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Determination And Collation Of Pavement Condition Index Based On Indian Road Congress (IRC) And American Society For Testing and Material (ASTM) Methods For Roads In Jalgaon City

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Abstract - *The Pavement Condition Index (PCI) is a straightforward, handy and inexpensive way to monitor the condition of surface of the roads, identify maintenance and rehabilitation needs well as to make sure that road maintenance expenses are spent judiciously. This research paper is a step in the same direction, to develop Pavement Condition Index for the selected roads in Jalgaon city. The study area includes urban road sections of various roads of the Jalgaon city of overall length of 18 km . In this research paper, pavement condition is determined and compared in terms of surface distresses existing at the time of field evaluation and pavement condition index is determined using two different methods which shows prominent similarities in results.*

Key Words: **Pavement Condition Index, IRC, ASTM, Pavement Distress, Asphalt Pavement Evaluations.**

1.INTRODUCTION

This research paper presents the pavement performance evaluation for ten chosen urban road sections of Jalgaon city. The pavement condition indicator used to represent the pavement condition of chosen selected urban road sections is, combined Overall Pavement Condition Index (OPCI). These indices were developed severally then combined together to form an OPCI giving significance of each indicator. The pavement condition data was accumulated in the year 2022-23, which involves measurements of longitudinal and transverse cracking, alligator cracking, potholes, rut depth, patching, raveling, roughness, structural deflection and skid resistance for all the chosen ten urban road sections. All the individual condition indices and the combined index ranged from the value 0 to 100. The pavement condition was rated based these values as 0-10: Failed; 10-25: Serious; 25-40: Very Poor; 40-55: Poor; 55-70: Fair; 70-85: Satisfactory; 85-100: Good.

Thus this research is fundamentally focused to carryout a relative study of pavement condition indexes (PCIs) evaluated by two standard techniques propound by IRC and ASTM. In addition, this research also developed a PCI prediction model based on the distress intensity of Alligator cracking, longitudinal or transverse cracking, Depression or settlement, Raveling, Potholes, and Patch work. The PCIs were estimated based on the field database information collected by visual inspection survey on selected Low volume road sections of length in the Jalgaon city.

2. METHODOLOGY

2.1 Method as per ASTM D6433

2.1.1 Considering Sections

To assess the worth of a pavement, first of all, the pavement nexus should be classified into branches (such as streets, parking areas, etc.) and each branch should be classified into segments that have certain harmonious characteristics right through their area or length, such as structural composition, construction history, traffic and pavement condition. A sample unit is any conspicuous area of the pavement section. It is the smallest component of the pavement nexus. Criteria for considering sections is as follows,

First, the sample size should be chosen adequately the length of the sample should be 30m and its width is taken equal to width of the road. The second step is to evaluate the number of samples to be selected for inspection. The number of total samples N in a branch is procured by dividing the length of the branch by the length of the sample, as shown below:

N = Length of the section/ Length of the sample

The curves shown in Figure1 is used to select the least number of sample units that must be scrutinize.

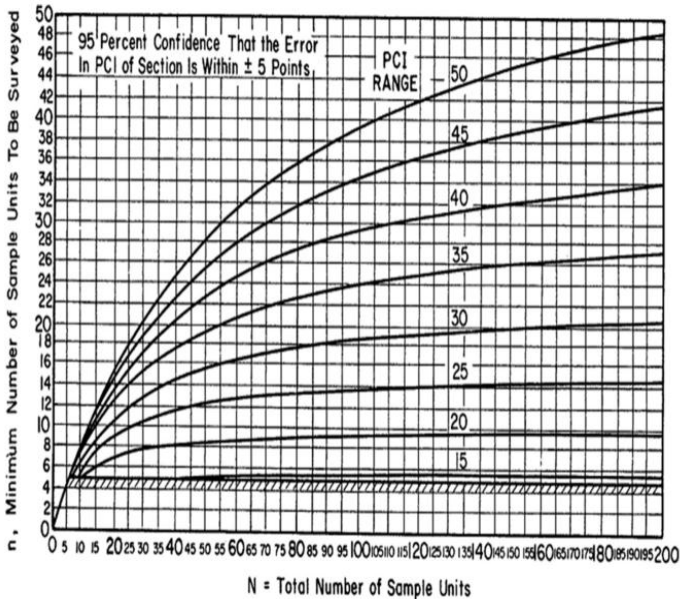

Fig 1. Determination of minimum number of samples to be surveyed.

Consider PCI range curve for Asphalt =25

To find the number of samples to be surveyed, start on the N scale , proceed vertically to the suitable curve (PCI range = 25) and read the value on the n scale. This will give number of sample units should be surveyed. The spacing interval i of the units to be chosen is taken from the following equation:

$$i = N/n$$

where,

i is the spacing between the samples

N is the total number of samples

n is samples to be surveyed.

All the sample numbers within a feature are numbered, and those that are multiples of the interval i are selected for evaluation. The first sample unit to be inspected should be selected at random between 1 and i sample units.

