

# [Business statistic](https://assignbuster.com/business-statistic/)

Results This paper aims to reveal the result of the analysis of the 62 unscheduled repair reports randomly selected to give a clear prediction of the total repair cost based on the number of hours of operation of the equipments for A & A Industrial Products. The Statistical Package for Social Science (SPSS) was utilized.
Figure 1
Scatter Plot
Figure 1 shows the pictorial relationship between hours of operation and repair cost. It is shown in the scatter plot the relationship is almost positively perfect as reflected by the r value of . 989 which according to Hurlburt , this coefficient of correlation is “ very high” (376). Also, as seen in Table 1, the r squared was found to be 0. 977. This means that 97. 7% of the changes in the number of hours of operation cause the changes in the total repair cost.
Table 1
Relationship between Repair cost
and Hours of operation
Variables
R
R Square
Repair cost and Hours of operation
. 989
. 977
Likewise, by the use of the regression analysis, it was found that the equation of predicting the repair cost in terms of the number of hours of operation is:
Repair Cost = -22537. 938 + (104. 942)\*(Hours of Operation)
The actual repair cost for each of the number of hours of operation which was recorded is presented below together with the predicted repair cost found using the equation.
Repair Cost
Hours of
operation
Predicted repair cost
11823. 13
291
8000. 13697
13972. 69
307
9679. 20639
11697. 91
309
9889. 09007
15119. 35
312
10203. 91559
14591. 34
325
11568. 15949
16228. 46
354
14611. 47281
16155. 88
360
15241. 12384
17676. 72
367
15975. 71672
19802. 38
394
18809. 14636
20567. 51
403
19753. 62291
18962. 25
405
19963. 50659
18513. 72
405
19963. 50659
19160. 13
410
20488. 21578
20930. 79
419
21432. 69233
19227. 53
432
22796. 93623
20324. 06
433
22901. 87807
23625. 64
443
23951. 29646
21298. 56
450
24685. 88933
23329. 88
464
26155. 07507
23190. 44
465
26260. 01691
21941. 18
467
26469. 90058
24962. 49
478
27624. 26081
26002. 04
488
28673. 6792
25865. 2
495
29408. 27207
30041. 39
506
30562. 63229
32055. 21
520
32031. 81803
31062. 16
522
32241. 70171
31368. 16
524
32451. 58539
31347. 16
525
32556. 52723
34771. 52
528
32871. 35274
35137. 3
534
33501. 00378
32662. 09
536
33710. 88745
35039. 73
547
34865. 24768
36181. 38
548
34970. 18952
35316. 75
554
35599. 84055
35593. 64
558
36019. 6079
35800. 4
568
37069. 02629
36458. 7
579
38223. 38652
39026. 16
587
39062. 92123
40711. 63
589
39272. 8049
41423. 7
591
39482. 68858
41093. 23
593
39692. 57226
41027. 82
595
39902. 45594
39433. 56
606
41056. 81616
40832. 13
607
41161. 758
45175. 04
640
44624. 83868
44624. 5
641
44729. 78052
44994. 35
644
45044. 60603
43652. 54
644
45044. 60603
46024. 74
646
45254. 48971
47684. 44
652
45884. 14074
46191. 67
655
46198. 96626
45513. 51
661
46828. 61729
47420. 04
662
46933. 55913
48078. 79
674
48192. 86119
49139. 47
683
49137. 33774
47934. 56
685
49347. 22142
51414. 33
699
50816. 40716
60686. 7
760
57217. 85932
58862. 21
771
58372. 21955
61650. 91
783
59631. 52161
64142. 73
791
60471. 05632
Reference:
Hurlburt, Russell Understanding Behavioral Statistics
Brooks/Cole Publishing Company, NY USA. 2001
Appendices
Analysis Output
(Linear Regression)
Model Summaryb
Model
R
R Square
Adjusted R Square
Std. Error of the Estimate
1
. 989a
. 977
. 977
2035. 62385
a. Predictors: (Constant), Hours\_operation
b. Dependent Variable: Repair\_cost
ANOVAb
Model
Sum of Squares
df
Mean Square
F
Sig.
1
Regression
1. 080E10
1
1. 080E10
2605. 924
. 000a
Residual
2. 486E8
60
4143764. 448
Total
1. 105E10
61
a. Predictors: (Constant), Hours\_operation
b. Dependent Variable: Repair\_cost
Coefficientsa
Model
Unstandardized Coefficients
Standardized Coefficients
t
Sig.
B
Std. Error
Beta
1
(Constant)
-22537. 938
1127. 020
-19. 998
. 000
Hours\_operation
104. 942
2. 056
. 989
51. 048
. 000
a. Dependent Variable: Repair\_cost