

# [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