2.1.2 Inspecting Distresses

For the scrutiny of distresses of the chosen road, one or more sections of the road selected. Length of the section will be 30m. Section is selected so that it covers more number distresses in it. Then each distress is evaluated and its dimensions are noted. The types of distresses are as follows

1. Alligator cracking
2. Bleeding
3. Block cracking
4. Bumps and sags
5. Corrugation
6. Depression
7. Edge cracking
8. Joint refection cracking
9. Lane/shoulder drop off
10. Longitudinal and transverse cracking
11. Patching and utility cut patching
12. Polished aggregate
13. Potholes

2.1.3 Density Calculations

Density of the distresses, measured in square metre (m^2) is calculated as follows:

$$\text{Density} = (\text{Distress amount in } m^2 / \text{ Sample unit area in } m^2) \times 100$$

Density of distresses measured in linear metre (bumps, edge cracking, joint reflection cracking, lane/ shoulder drop-off as well as longitudinal and transverse cracks) is calculated as follows:

$$\text{Density} = (\text{Distress amount in linear m} / \text{ Sample unit area in } m^2) \times 100$$

Density of distresses, as measured by the number of potholes, is calculated as follows:

$$\text{Density} = (\text{Number of potholes} / \text{ Sample unit area in } m^2) \times 100$$

After the density of distresses for each distress type/severity combination is calculated, the deduct values are evaluated from the suitable distress deduct values. Then CDV is determined.

2.1.4 Severity calculations

The circumstantial description of various types of distresses considered with their level of severity is given in Table No.1The distress index is evaluated using the principle of Maximum Allowable Extents (MAE). The maximum allowable extent (MAE) for low, medium and high severity level for each type of distress which is used to evaluate the PCI has also been given in Table.

Table 1: Distress type and severity

Sr. No	Distress Type	Severity level	Description	MAE
1	Longitudinal and transverse cracking	Low	Crack with mean width < 6mm	25
		Medium	Crack with mean width > 6 mm and < 19 mm	20
		High	Crack with mean width ≥ 19 mm	10
2	Alligator cracking	Low	An area of cracks with no or only a few connecting cracks; 50 Cracking cracks are not spalled or sealed; pumping is not evident	50
		Medium	An area of interconnected cracks forming a complete pattern; cracks may be slightly spalled; cracks may be sealed; pumping is not evident.	25
		High	An area of moderately or severely spalled interconnected cracks forming a complete pattern; pieces may move when subjected to traffic; cracks may be sealed; pumping may be evident.	15
3	Patching	Low	Patch has, at most, low severity distress of any type; Ride 50 quality is affected minimally	50
		Medium	Patch has moderate severity distress of any type; ride quality 15 is noticeably affected	15
		High	Patch has high severity distress of any type; ride quality is 10 rough over patching	10
4	Ravelling		Not applicable	70
5	Rutting	Low	Ruts with a measured depth ≥ 6mm to ≤ 12mm	80
		'Medium	Ruts with a measured depth > 12mm to ≤ 25mm	60
		High	Ruts with a measured depth > 25 mm	30
6	Potholes	Low	< 25 mm depth	1.0
		Medium	25 -50 mm depth	1.0
		High	25 -50 mm depth	0.5

2.1.5 Preparing data sheet

After scanning distresses in the sections of the road and determining the types of distresses and their severities, the data sheet is produced. The datasheet comprises all distresses, their severity, density and deduct value.

2.1.6 Deduct value calculation

After obtaining densities of each distress, deduct value of each distress is evaluated. The deduct value is obtained by comparing the density of that distress in the standard graph. Graph is of deduct value against distress density. There are three curves in the graph representing severities of distresses as low, medium and high. According to the severity of the distresses.

2.1.7 Total Deduct Value and Corrected Deduct Value

Once all deduct values are calculated, total deduct value is obtained. Total deduct value is sum of all deduct value. Then Corrected deduct value is obtained. The corrected deduct value is taken from the graph. The graph is corrected deduct value against total deduct value. The graph is comprised of various curves having different q values. The q is the total number of deduct values greater than 2. Then, by selecting appropriate curve of q, the corrected deduct value for corresponding total deduct value is obtained. While determining the CDV, if any individual deduct value is higher than the CDV, the CDV is set equal to the highest individual deduct value.

2.1.8 Calculating PCI value

Once Corrected Deduct Value is obtained, PCI value is calculated by subtracting Corrected Deduct Value from 100. Then, by comparing value the PCI value with given range, rating of the road is given. The PCI can be found out by the

$$PCI = 100 - CDV$$

Table 2: PCI Rating

PCI	Rating
85-100	Excellent
70-85	Very Good
55-70	Good
40-55	Fair
25-40	Poor
10-25	Very Poor
0-10	Failed

The PCI of the pavement section is determined by averaging the PCI of its sample units. If any additional sample units are inspected, a weighted average must be used. The weighted average is computed by using the following equation:

$$PCI_A = (N-A)\ PCI_1/N + A\ PCI_2/N$$

Where,

PCI_A= PCI of pavement section,

PCI1= average PCI of random samples,

PCI2= average PCI of additional samples,

N = total number of samples in the section, and

A = number of additional samples inspected.

