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**SOCK, HORROR - MYSTERY OF MISSING SOCKS IS SOLVED!**

**SCIENTISTS REVEAL WHY SOCKS GO MISSING IN THE WASH AND HOW LIKELY IT IS TO HAPPEN**

**London, UK – 25 April 2016** – Leading scientists have today unravelled the cause of one of life’s greatest mysteries by discovering the secrets of why our socks go missing in the wash.

And the research has led them to devise a mathematical formula to predict the probability of being left in a spin with odd socks after a washing load.

The study, **commissioned by Samsung to launch its innovative new washing machine AddWash™**, found Brits lose an average of 1.3 socks each month (and more than 15 in a year), leaving them with numerous mismatches. With the average Brit living to 81, according to ONS figures, these cleaning catastrophes lead to the equivalent of 1,264 lost socks each over a lifetime, costing the average Brit a whopping £2,528.

In all, these laundry losses mean around 84 million<sup>i</sup> socks go missing around the UK every month. However, sock salvation is in sight. Samsung’s **AddWash™** uses an innovative second door which allows users to simply drop in extra items during the wash cycle, providing a possible end to the problem of forfeited footwear.

To mark the launch, chartered psychologist Dr Simon Moore and statistician Geoff Ellis applied science to socks in a bid to discover the factors which contribute to washday blues and to quantify their findings in a mathematical formula.

Many fanciful theories have been put forward for these laundry losses, including theft by gremlins while Professor Stephen Hawking once speculated they may have fallen victim to spontaneously-created black holes.<sup>ii</sup>

The team's work - which involved a survey of 2,000 people who were happy to discuss their dirty linen in public, plus a series of in-depth face to face interviews - revealed:

- The main factors causing missing socks were the complexity of the washing load – the way the batches are divided up, based on whites/colours/different temperatures – and the number of socks in each wash cycle
- There are many practical reasons for sock loss rather than supernatural disappearances. Research interviews found the common causes included items falling behind radiators or under furniture without anyone realising, stray items being added to the wrong coloured wash and becoming separated from its matching sock, not being secured to a washing line securely so they fall off and blow away – or they are simply carelessly paired up

Their work also helped them devise the following:

### **The Sock Loss Formula**

$$\text{Sock loss index} = (L + C) - (P \times A)$$

The higher the figure, the higher the likelihood of losing socks. For the truly diligent, this formula can also be adapted to work out the probability of losing a sock in a single week by using a calibrated version using statistical modelling software which adds constants thus:

$$\text{Prob} = 0.38 + (0.005 \times L) + (0.0012 \times C) - (0.0159 \times P \times A)^{\text{iii}}$$

**Where:**

**L = Laundry size**

Calculated by multiplying the number of people in the household (p) with the frequency of washes in a week (f)

**C = Washing complexity**

Calculated by adding how many types of wash (t) households do in a week (darks + whites) and multiplying that by the number of socks washed in a week (s)

### **P = The positivity towards doing laundry**

Measured on a scale of 1 to 5 with 1 being 'Strongly dislike doing clothes washing' to 5 which represents 'Strongly enjoy doing clothes washing'

### **A = Degree of Attention**

Which is the sum how many of these things you do at the start of each wash check pockets, unroll sleeves, turn clothes the right way and unrolling socks

Melanie Rolfe, Head of Marketing – **AddWash™** & Home Appliances at Samsung Electronics UK and Ireland said: *"We believe this new study has finally solved the age old mystery of the missing socks. At Samsung we are changing the way we do laundry with the new **AddWash™** machine. No longer will we load the machine with trepidation as we worry whether pairs will be separated forever. Now we can add those loose socks, and indeed any other item of clothing you forgot, in mid-wash to ensure everything stays together."*

## **Psychological Reasons for Sock Loss**

Numerous interviews were conducted around the UK as part of the research to identify key psychological themes that contributing to losing socks in the wash. The following four trends were identified:

### **1. Diffusion of responsibility ("someone else has it covered")**

Simply put, when a task is shared among a group, the tendency is for individuals to assume someone else will take responsibility – so no one does. This was a key theme emerging from many of the households interviewed.

### **2. Visual awareness ("heuristics")**

Heuristics are mental problem-solving shortcuts we use to save time and effort. For example, when we lose a TV remote we search in all the likeliest places such as under cushions. When socks disappear, we simply look in the easiest places and then assume the sock is lost forever

### **3. Confirmation bias**

This occurs where we tend to believe something is true if we want it to be true. So in this case, if we cannot see any odd socks, we convince ourselves there are no odd socks.

#### 4. Behavioural errors of omission and commission

Human error accounts for many accidents, mistakes and mysteries, particularly in the wash cycle and these fell into two main areas:

Omission: where we fail to respond or do something when we should (leaving a sock on a bedroom floor, in the laundry basket or washing machine)

Commission: where we do something when we shouldn't (throwing a lone coloured sock in a white wash, kicking a sock out of sight, balancing a sock drying precariously which might fall behind a radiator)

#### Further findings

The research also found:

- Coloured socks make up the majority of missing socks (55%), compared to other types (including white and patterned items) which make up the remainder
- The average household does 2.45 washes per week which amounts to 127.4 washes per year
- People in the Midlands suffer the highest incidence of sock loss, admitting that 1.64 socks go missing each month, almost 20 socks a year
- More than a sixth of those in the study (16%) reckoned doing the laundry was a waste of their valuable time
- Almost a fifth (19%) say one of their biggest anxieties about washing is colours running
- Men say they do two washes a week while women handle three
- Seven out of ten women said they find the laundry stressful, while just 58% of men say this

The research and survey were undertaken to mark the launch of Samsung's **AddWash™** range, designed to include an innovative door which allows extra items to be added during the wash – whether that's a stray sock you missed, extra softener or a hand-washed garment for final rinsing.

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<sup>i</sup> According to the ONS (25 June 2015), the UK population is estimated to be 64,596,800

<sup>ii</sup> Hawking, S. W. (2010) *The Nature of Space and Time* (Princeton: University Press 2010) 59.

<sup>iii</sup> The values obtained here are all coefficients created by modelling the sample in SPSS statistical modelling software