sup>	Analysis N <sup>a</sup>	Missing N
HHS with educational status illiterate for 2015/16 (%)	15.9391	9.37795	99	6
HHS not having Degree and above for 2015/16(%)	96.0804	5.31592	99	6
HHS employed in self-employed formal for 2015/16(%)	11.9091	9.19991	99	6
Unemployment % from economically active age group(10-64) for 2015/16	22.2553	8.95731	99	6
Female HSS Widowed or Divorced for 2015/16(%)	23.0522	9.57467	99	6
% of HHS with age 65 and above	15.2635	7.75089	99	6
Population per hectare	195.6928	170.60824	99	0
Green per capita per 1000 population	13.3012	63.46507	99	0

### Descriptive Statistics

	Mean	Std. Deviation <sup>a</sup>	Analysis N <sup>a</sup>	Missing N
Road area in hectare per 1000population	1.7230	2.32970	99	0
HHS with disability for 2015/16(%)	2.4632	2.57706	99	6
Income per Adult Equivalent per Month for 2015/16	2350.9991	606.64459	99	6
Built-up area per kebele area in m2	.2537	.13784	99	0

a. For each variable, missing values are replaced with the variable mean.

### Correlation Matrix<sup>a</sup>

		HHS with educational status illiterate for 2015/16 (%)	HHS not having Degree and above for 2015/16(%)	HHS employed in self-employed formal for 2015/16(%)
Correlation	HHS with educational status illiterate for 2015/16 (%)	1.000	.279	.479
	HHS not having Degree and above for 2015/16(%)	.279	1.000	.215

### Correlation Matrix<sup>a</sup>

		Unemployment % from economically active age group(10-64) for 2015/16	Female HSS Widowed or Divorced for 2015/16(%)	% of HHS with age 65 and above
Correlation	HHS with educational status illiterate for 2015/16 (%)	.061	.297	.249
	HHS not having Degree and above for 2015/16(%)	-.091	-.006	-.178

**Correlation Matrix<sup>a</sup>**

		Population per hectare	Green per capita per 1000 population	Road area in hectare per 1000population
Correlation	HHS with educational status illiterate for 2015/16 (%)	.196	.237	.256
	HHS not having Degree and above for 2015/16(%)	.062	.088	.066

**Correlation Matrix<sup>a</sup>**

		HHS with disability for 2015/16(%)	Income per Adult Equivalent per Month for 2015/16	Built-up area per kebele area in m2
Correlation	HHS with educational status illiterate for 2015/16 (%)	.270	-.469	.140
	HHS not having Degree and above for 2015/16(%)	.156	-.237	-.121

**Correlation Matrix<sup>a</sup>**

		HHS with educational status illiterate for 2015/16 (%)	HHS not having Degree and above for 2015/16(%)	HHS employed in self-employed formal for 2015/16(%)
Sig. (1-tailed)	HHS employed in self-employed formal for 2015/16(%)	.479	.215	1.000
	Unemployment % from economically active age group(10-64) for 2015/16	.061	-.091	-.168
	Female HSS Widowed or Divorced for 2015/16(%)	.297	-.006	.101
	% of HHS with age 65 and above	.249	-.178	.020
	Population per hectare	.196	.062	.268
	Green per capita per 1000 population	.237	.088	.054
	Road area in hectare per 1000population	.256	.066	.049
	HHS with disability for 2015/16(%)	.270	.156	.206
	Income per Adult Equivalent per Month for 2015/16	-.469	-.237	-.444
	Built-up area per kebele area in m2	.140	-.121	.188
	HHS with educational status illiterate for 2015/16 (%)		.003	.000
	HHS not having Degree and above for 2015/16(%)	.003		.019
	HHS employed in self-employed formal for 2015/16(%)	.000	.019	
	Unemployment % from economically active age group(10-64) for 2015/16	.280	.192	.054
	Female HSS Widowed or Divorced for 2015/16(%)	.002	.477	.169
	% of HHS with age 65 and above	.008	.044	.423
	Population per hectare	.030	.278	.005
	Green per capita per 1000 population	.011	.200	.303

