



## THE DIRTY CASH, DIRTY HABIT REPORT OVERVIEW OF KEY EXPERT FINDINGS AND ANALYSIS

#### INTRODUCTION

Money has often been thought of as dirty. In fact, the association of money with disease transmission has long been established. Even from a historical perspective there have been reports that villagers believed money was somehow responsible for plague epidemics in England<sup>1</sup>. Consequently, villagers would leave money in water troughs filled with vinegar in attempts to decontaminate money<sup>2</sup>.

Supporting this view, a 2012 MasterCard study provided TNS data showing that in 15 countries across Europe, people view cash as the dirtiest in a long list of items that they come into contact with on a day-to-day basis. The study revealed that 75% of people believe that "we should be somewhat or very careful when it comes to handling cash"<sup>4</sup>. In the same survey it was found that 64% of Europeans consider sharing bank notes and coins to be unhygienic or dirty. The only items that ranked higher in terms of poor hygiene were sharing toilet seats, tissues or toothbrushes. This was re-enforced in a second equally comprehensive survey which found that 83% of Europeans agreed that cash contains a lot of bacteria, and that 57% of respondents believed notes and coins to be the least hygienic item over other communal materials polled <sup>5</sup>.

However, to examine these meaning of these findings more deeply, MasterCard set out to explore people's *attitudes* towards dirty cash, and whether they feel it is fundamentally unhygienic – and therefore a social taboo.

### CONSUMERS' VIEWS ON DIRTY CASH

The 12-country study commissioned by MasterCard found that many Europeans believe that not

only is cash dirty, but *handling cash*, bank notes or coins is actually a *dirty practice*. In fact, nearly two-thirds (64%) of Europeans believe that cash is dirtier than public transport, door handles, communal food and vending machines. Most of us (98%) also say we would change our lifestyle to become more hygienic, with the majority of Europeans saying they use card or contactless payment over cash in order to be more hygienic.







#### Other Notable Findings

- **25%** of Europeans are more shocked when people don't wash hands after touching money, than if they don't wash hands before eating (11%)
- Cash was ranked by Europeans as being more unhygienic and dirty than hand rails on public transport or escalators, door handles, shared / communal food, public ticket offices or vending machines
- **75%** of Europeans say we should be cautious of unhygienic cash
- Europeans are open to the idea of using a card or contactless payment instead of cash as four in 10 (39%) are willing to do so to be more hygienic.



• In fact, the majority of Europeans prefer to use a card or contactless payment over cash (66% compared with 34%).

However, while our beliefs and perceptions of cash from a hygiene perspective have evolved, our actions still lag behind.

There is a large gap between what people think and what they do when it comes to handling cash with only 1 in 5 Europeans saying they always wash their hands after handling cash.

- Instead, Europeans are more likely to wash hands doing other things, like touching an animal (47%), travelling on public transport (36%) and sneezing (33%)
- 27% of Europeans NEVER wash their hands after touching money

Country	Believe Cash is Dirty	Always wash their hands	Say-Do Gap
Hungary			-58%
France		19%	
Spain	69%	17%	-52%
Denmark	61%	11%	-50%
Turkey	86%	40%	-46%
United Kingdom	57%	11%	-46%
Greece	69%	29%	-40%
Romania	74%	35%	-39%
Czech Republic	54%	19%	-36%
Germany	45%	14%	-31%
Croatia	68%	37%	-31%
Poland	51%	22%	-29%





Across all markets surveyed, there is a sizable say-do gap when it comes to believing cash is a dirty and doing something about it. This is more prevalent in Hungary, where there is a 58 point gap between people believing cash is dirty and people who wash their hands after handling it (just 26% always wash their hands after handling cash). This hygienic paralysis could be a symptom of out sight, out of mind. Just one-in-five (21%) of Europeans say they are bothered by the idea of dozens of strangers handling their cash before they do. When asked why they aren't concerned, Europeans say it's because it's something out of their control or that they don't pay it any attention.

In spite of these current feelings towards handling cash and washing up afterward, there is a sense among Europeans that more can and should be done. The vast majority said they're willing to make at least a small change in their everyday lives to be more hygienic.



### THE HUMAN VIEW: DIRTY CASH AS A DIRTY HABIT

# Knowing cash is so dirty, psychologist Donna Dawson examined why people are so reluctant to break this bad habit.

Donna Dawson notes that "Money", in the form of tangible banknotes and coins, is the biggest form of *visible* economic power and of individual success that we have; it is viewed by most people as a 'positive' thing, a life-enhancer. It is therefore hard for people to make and keep any negative





associations with money. So, the idea that there are "germs" on banknotes and coins - germs that might possibly hurt us - is not an idea that stays with us, just as we can't imagine the *germs* staying with us. As the money goes, so the germs go. We cannot relate to something that we cannot see. Unless, of course, the person passing us the money is dirty and unkempt, and has dirty hands: then the thought that this person's lack of hygiene could pass germs on to us becomes more tangible.

