How to analyse Hampshire's Fixed Camera Data

One sentences summary

Adding up the number of collisions and injuries at these 30 sites in each of the 8 years following the year of installation of each camera shows that both following rising trends, in contrast to falling trends where there are no cameras.

Step-by-step

1/ Extract the data from the singularly unhelpful format in which it is published into the simple and logical format of the Excel sheet provided, noting that doing so not change the data in any way other than making these steps easier to carry out and to understand.

2/ The "annual" sheet of the Excel file shows the data as published in columns A to H, including columns C to H showing in yearly sequence for each site, the annual totals of <u>Fatal and Serious Collisions, Slight Injury Collisions, Personal Injury Collisions, Killed and Seriously Injuries, Slight Injuries and Personal Injuries</u>, from 1990 to 2014.
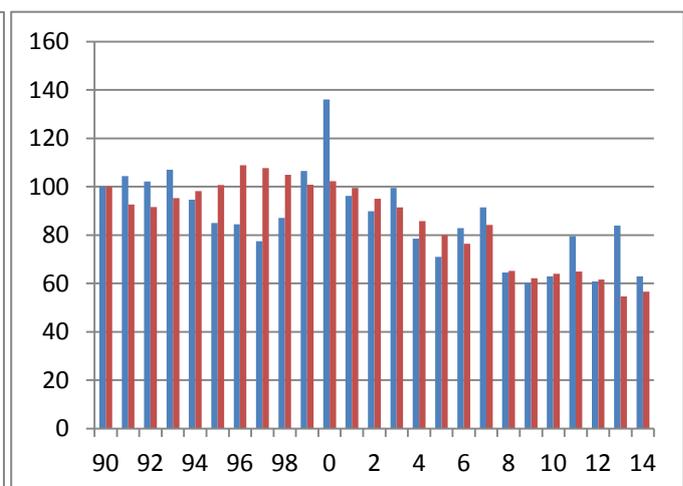
3/ Columns J to AJ contains precisely the same data but transposed from vertical to horizontal format, for example Columns A to AJ of Row 1 shows the same data as the first 25 rows of Column C. There are 6 separate tables of numbers, 3 for each collision severity, 3 for each injury severity. (The Personal Injury Collision data being the sum of the Fatal and Serious collision data and Slight Injury Collision data, may be ignored but is included for the sake of completeness.)

4/ Collision and injury numbers at any one camera site being too small and too much affected by chance to be statistically significant, all such data needs to be summed to reduce these random variations, aka "volatility". Accordingly each table is accompanied by a graph of these totals from 1990 to 2014.

5/ Changes in those totals must of course be compared with what happened <u>elsewhere</u> in Hampshire over the same period. The 2 further tables and graphs provide that comparison, first for Killed and Seriously Injured then for Slight Injuries. (I do not have the corresponding data for collisions from 2012 to 2104 to hand to do the same for collisions but the results would be much the same.
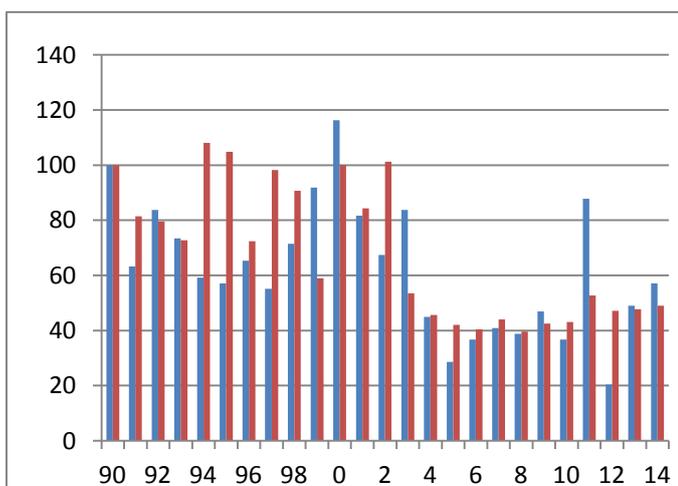
KSI **at sites** compared to **elsewhere**   Slight Injuries **at sites** compared to **elsewhere**

These graphs confirm that reductions in injuries at camera sites were no greater, pro rata, than where there we no cameras.

6/ The difficulty with the above graph is of course that because the cameras were installed at different times over 4, many of the totals shown are affected both by <u>site selection bias</u> and by the <u>effects of camera on collision and injury rates</u>. Fortunately there is a simple and effective way to deal with this (though less accurate when using annual totals and installation dates than it would be using monthly totals and dates.)