**Correlation Matrix<sup>a</sup>**

		Unemployment % from economically active age group(10-64) for 2015/16	Female HSS Widowed or Divorced for 2015/16(%)	% of HHS with age 65 and above
	HHS employed in self-employed formal for 2015/16(%)	-.168	.101	.020
	Unemployment % from economically active age group(10-64) for 2015/16	1.000	.268	.082
	Female HSS Widowed or Divorced for 2015/16(%)	.268	1.000	.553
	% of HHS with age 65 and above	.082	.553	1.000
	Population per hectare	.232	.403	.362
	Green per capita per 1000 population	-.100	-.054	-.034
	Road area in hectare per 1000population	-.157	-.202	-.178
	HHS with disability for 2015/16(%)	.029	.176	.137
	Income per Adult Equivalent per Month for 2015/16	.038	-.215	.003
	Built-up area per kebele area in m2	.268	.460	.407
Sig. (1-tailed)	HHS with educational status illiterate for 2015/16 (%)	.280	.002	.008
	HHS not having Degree and above for 2015/16(%)	.192	.477	.044
	HHS employed in self-employed formal for 2015/16(%)	.054	.169	.423
	Unemployment % from economically active age group(10-64) for 2015/16		.005	.216
	Female HSS Widowed or Divorced for 2015/16(%)	.005		.000
	% of HHS with age 65 and above	.216	.000	
	Population per hectare	.013	.000	.000
	Green per capita per 1000 population	.170	.303	.373

Correlation Matrix<sup>a</sup>

		Population per hectare	Green per capita per 1000 population	Road area in hectare per 1000population n
Sig. (1-tailed)	HHS employed in self-employed formal for 2015/16(%)	.268	.054	.049
	Unemployment % from economically active age group(10-64) for 2015/16	.232	-.100	-.157
	Female HSS Widowed or Divorced for 2015/16(%)	.403	-.054	-.202
	% of HHS with age 65 and above	.362	-.034	-.178
	Population per hectare	1.000	-.230	-.448
	Green per capita per 1000 population	-.230	1.000	.840
	Road area in hectare per 1000population	-.448	.840	1.000
	HHS with disability for 2015/16(%)	.141	-.075	-.138
	Income per Adult Equivalent per Month for 2015/16	-.244	-.144	-.173
	Built-up area per kebele area in m2	.837	-.353	-.528
	HHS with educational status illiterate for 2015/16 (%)	.030	.011	.007
	HHS not having Degree and above for 2015/16(%)	.278	.200	.264
	HHS employed in self-employed formal for 2015/16(%)	.005	.303	.321
	Unemployment % from economically active age group(10-64) for 2015/16	.013	.170	.067
	Female HSS Widowed or Divorced for 2015/16(%)	.000	.303	.026
	% of HHS with age 65 and above	.000	.373	.044
	Population per hectare		.011	.000
	Green per capita per 1000 population	.011		.000

Correlation Matrix<sup>a</sup>

		HHS with disability for 2015/16(%)	Income per Adult Equivalent per Month for 2015/16	Built-up area per kebele area in m2
Sig. (1-tailed)	HHS employed in self-employed formal for 2015/16(%)	.206	-.444	.188
	Unemployment % from economically active age group(10-64) for 2015/16	.029	.038	.268
	Female HSS Widowed or Divorced for 2015/16(%)	.176	-.215	.460
	% of HHS with age 65 and above	.137	.003	.407
	Population per hectare	.141	-.244	.837
	Green per capita per 1000 population	-.075	-.144	-.353
	Road area in hectare per 1000population	-.138	-.173	-.528
	HHS with disability for 2015/16(%)	1.000	-.141	.150
	Income per Adult Equivalent per Month for 2015/16	-.141	1.000	-.162
	Built-up area per kebele area in m2	.150	-.162	1.000
	HHS with educational status illiterate for 2015/16 (%)	.004	.000	.090
	HHS not having Degree and above for 2015/16(%)	.067	.011	.123
	HHS employed in self-employed formal for 2015/16(%)	.024	.000	.035
	Unemployment % from economically active age group(10-64) for 2015/16	.392	.360	.005
	Female HSS Widowed or Divorced for 2015/16(%)	.046	.019	.000
	% of HHS with age 65 and above	.096	.487	.000
	Population per hectare	.082	.008	.000
	Green per capita per 1000 population	.231	.077	.000