2.2 Method as per IRC:82-2015

2.2.1 Considering Section

In this method the pavement is also divided into branches (such as streets, parking areas, etc.) and each branch should be divided into sections that have certain consistent characteristics throughout their area or length, such as structural composition, construction history, traffic and pavement condition. A sample unit is any identifiable area of the pavement section. It is the smallest component of the pavement network.

First, the sample size should be selected properly because; the total width of the pavement will vary according to the type of road. It was decided to select the sample size 30 m long .The second step is to determine the number of samples to be chosen for inspection. The number of sample unit to be inspected will be same as that of previous.

2.2.2 Inspecting Distresses

For the inspection of distresses of the selected road, one or more sections of the road selected. Length of the section will be30m. section is selected so than it covers more number distresses in it. Then each distress is inspected and its dimensions are noted. The types of distresses inspected are as follows (As we have selected urban roads in Jalgaon City),

1. Cracking
2. Raveling
3. Potholes
4. Settlement
5. Rut depth

2.2.3 Density Calculation

Density of the distresses, measured in square metres (m^2) or square feet (ft^2), is calculated as follows:

Density = (Distress amount in m^2/ Sample unit area in m^2) ×100

Density of distresses measured in linear feet or metres (bumps, edge cracking, joint reflection cracking, lane/ shoulder drop-off as well as longitudinal and transverse cracks) is calculated as follows:

Density = (Distress amount in linear m/ Sample unit area in m^2) ×100

Density of distresses, as measured by the number of potholes, is calculated as follows:

Density = (Number of potholes/ Sample unit area in m^2) ×100

Table 3: Pavement Distress Based Rating for Urban Roads

Defect	Range of Distress		
Cracking %	>15	5-15	<5
Ravelling %	>10	5 to 10	<5
Potholes %	>0.5	>0 and ≤0.5	NIL (0)
Settlement %	>5	1-5	<1
Rut depth (mm) using 3 mstraight edge	>10	5-10	<5
Rating	1	1.1 - 2	2.1 - 3
Condition	Poor	Fair	Good

2.2.4 Assigning Rating

According to the density of the distress in the given section the rating is given to the corresponding section.

2.2.5 Assigning weightage (Fixed Multiplier Factor)

After assigning rating to each parameter an appropriate weightage is given to rating value of each parameter for calculation of weighted rating value of each parameter.The Following weightage has been fixed for each parameter as shown below,

Table 4: Pavement Distress Based Rating for Urban Roads

S.No.	Parameter	Weightage (Fixed) (Multiplier Factor)
1	Cracking	1.00
2	Ravelling	0.75
3	Potholes	0.50
4	Shoving	1.00
5	Patching	0.75
6	Settlement	0.75
7	Rut Depth	1.00

2.2.6 Calculation Of Weighted Rating Value

The Final Rating Value is calculated by taking the average of the Weighted Rating Values of all parameters viz. cracking, ravelling, potholes, shoving, patching, settlement and rut depth. Similarly, final rating for other category of roads may also be workedout, using the same approach.

2.2.7 Calculating PCI Value

According to the Average of the weighted rating value PCI of the section is determined.

Table 5: Weighted Rating Value

Pavement Condition	Weighted Rating Value
Good	2.1 to 3.0
Fair	1.1 to 2.0
Poor	0 to 1.0

3. Comparison between Methods

As in ASTM the pavement is classified as Failed, Serious, Very poor, Poor, Fair, Satisfactory and Good. But in IRC the pavement section is classified as Poor, Fair and Good. The relation between the two methods can be established as follows,

Table 6 : Condition Classification

Condition	
IRC	**ASTM**
Good	Good, Satisfactory,
Fair	Fair, Poor
Poor	Very Poor, Serious, Failed

The pavement condition rating from ASTM and IRC can be co-related as follows,

Table 7: Condition Rating

Pavement Condition	**Pavement Ratings**	
	ASTM	**IRC**
Good	70 to 100	2.1 to 3.0
Fair	41 to 69	1.1 to 2.0
Poor	0 to 40	0 to 1.0

4. Result And Observation

The pavement condition rating for the different roads under observation are as follows,

Table 8: Pavement Condition index
(DSP Chowk to Dmart)

DSP CHOWK TO D MART(750m):

