Mean difference analysis between h5-index and groups

Here, each group represents a treatment. Thus we have one factor (statistical usage group) and three treatments (1. Used and described; 2. Used but didn't describe and 3. Didn't use)

Data	
Group	**H5-index**
1	19
1	27
1	32
1	52
2	52
1	53
1	53
1	53
1	63
1	63
2	19
2	19
1	27
2	34
1	52
1	52
1	53
2	81
1	22
1	32
1	32
1	44
3	52
2	53
3	16
3	24
1	26
3	44
1	44
1	52
1	52
1	52
1	53
1	53
1	53

1	53
1	53
1	7
1	27
3	28
1	28
1	28
1	32
1	32
3	34
1	44
1	44
1	44
1	52
1	52
1	52
1	52
3	53
3	63
1	13
1	15
2	18
1	19
3	25
1	25
1	29
1	32
1	32
1	34
2	52
1	9
1	22
1	24
3	25
3	27
3	29
1	32
1	39
3	44
1	52
1	53
3	60

1	15
1	15
3	19
1	22
1	22
1	27
1	29
1	41
1	43
3	44
1	52
1	52
1	53
1	63
2	63
1	72
3	13
3	15
1	15
1	19
1	22
1	24
1	27
1	32
1	32
1	32
1	39
1	44
1	44
1	44
1	52
1	53
1	53
1	53
1	53
2	53
1	63
1	9
1	11
1	12
3	14
3	19

1	20
1	22
3	27
3	29
1	32
2	32
1	41
1	44
1	52
1	53
1	81
1	12
1	15
2	15
1	19
1	22
1	22
1	22
1	23
1	23
1	23
1	25
1	25
1	31
3	41
3	44
1	44
1	44
1	52
3	53
1	63
1	140
1	2
3	10
3	11
1	11
1	15
1	15
1	20
1	22
1	22
1	22

1	22
1	23
1	27
1	28
3	29
1	32
1	38
1	39
3	41
1	51
1	53
1	53
2	53
3	61
1	62
1	63
1	10
3	11
1	15
1	16
1	22
1	22
1	22
1	22
3	27
2	27
3	28
3	29
3	30
3	31
1	36
1	39
3	41
3	41
1	44
1	44
1	44
1	44
3	53
3	53
1	53
1	63

1	63
1	63
1	63
1	66
3	74
3	74
3	96
1	12
1	15
1	15
1	17
3	18
1	18
3	19
1	19
1	19
3	22
1	22
1	23
1	26
1	27
3	31
3	31
1	34
3	39
1	39
1	39
3	44
1	53
1	63
1	81
3	9
3	11
1	13
1	16
1	19
3	20
3	22
1	22
1	22
1	23
1	23

3	26
1	26
1	27
2	27
1	30
3	31
3	32
1	32
3	36
1	39
1	40
1	44
1	44
1	48
1	52
1	53
1	81
3	7
3	9
1	9
1	9
3	11
3	11
1	12
1	12
1	15
1	16
1	16
1	16
1	17
1	17
3	19
1	19
1	19
1	19
1	19
1	20
1	21
1	22
1	22
1	23
1	25

3	27
1	28
1	28
3	34
1	34
1	42
3	44
1	44
1	44
1	44
1	44
3	45
3	46
3	52
1	52
2	53
2	53
1	96
1	6
1	10
3	11
3	13
1	13
1	14
1	14
1	14
1	15
1	17
1	19
1	19
3	21
3	21
1	21
1	21
1	21
2	21
1	22
1	22
2	22
1	23
3	27
3	27

1	27
1	28
1	30
2	32
1	37
2	39
1	42
1	44
1	44
1	44
1	44
1	44
1	44
1	53
1	53
1	53
1	53
3	63
1	63
1	72
3	81
1	86
3	27
1	2
1	10
3	11
3	12
1	12
1	13
1	13
1	14
1	14
1	14
2	14
3	16
1	18
1	19
2	19
1	20
1	21
3	22
1	22

1	22
1	22
1	22
1	24
1	25
1	26
3	27
1	27
3	28
1	28
1	28
3	31
1	31
1	32
1	32
2	32
1	35
3	36
1	36
1	37
3	41
1	41
1	44
1	44
1	44
1	44
1	44
1	52
1	52
1	53
1	53
2	53
1	63
1	63
1	68
1	72
2	72
3	86

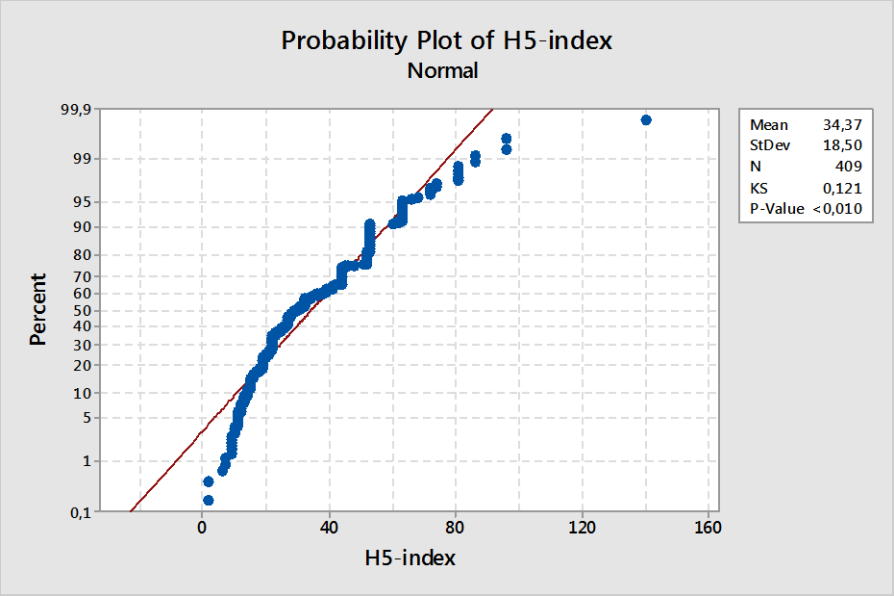
H5-index variable

Normality checking

Significance level: 5%

H_0: Normal distribution
H_1: Non-normal distribution

As sample has 409 subjects (lines in Data table excluding missing values), we use Kolmogorov-Smirnov test.



With a p-value < 0.010, the sample has **non-normal** distribution.

H5-index mean differences test

Significance level: 5%
H_0: Equal means
H_1: Different means

As our variable has a non-normal distribution, a non-parametric test is used. Moreover, our analysis design has one factor and more than two treatments. Thus, Kruskal-Wallis test is suitable. Bellow text is extract from Minitab Tool after the test execution.

Kruskal-Wallis Test: H5-index versus Group

```
Kruskal-Wallis Test on H5-index

Group      N  Median  Ave Rank      Z
1        295   31,00     206,1   0,30
2         26   33,00     235,2   1,34
3         88   28,50     192,5  -1,12
Overall  409              205,0

H = 2,70  DF = 2  P = 0,259
H = 2,71  DF = 2  P = 0,258  (adjusted for ties)
```

With a p-value of 0.259 which is greater than our significance level, we can't accept H_1. Thus, we accept H_0, indicating that the means are equal.