**Correlation Matrix<sup>a</sup>**

	HHS with educational status illiterate for 2015/16 (%)	HHS not having Degree and above for 2015/16(%)	HHS employed in self-employed formal for 2015/16(%)
Road area in hectare per 1000population	.007	.264	.321
HHS with disability for 2015/16(%)	.004	.067	.024
Income per Adult Equivalent per Month for 2015/16	.000	.011	.000
Built-up area per kebele area in m2	.090	.123	.035

**Correlation Matrix<sup>a</sup>**

	Unemployment % from economically active age group(10-64) for 2015/16	Female HSS Widowed or Divorced for 2015/16(%)	% of HHS with age 65 and above
Road area in hectare per 1000population	.067	.026	.044
HHS with disability for 2015/16(%)	.392	.046	.096
Income per Adult Equivalent per Month for 2015/16	.360	.019	.487
Built-up area per kebele area in m2	.005	.000	.000

**Correlation Matrix<sup>a</sup>**

	Population per hectare	Green per capita per 1000 population	Road area in hectare per 1000population
Road area in hectare per 1000population	.000	.000	
HHS with disability for 2015/16(%)	.082	.231	.087
Income per Adult Equivalent per Month for 2015/16	.008	.077	.044
Built-up area per kebele area in m2	.000	.000	.000



**Correlation Matrix<sup>a</sup>**

	HHS with disability for 2015/16(%)	Income per Adult Equivalent per Month for 2015/16	Built-up area per kebele area in m2
Road area in hectare per 1000population	.087	.044	.000
HHS with disability for 2015/16(%)		.089	.076
Income per Adult Equivalent per Month for 2015/16	.089		.061
Built-up area per kebele area in m2	.076	.061	

**KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.652
Bartlett's Test of Sphericity	Approx. Chi-Square
	461.879
	df
	66
	Sig.
	.000

### Communalities

	Initial	Extraction
HHS with educational status illiterate for 2015/16 (%)	1.000	.687
HHS not having Degree and above for 2015/16(%)	1.000	.425
HHS employed in self-employed formal for 2015/16(%)	1.000	.600
Unemployment % from economically active age group(10-64) for 2015/16	1.000	.263
Female HSS Widowed or Divorced for 2015/16(%)	1.000	.643
% of HHS with age 65 and above	1.000	.607
Population per hectare	1.000	.702
Green per capita per 1000 population	1.000	.807
Road area in hectare per 1000population	1.000	.906
HHS with disability for 2015/16(%)	1.000	.222
Income per Adult Equivalent per Month for 2015/16	1.000	.548
Built-up area per kebele area in m2	1.000	.781

Extraction Method: Principal Component Analysis.