Road Length= 750m, Section length=30m, Section width=7m, N=25 , n=9 i=3

SR NO.	SECTION NO.	LHS PCI(By ASTM)	RATING	LHS PCI(By IRC)	RATING	RHS PCI	RATING	RHS PCI(By IRC)	RATING
01	01	83	SATISFACTORY	2.2	GOOD	88	GOOD	2.1	GOOD
02	04	72	SATISFACTORY	2.1	GOOD	60	FAIR	1.2	FAIR
03	07	60	FAIR	1.3	FAIR	52	POOR	1.5	FAIR
04	10	74	SATISFACTORY	2.5	GOOD	70	FAIR	1.4	FAIR
05	13	86	GOOD	2.1	GOOD	85	GOOD	2.4	GOOD
06	16	62	FAIR	1.2	FAIR	50	POOR	1.8	GAIR
07	19	70	FAIR	1.4	FAIR	60	FAIR	1.4	FAIR
08	22	42	POOR	0.7	POOR	58	FAIR	1.3	FAIR
09	25	38	VERY POOR	0.8	POOR	40	VERY POOR	0.9	POOR
AVG. PCI		65	FAIR			63	FAIR		

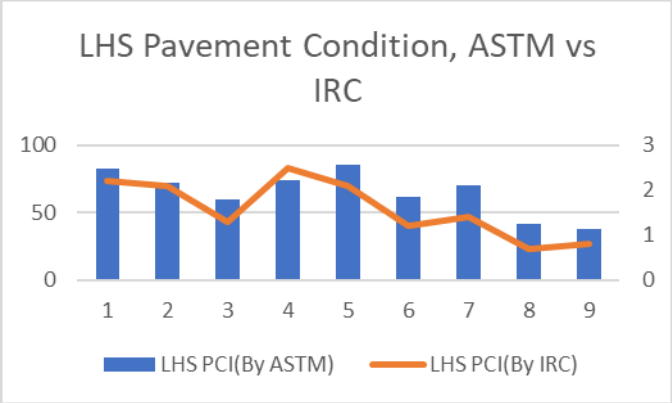

Fig 2 : LHS Pavement Condition, ASTM vs IRC
(DSP Chowk to Dmart)

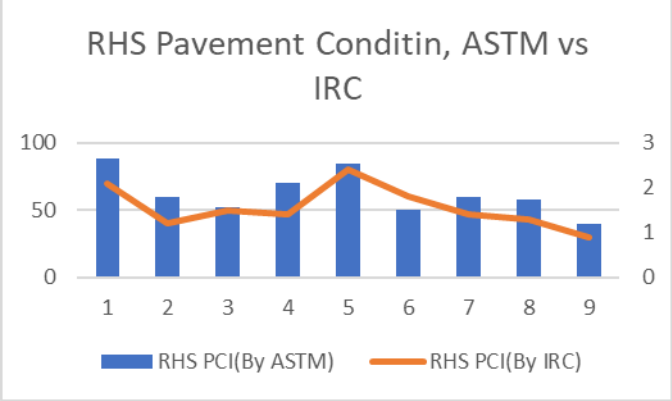

Fig 3 : RHS Pavement Condition, ASTM vs IRC
(DSP Chowk to Dmart)

Table 9: Pavement Condition index (AKASHWANI to DSP Chowk)

AAKASHWANI TO DSP CHOWK:(750m)

Road Length= 750m, Section length=30m, Section width=7m, N=25 , n=9 i=3

SR NO.	SECTION NO.	LHS PCI(By ASTM)	RATING	LHS PCI (By IRC)	RATING	RHS PCI	RATING	RHS PCI(By IRC)	RATING
01	01	83	SATISFACTORY	2.5	GOOD	88	GOOD	2.5	GOOD
02	04	90	GOOD	2.3	GOOD	83	SATISFACTORY	2.1	GOOD
03	07	74	SATISFACTORY	2.1	GOOD	80	SATISFACTORY	2.1	GOOD
04	10	82	SATISFACTORY	2.3	GOOD	70	FAIR	1.1	FAIR
05	13	90	GOOD	1.6	FAIR	85	GOOD	2.1	GOOD
06	16	75	SATISFACTORY	2.2	GOOD	50	POOR	1.7	FAIR
07	19	85	SATISFACTORY	2.1	GOOD	65	FAIR	1.5	FAIR
08	22	42	POOR	1.3	FAIR	58	FAIR	1.3	FAIR
09	25	38	VERY POOR	0.8	POOR	35	VERY POOR	0.7	POOR
AVG. PCI		73	FAIR			68	FAIR		

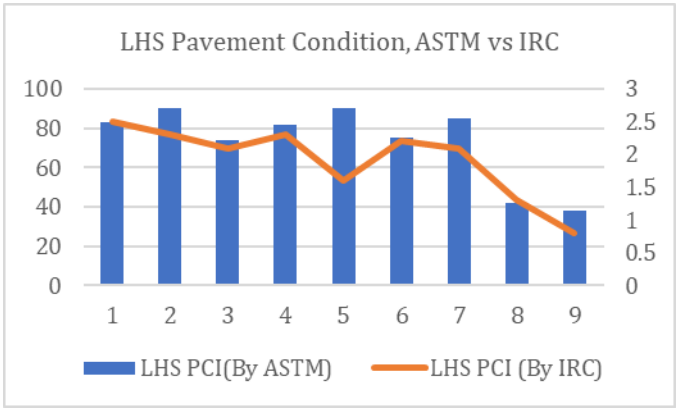

Fig 3 : LHS Pavement Condition, ASTM vs IRC (AKASHWANI to DSP Chowk)

