Estimating the Number of Salt and Pepper Dots in a Representative Suburban Bathroom

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Abstract: This study estimates a total of 565,056 salt and pepper dots on the ceramic tile in a bathroom found in a representative US suburban house.

Introduction: The authors take baths almost every day in a bathroom with yellow tiles that display small dots. These dots are referred to in the existing literature as salt and pepper dots (SPD). The authors wanted to know how many SPD there are in the bathroom. The authors dismissed as impractical the idea of manually counting the SPD. An estimation of the number was all that was practical. The authors estimate there are an aggregate 565,056 SPD on the bathroom tile.

Method: The authors first described a one square inch sample area within a bathroom tile randomly chosen from tile in the bathroom (such area the "Sample Area" or "SA"). The number of SPD within the SA was then counted by sight (TC). The authors then determined the total square inch surface area of all tiles in the bathroom (TSA). By multiplying the number of SPD found within the SA by the TSA, an estimate of the total number of SPD within the entire bathroom was determined (EBSPD).

sa x tc x tsa = e*bspd*

Findings: By visual count, 72 SPD were found within the SA. The bathroom uses tile each having a surface area of 24 inches (i.e., 6 inches x 4 inches). By multiplying the number of visually counted SPD by the area of a tile, it was determined that there are approximately 1,728 SPD in each bathroom tile. A manual count found that there are 327 tiles in the bathroom. By multiplying the estimated number of SPD in a single bathroom tile by the actual total number of tiles in the bathroom, an estimate of 565,056 SPD was generated.

Weaknesses: The authors note the non-standard size of a small number of tiles that were cut into sizes smaller than the standard size in order to fit borders of the bathtub. The authors also note that a number bullnose tiles were used in the bathroom and that it is unknown whether those tile are of 24 inch surface area. The study used only one SA. More robust findings would result from the use of more than one SA. Further studies should use a multiple-SA approach.

Conclusion: This study is the first to estimate SPD in a representative US suburban household bathroom. While further studies are needed, the 565,056 estimate is consistent with expectations and determined using a straightforward mathematical approach.