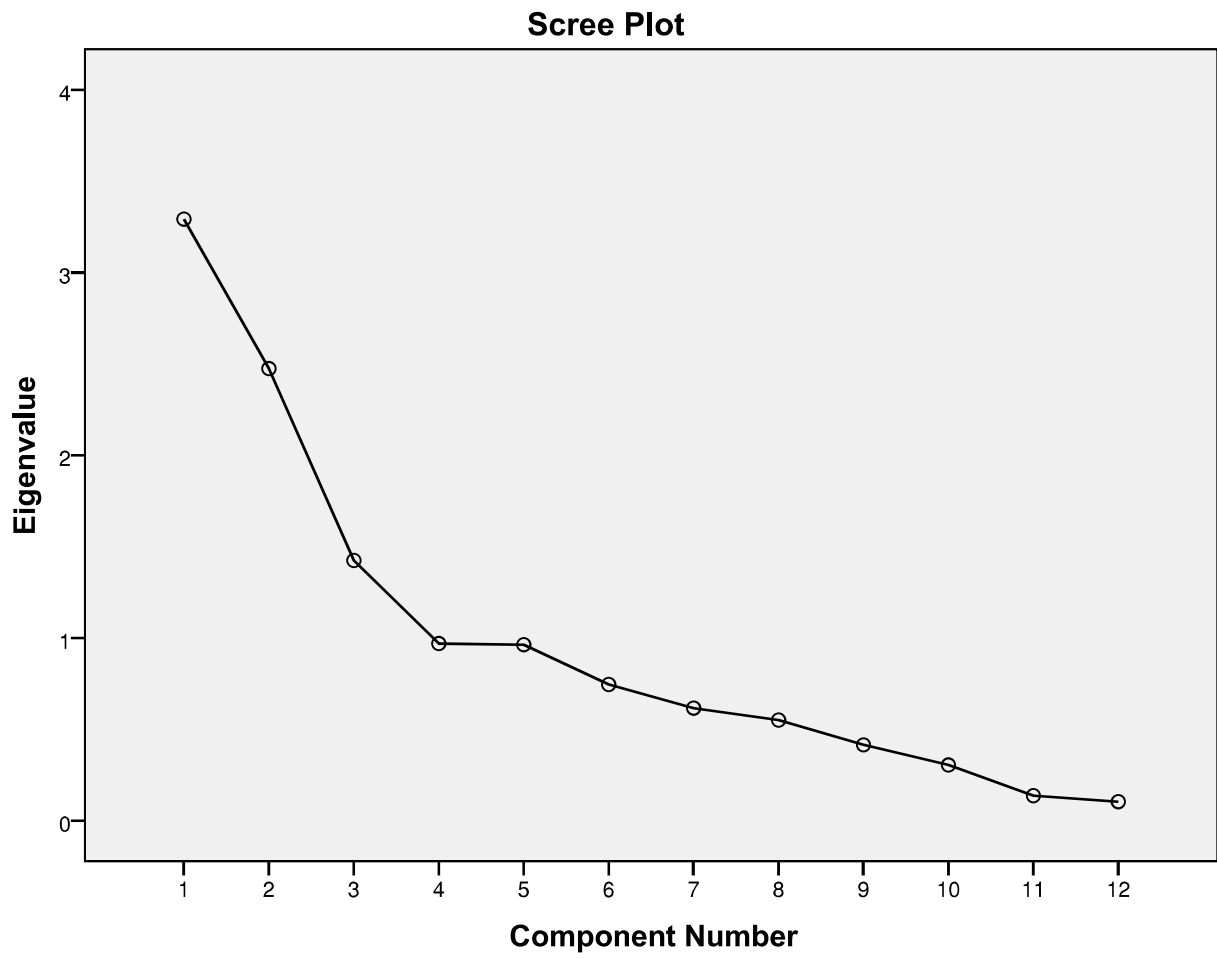
**Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.292	27.436	27.436	3.292	27.436	27.436
2	2.474	20.620	48.056	2.474	20.620	48.056
3	1.424	11.869	59.925	1.424	11.869	59.925
4	.970	8.080	68.005			
5	.964	8.029	76.034			
6	.746	6.216	82.250			
7	.617	5.138	87.388			
8	.551	4.594	91.982			
9	.415	3.461	95.443			
10	.305	2.541	97.984			
11	.137	1.145	99.129			
12	.105	.871	100.000			

**Total Variance Explained**

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	2.454	20.450	20.450
2	2.397	19.971	40.421
3	2.341	19.504	59.925
4			
5			
6			
7			
8			
9			
10			
11			
12			

Extraction Method: Principal Component Analysis.



**Component Matrix<sup>a</sup>**

	Component		
	1	2	3
HHS with educational status illiterate for 2015/16 (%)	.335	.755	.075
HHS not having Degree and above for 2015/16(%)	.006	.449	-.473
HHS employed in self-employed formal for 2015/16(%)	.312	.601	-.376
Unemployment % from economically active age group(10-64) for 2015/16	.331	-.183	.347
Female HSS Widowed or Divorced for 2015/16(%)	.671	.140	.416
% of HHS with age 65 and above	.572	.018	.529
Population per hectare	.836	.009	-.055
Green per capita per 1000 population	-.428	.618	.492
Road area in hectare per 1000population	-.601	.624	.393
HHS with disability for 2015/16(%)	.334	.245	-.226
Income per Adult Equivalent per Month for 2015/16	-.285	-.661	.172
Built-up area per kebele area in m2	.872	-.142	.019