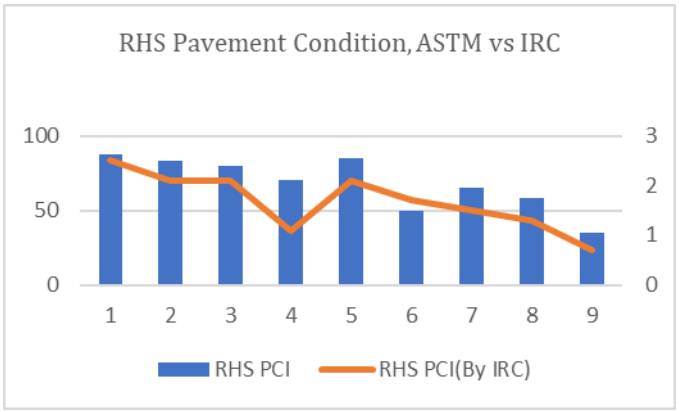

Fig 4 : RHS Pavement Condition, ASTM vs IRC (AKASHWANI to DSP Chowk)

Table 10: Pavement Condition index (MEHRUN ROAD)

MEHRUN ROAD FROM D Mart to G.H. Raisoni College:(3600m)

Road Length= 3600m, Section length=30m, Section width=10m, N=120 , n=14 i=9

SR NO.	SECTION NO.	LHS PCI(By ASTM)	RATING	LHS PCI (By IRC)	RATING
01	01	40	VERY POOR	0.9	POOR
02	10	54	POOR	1.2	FAIR
03	19	45	POOR	0.7	POOR
04	28	84	SATISFACTORY	2.3	GOOD
05	37	70	FAIR	1.6	FAIR
06	46	80	SATISFACTORY	2.1	GOOD
07	55	86	GOOD	2.4	GOOD
08	64	74	FAIR	1.2	FAIR
09	73	94	GOOD	2.3	GOOD
10	82	90	GOOD	2.1	GOOD
11	91	81	SATISFACTORY	2.2	GOOD
12	100	89	GOOD	2.3	GOOD
13	109	68	FAIR	1.2	FAIR
14	118	90	GOOD	2.0	FAIR
AVG. PCI		75	SATISFACTORY		

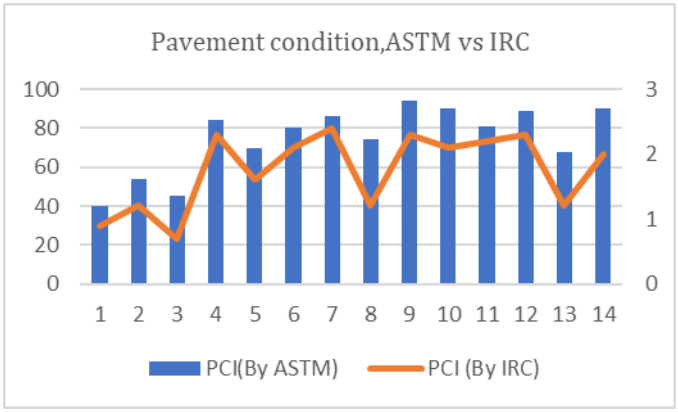

Fig 5 : Pavement Condition, ASTM vs IRC (MEHRUN ROAD)

Table 11: Pavement Condition index (GIRNA TAKI to GOVT.ENGG.BACKSIDE)

GIRNA TAKI TO GOVT. ENGG.BACKSIDE:(500m)

Road Length= 500m, Section length=30m, Section width=7.90m, N=17 , n=9 i=2

SR NO.	SECTION NO.	PCI(By ASTM)	RATING	PCI (By IRC)	RATING
01	01	85	SATISFACTORY	2.1	GOOD
02	03	90	GOOD	2.2	GOOD
03	05	91	GOOD	2.3	GOOD
04	07	84	SATISFACTORY	1.9	FAIR
05	09	95	GOOD	2.5	GOOD
06	11	91	GOOD	2.3	GOOD
07	13	94	GOOD	2.4	GOOD
08	15	90	GOOD	2.2	GOOD
09	17	85	SATISFACTORY	2.1	GOOD
AVG. PCI		89	GOOD		

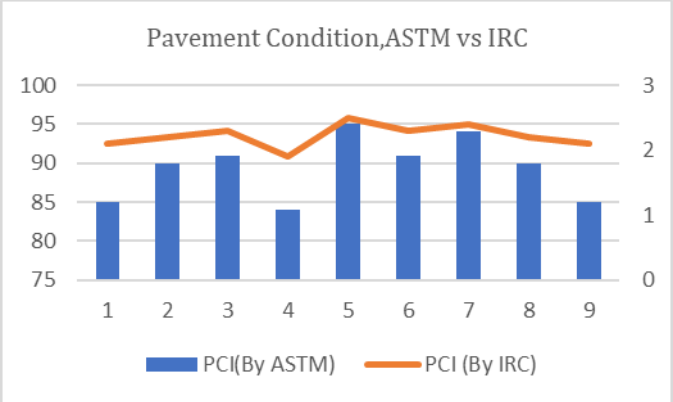

Fig 6 : Pavement Condition, ASTM vs IRC
(GIRNA TAKI to GOVT.ENGG.BACKSIDE)

