

Adstock Rate - Deriving with Analytical Method

Instructions

1. Insert Sales and Advertising
2. Open Solver by going to the Data menu and selecting Solver
If Solver isn't available then load the Add-in.
3. Click Solve

| | | Advertising Before Adstock | Advertising After Adstock | Model Results After Adstock | |
|-------|-------------|-------------------------------|------------------------------|--------------------------------|---------------|
| Sales | | | | | |
| 1 | 670,871 | 0.066 | 0.066 | Adstock Rate | 7.37% |
| 2 | 35,524,494 | 0.116 | 0.121 | α | 22014215.6 |
| 3 | 50,173,057 | 0.116 | 0.125 | β | 42556984.9900 |
| 4 | 46,849,336 | 0.116 | 0.126 | SSE | ##### |
| 5 | 39,246,118 | 0.103 | 0.112 | Correlation | 0.5678 |
| 6 | 21,362 | 0.023 | 0.032 | R-Squared | 0.3224 |
| 7 | 8,831 | 0.023 | 0.026 | | |
| 8 | 17,987 | 0.023 | 0.025 | | |
| 9 | 72,788 | 0.023 | 0.025 | | |
| 10 | 70,691,096 | 0.837 | 0.839 | | |
| 11 | 98,352,774 | 1.163 | 1.225 | | |
| 12 | 96,408,086 | 1.163 | 1.253 | | |
| 13 | 97,663,276 | 1.163 | 1.255 | | |
| 14 | 72,524,082 | 1.362 | 1.455 | | |
| 15 | 44,150,510 | 1.628 | 1.735 | | |
| 16 | 293,596,202 | 1.628 | 1.756 | | |
| 17 | 52,892,091 | 1.628 | 1.757 | | |
| 18 | 91,911,501 | 1.628 | 1.757 | | |
| 19 | 93,892,473 | 1.535 | 1.664 | | |
| 20 | 120,030,002 | 1.535 | 1.658 | | |
| 21 | 50,012,648 | 1.535 | 1.657 | | |
| 22 | 47,577,866 | 1.535 | 1.657 | | |
| 23 | 66,395,702 | 1.568 | 1.690 | | |
| 24 | 108,721,179 | 1.581 | 1.706 | | |
| 25 | 69,263,878 | 1.581 | 1.707 | | |
| 26 | 154,607,585 | 1.581 | 1.707 | | |
| 27 | 71,141,134 | 1.621 | 1.747 | | |
| 28 | 69,654,386 | 1.721 | 1.850 | | |
| 29 | 62,962,474 | 1.721 | 1.857 | | |
| 30 | 147,178,533 | 1.721 | 1.858 | | |
| 31 | 73,797,654 | 1.721 | 1.858 | | |
| 32 | 76,441,432 | 1.542 | 1.678 | | |
| 33 | 69,958,251 | 1.512 | 1.635 | | |
| 34 | 84,762,834 | 1.512 | 1.632 | | |
| 35 | 89,314,294 | 1.512 | 1.632 | | |
| 36 | 73,083,886 | 1.462 | 1.582 | | |

| | | | |
|----|-------------------|--------------|-------|
| 37 | 148,786,415 | 1.442 | 1.558 |
| 38 | 77,341,625 | 1.442 | 1.557 |
| 39 | 70,677,953 | 1.442 | 1.557 |
| 40 | 73,150,392 | 1.409 | 1.523 |
| 41 | 81,245,287 | 1.326 | 1.438 |
| 42 | 69,788,971 | 1.326 | 1.432 |
| 43 | 52,650,999 | 1.326 | 1.431 |
| 44 | 114,397,752 | 1.326 | 1.431 |
| 45 | 74,672,993 | 1.581 | 1.687 |
| 46 | 76,415,745 | 1.581 | 1.706 |
| 47 | 78,010,767 | 1.581 | 1.707 |
| 48 | 150,047,690 | 1.581 | 1.707 |
| 49 | 67,177,030 | 1.050 | 1.176 |
| 50 | 68,384,498 | 0.651 | 0.738 |
| 51 | 70,872,725 | 0.651 | 0.706 |
| 52 | 75,167,242 | 0.651 | 0.703 |
| 53 | <u>51,431,436</u> | <u>0.465</u> | 0.517 |