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

**Rotated Component Matrix<sup>a</sup>**

	Component		
	1	2	3
HHS with educational status illiterate for 2015/16 (%)	.299	.703	.323
HHS not having Degree and above for 2015/16(%)	-.312	.572	-.010
HHS employed in self-employed formal for 2015/16(%)	-.020	.774	-.024
Unemployment % from economically active age group(10-64) for 2015/16	.478	-.168	-.082
Female HSS Widowed or Divorced for 2015/16(%)	.777	.196	-.027
% of HHS with age 65 and above	.779	.009	.018
Population per hectare	.584	.371	-.473
Green per capita per 1000 population	.012	.097	.893
Road area in hectare per 1000population	-.183	.076	.931
HHS with disability for 2015/16(%)	.096	.432	-.163
Income per Adult Equivalent per Month for 2015/16	-.096	-.719	-.147
Built-up area per kebele area in m2	.660	.232	-.540

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

**Component Transformation Matrix**

Component	1	2	3
1	.742	.406	-.533
2	.000	.795	.606
3	.670	-.450	.591

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

COMPUTE NSMID\_2016=((27.436 / 59.925) \* FAC1\_3) + ((20.620 / 59.925) \* FAC2\_3) + ((11.869 / 59.925) \* (FAC3\_3)).

```

EXECUTE.
SORT CASES BY NSMID_2016 (A).
SORT CASES BY NSMID_2016 (A).
DATASET ACTIVATE DataSet1.
SAVE OUTFILE='C:\Gizachew_article\Third_Journal\analysis\Expenditure_2016_MDI
_Nov2020.sav'
/COMPRESSED.
SORT CASES BY NSMID_2016 (A).
SORT CASES BY NSMID_2016 (D).
COMPUTE SMID_2016=((NSMID_2016) - (-1.3101) / (1.5547 - (-1.3101))).
EXECUTE.
COMPUTE SMID_2016=(NSMID_2016) - (-1.3101) / (1.5547 - (-1.3101)) * 100.
EXECUTE.
SORT CASES BY SMID_2016 (D).
SORT CASES BY NSMID_2016 (A).
SORT CASES BY NSMID_2016 (A).
SORT CASES BY NSMID_2016 (A).
COMPUTE USIMD=(NSMID_2016 - (-1.3101)).
EXECUTE.
SORT CASES BY NSMID_2016 (D).
SORT CASES BY NSMID_2016 (A).
SORT CASES BY NSMID_2016 (D).
SORT CASES BY NSMID_2016 (A).
COMPUTE LSMID=(1.5547 - (-1.3101)).
EXECUTE.
COMPUTE SMID=(USIMD) / (LSMID) * 100.
EXECUTE.
DATASET ACTIVATE DataSet1.
SAVE OUTFILE='C:\Gizachew_article\Third_Journal\analysis\Expenditure_2016_MDI
_Nov2020.sav'
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SORT CASES BY SMID (D).
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_Nov2020.sav'
/COMPRESSED.

SORT CASES BY USIMD (A).
SORT CASES BY NSMID_2016 (A).
SORT CASES BY NSMID_2016 (D).
SORT CASES BY NSMID_2016 (A).
SORT CASES BY NSMID_2016 (D).

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DATASET ACTIVATE DataSet1.
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SORT CASES BY SMID (D).
STRING MDI_Categ (A8).
RECODE SMID (0 thru 20='VLD') (20.01 thru 40='LD') (40.01 thru 60='DE') (60.0
1 thru 80='HD') (80.01 thru 100='VHD') INTO MDI_Categ.
VARIABLE LABELS MDI_Categ 'MDI Category'.
EXECUTE.
DATASET ACTIVATE DataSet1.
SAVE OUTFILE='C:\Gizachew_article\Third_Journal\analysis\Expenditure_2016_MDI
_Nov2020.sav'
/COMPRESSED.
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