Table 12: Pavement Condition index
(GIRNA TAKI to DSP CHOWK)

GIRNA TAKI TO DSP:(750m)

Road Length= 750m, Section length=30m, Section width=7.10m, N=25 , n=9 i=3

SR NO.	SECTION NO.	PCI(By ASTM)	RATING	PCI (By IRC)	RATING
01	01	90	GOOD	2.4	FAIR
02	04	96	GOOD	2.7	GOOD
03	07	85	SATISFACTORY	1.8	FAIR
04	10	88	GOOD	2.1	GOOD
05	13	91	GOOD	2.3	GOOD
06	16	86	GOOD	2.0	FAIR
07	19	82	SATISFACTORY	1.9	FAIR
08	22	89	GOOD	2.2	GOOD
09	25	93	GOOD	2.5	GOOD
AVG. PCI		89	GOOD		

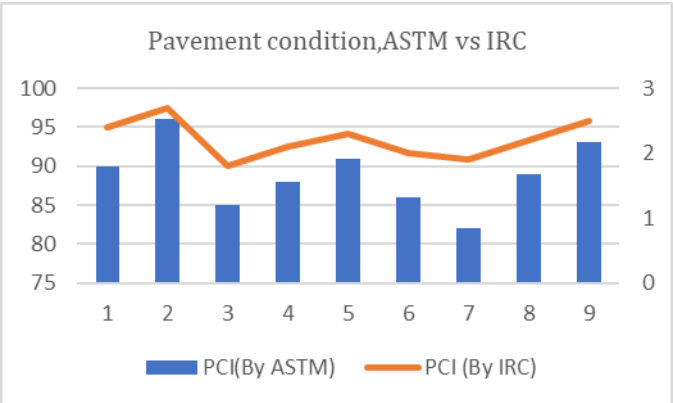

Fig 7 : Pavement Condition, ASTM vs IRC
(GIRNA TAKI to DSP CHOWK)

Table 13: Pavement Condition index
(MOHADI ROAD)

MOHADI ROAD:(3000m)

Road Length= 3000m, Section length=30m, Section width=5.60m, N=100 , n=13 i=8

SR NO.	SECTION NO.	LHS PCI(By ASTM)	RATING	LHS PCI (By IRC)	RATING	RHS PCI	RATING	RHS PCI(By IRC)	RATING
01	03	35	VERY POOR	0.7	POOR	38	VERY POOR	0.6	POOR
02	11	32	VERY POOR	0.9	POOR	39	VERY POOR	0.9	POOR
03	19	38	VERY POOR	0.6	POOR	41	POOR	1.2	FAIR
04	27	52	POOR	1.2	FAIR	55	POOR	1.3	FAIR
05	35	36	VERY POOR	0.7	POOR	40	VERY POOR	0.7	POOR
06	43	48	POOR	1.4	FAIR	50	POOR	1.4	FAIR
07	51	55	POOR	1.6	FAIR	46	POOR	1.3	FAIR
08	59	62	FAIR	1.8	FAIR	67	FAIR	1.2	FAIR
09	67	40	VERY POOR	0.8	POOR	31	VERY POOR	0.9	POOR
10	75	39	VERY POOR	0.9	POOR	34	VERY POOR	1.0	POOR
11	83	64	FAIR	1.2	FAIR	61	FAIR	1.6	FAIR
12	91	71	SATISFACTORY	2.1	GOOD	76	SATISFACTORY	2.3	GOOD
13	99	61	FAIR	1.3	FAIR	60	FAIR	1.5	FAIR
AVG. PCI		48	POOR			49	POOR		

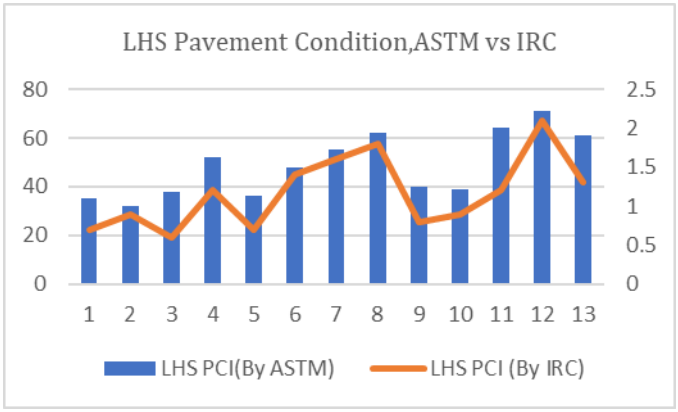

Fig 8 : LHS Pavement Condition, ASTM vs IRC
(MOHADI ROAD)