7/ All that is necessary is to move each row of data 0, 1, 2 or 3 years to the right so that all installation years are vertically aligned in Column T (Year Zero). Now:
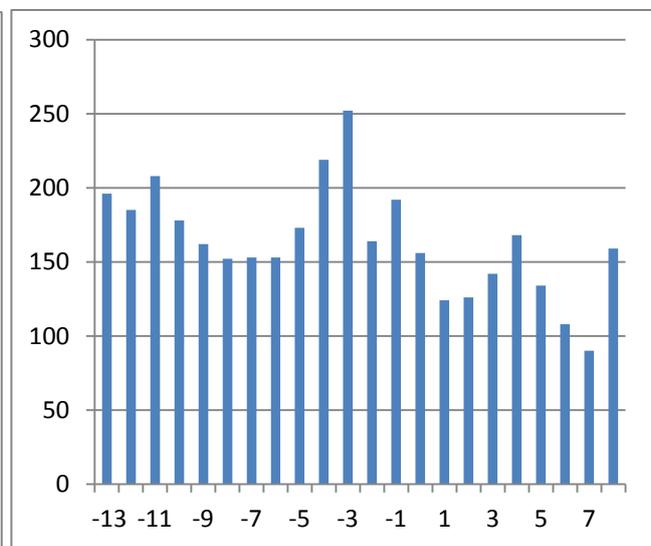
 a/ All <u>selection bias </u>(inherently prior to installation) is confined to years -13 to -1, plus a small but unknown component in year 0 due to cameras having been installed part-way through that year.

b/ All <u>effects of cameras</u> are confined to years 0 to + 8, albeit they start at different times within that year.

c/ All variations <u>not located in time relative to camera installation</u>, <u>are smoothed out and reduced in scale automatically.</u>
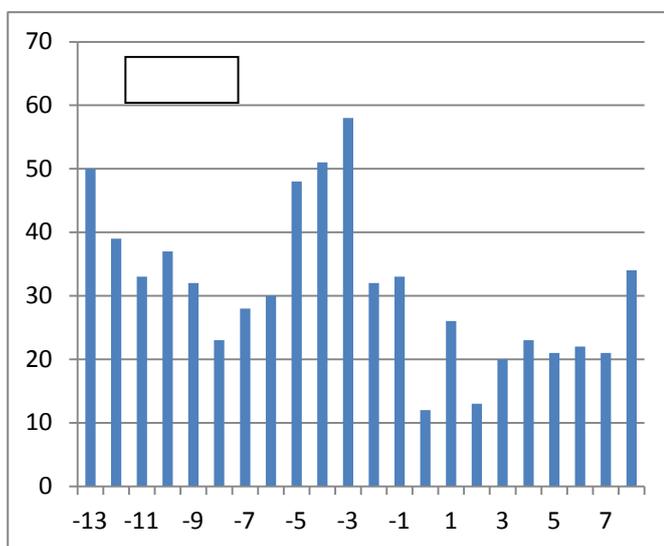
KSI before and after installation   **Slight Injuries before and after installation**

<u>8/ Interpreting these graphs</u>

a/ The numbers are volatile because they are relatively small, but site selection bias is clear in the years before installation, more so for KSI than for Slight Injuries

b/ The steep fall in KSI the year of installation was due in large part to Regression to Mean as Selection Bias ended.

c/ It could not have been much due to camera benefit because numbers rose steeply thereafter, as camera effects increased.

d/ <u>Average KSI in years 1 to 8 was 22.5, no lower than it had been 8 years before installation</u>, immediately before Selection Bias caused numbers to rise rapidly, compared to the falling trend of approximately 4% pa elsewhere over the same period.

e/ <u>KSI followed a steeply rising trend</u> following from Year 1, the first year to be free of Regression to Mean falls

f/ <u>Slight Injuries averaged 131 in the 8 years after installation,</u> <u>a slightly rising trend</u> compared to the falling trend of approximately 4% pa elsewhere over the same period.

These numbers, graphs and this analysis are not matters of opinion or interpretation but plain fact, based entirely on Hampshire Police's own data.

Conclusions

That cameras fail to achieve their stated purpose, of reducing collisions, should in any rational world or police force be sufficient to see them removed.

That they actually lead to more collisions, deaths and injuries than would otherwise occur surely makes it essential that they be removed.

Failing to do so, in the light of this clear evidence, would amount to a serious breach of the duty of care owed by Hampshire Police and its officers and staff to the public they serve.

Idris Francis

Idris.francis@btinternet.com

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