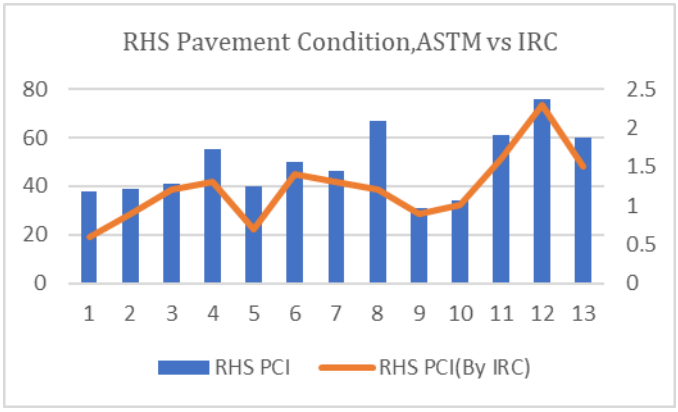

Fig 9 : RHS Pavement Condition, ASTM vs IRC
(MOHADI ROAD)

Table 14: Pavement Condition index (GANESH COLONY ROAD)

GANESH COLLONY:(1500m)

Road Length= 1500m, Section length=30m, Section width=5.10m, N=50 , n=12 i=4

SR NO.	SECTION NO.	LHS PCI(By ASTM)	RATING	LHS PCI (By IRC)	RATING	RHS PCI	RATING	RHS PCI(By IRC)	RATING
01	03	82	SATISFACTORY	2.1	GOOD	88	GOOD	1.8	FAIR
02	07	86	SATISFACTORY	2.2	GOOD	81	SATISFACTORY	2.1	GOOD
03	11	96	GOOD	2.6	GOOD	83	SATISFACTORY	1.9	FAIR
04	15	92	GOOD	2.5	GOOD	70	FAIR	2.0	FAIR
05	19	91	GOOD	2.3	GOOD	91	GOOD	2.1	GOOD
06	23	88	GOOD	2.6	GOOD	94	GOOD	2.3	GOOD
07	27	84	SATISFACTORY	2.1	GOOD	87	GOOD	2.1	GOOD
08	31	87	GOOD	2.0	GOOD	83	SATISFACTORY	2.4	GOOD
09	35	81	SATISFACTRY	2.1	GOOD	73	SATISFACTORY	2.1	GOOD
10	39	90	GOOD	2.4	GOOD	88	GOOD	2.5	GOOD
11	43	75	FAIR	1.8	FAIR	81	SATISFACTORY	2.1	GOOD
12	47	84	SATISFACTORY	2.1	GOOD	90	GOOD	1.9	FAIR
AVG. PCI		86	GOOD			85	SATISFACTORY		

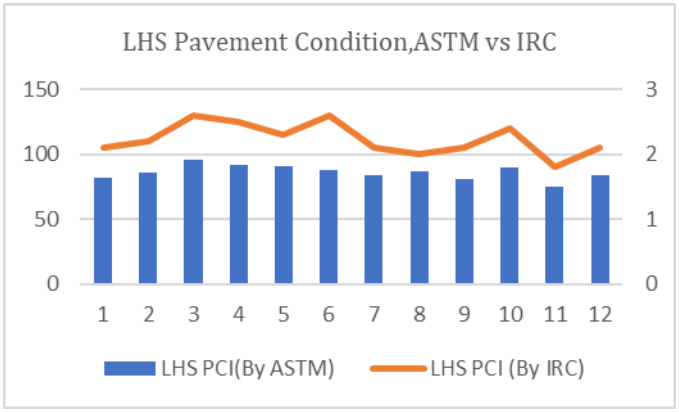

Fig 10 : LHS Pavement Condition, ASTM vs IRC (GANESH COLONY ROAD)

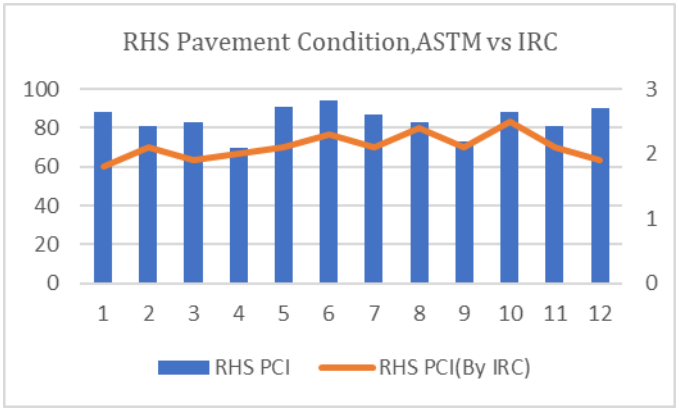

Fig 11 : LHS Pavement Condition, ASTM vs IRC (GANESH COLONY ROAD)

Table 15: Pavement Condition index (PIMPRALA ROAD)

PIMPARALA ROAD:(2500m)

Road Length= 2500m, Section length=30m, Section width=8m, N=84 , n=13 i=6

SR NO.	SECTION NO.	PCI(By ASTM)	RATING	PCI (By IRC)	RATING
01	04	38	VERY POOR	0.7	POOR
02	10	33	VERY POOR	0.6	POOR
03	16	45	POOR	1.4	FAIR
04	22	32	VERY POOR	0.6	POOR
05	28	40	VERY POOR	0.8	POOR
06	34	35	VERY POOR	0.6	POOR
07	40	31	VERY POOR	0.5	POOR
08	46	43	POOR	1.3	FAIR
09	52	60	FAIR	1.6	FAIR
10	58	62	FAIR	1.7	FAIR
11	64	70	FAIR	1.9	FAIR
12	70	74	FAIR	1.9	FAIR
13	76	68	FAIR	2.0	FAIR
AVG. PCI		48	POOR		

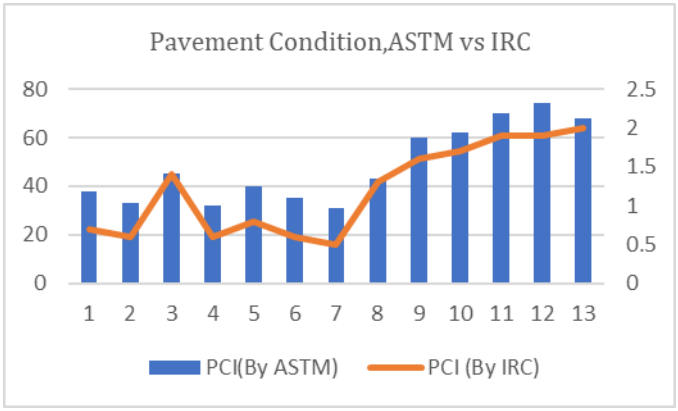

Fig 12 : Pavement Condition, ASTM vs IRC (PIMPRALA ROAD)

Table 16: Pavement Condition index (OLD HIGHWAY)

OLD HIGHWAY:(3000m)

Road Length= 3000m, Section length=30m, Section width=9m, N=100 , n=14 i=7

SR NO.	SECTION NO.	PCI(By ASTM)	RATING	PCI (By IRC)	RATING
01	04	25	SERIOUS	0.5	POOR
02	11	30	VERY POOR	0.6	POOR
03	18	32	VERY POOR	0.7	POOR
04	25	38	VERY POOR	0.9	POOR
05	32	33	VERY POOR	0.7	POOR
06	39	40	VERY POOR	1.0	POOR
07	46	42	POOR	1.2	FAIR
08	53	35	VERY POOR	0.8	POOR
09	60	47	POOR	1.3	FAIR
10	66	50	POOR	1.5	FAIR
11	73	58	FAIR	1.8	FAIR
12	80	63	FAIR	1.9	FAIR
13	87	59	FAIR	1.8	FAIR
14	94	70	FAIR	2.0	FAIR
AVG. PCI		44	POOR		

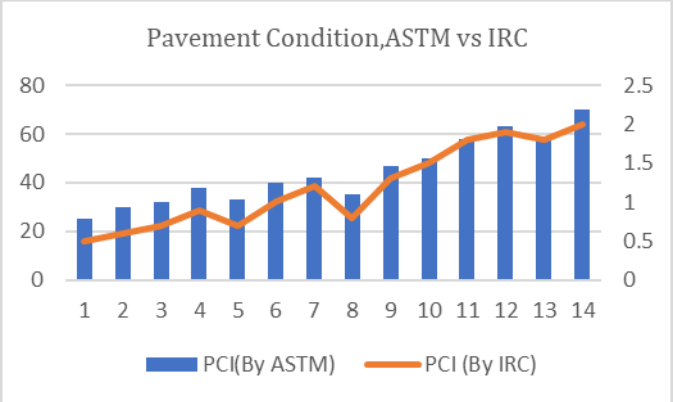

Fig 13 : Pavement Condition, ASTM vs IRC (OLD HIGHWAY)

4. Conclusion-

The objective of the paper is to develop a Pavement Performance Index for rural roads to assess the performance of these roads.

Thus, in this paper various pavement deteriorating parameters were identified through literature review The Objective of the paper is to develop a Pavement Performance Index for rural roads to assess the performance of these roads.

Thus, in this paper various pavement deteriorating parameters were identified through literature review The objective of the paper is to develop a Pavement Performance Index for Urban roads in Jalgaon city to assess the performance of these roads. Thus, in this paper various pavement deteriorating parameters were identified. The similarity in the pavement rating in both the methods is in range from 0.81 to 0.97.

In ASTM method we consider the distress severity, its deduct value, total deduct value and corrected deduct value, but in the IRC Method we only consider the density of the distress on pavement its Rating is given as per IRC 82:2015, then avg of the weighted rating value gives the PCI of the road.

The PCI Rating of the selected roads in the Jalgaon city will vary in between Poor to Very Good (By ASTM), Fair to Good (By IRC).

5. REFERENCES

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