Therefore, the reason for the often large gap in the MasterCard survey between what we say and what we do is a lack of "connection": we may recognise that money collects germs, but we do not connect disease or illness to the handling of money. We can envision the spreading of germs through sharing a toothbrush, tissue or toilet, but cannot do the same for money, a source of germs that we've never previously thought about. And as money is too important to us, rather than experience a conflict about it, it is easier to downgrade and dismiss our fears. In this way we ignore any "social taboo" that might come with passing on cash full of germs, where we wouldn't pass on a dirty tissue, for example.

It is similar to worrying about the germs in the air we breathe or in the water that we drink – we can't see them, therefore we have no control over them. And why worry about something over which we have no control?

#### The Human Need for Control Over The Habit Of Dirty Cash

The idea of being able to exercise control in life is a hugely motivating factor for human beings. With a sense of control, comes a sense of mastery over our own personal universe and destiny, which in turn brings self-confidence, peace-of-mind and a sense of security.

However, a sense of control is often an *illusion* – there is much that we *can't* control, such as the germs that we cannot see (40% of those surveyed recognised that they had no control over who handled their money beforehand). As a consequence, many of us try *not* to worry about the things that we can't control (such as the 38% surveyed who claim to "never think about it"). Or we give it some thought, without letting it take over (such as the 45% who believe that others should be "somewhat considerate/precautious" when handling money). Otherwise, too much mental energy, stress and anxiety would be wasted in life - it is more important to save our energy for the things that we *can* influence.

So while 64% of us do think money is "dirty" when the facts are pointed out to us, only 21% are bothered by the fact that dozens of others have handled our cash before us, and only 5% are truly "shocked" by this. This is because we quickly forget what we can't see and can't control: the small worries become forgotten, and we move on to bigger, more substantial worries instead. The facts about dirty money will worry us for a while, but this worry will quickly sink down on the list of our "worry priorities" to a much lower point - it really is a case of "out of sight, out of mind", making it easy for us to excuse or simply ignore what it fundamentally a dirty habit.

### **Creating Good Habits from Bad – The Psychological Perspective**

Donna Dawson suggests that if shown a way to be in control of a situation that is embarrassing or worrying, without too much personal inconvenience, most people would try it. In this case, avoiding the germs that collect on money can only realistically be controlled by not handling the money at all.





Most people surveyed said that they were willing to make a small change in their daily lives in order to become more "hygienic". The solution, in fact, is switching to card/contactless payment, and two-thirds of those surveyed agreed. The four steps from moving from a **bad habit** (handling dirty money), to a **good habit** (not handling it all), are these:

- 1) The person has to first recognise that it *is* a "bad habit" (money is dirty, and leads to contact with germs)
- 2) The person has to *want* to do something about it (germs could possibly lead to illness, and handling money also makes the person appear unhygienic and a possible risk to others. Therefore both health and reputation are on the line with individuals in breach of basic social etiquette by knowingly passing along germs to others, where they wouldn't in other "germ" situations, such as sharing a used tissue or toothbrush.)
- 3) The person has to be offered a reasonable solution (card/contactless payment)
- 4) The person needs to make the change (by foregoing cash payments and switching to card/contactless payment)
- 5) The person needs to *reinforce* the change by repeating the use of cashless payments, so that positive actions become ingrained and like second-nature. The "bad" habit then becomes a "good" habit.

In conclusion, our human need to be in control and to be socially accepted by others can lead us to accept solutions to perceived problems when they are shown to be realistic and achievable solutions, and which do not in themselves create new problems or conflicts.

#### THE SCIENTIFIC VIEW: DIRTY CASH AS A DIRTY HABIT

**Dr Jim O'Mahony**, lecturer in Biological Sciences at The Cork Institute of Technology, Ireland, provides further context on dirty cash, noting the many global studies in recent years have proven beyond doubt that bank notes and coins carry bacteria and other microbes<sup>1,5,6,7,8,9,10</sup>. Using the most up to date scientific techniques, researchers in the US have identified over 3,000 species of bacteria on a set of one dollar bills<sup>10</sup>. Many of these may be harmless but in some cases bacteria that cause gastroenteritis and other unwanted diseases have been isolated from cash<sup>1,5,6,7,8,9,10,11</sup>. The obvious conclusion from this is that we should be more cautious in relation to handling money. Even more so perhaps, it could be argued that we have a responsibility to do so as many of the isolated bacteria are shown to be resistant to commonly used antibiotics<sup>1,8,10</sup>. By frequently handling cash we may be unwittingly providing a mechanism that allows infectious drug resistant organisms to pass on these properties to other germs. This is unwise, and sharing potentially contaminated currency with others should be seen as unsafe practice, especially in high-risk settings, as this effectively facilitates the spread of germs in society.

The main disadvantage of using cash from a hygiene perspective is that we are completely unaware of how often notes and coins have been handled and more importantly by whom. Added to this is the fact European banknotes are made from pure cotton fibres (identical to those used in textile manufacture)<sup>12</sup>. Given that cotton is quite a thin material with many microscopic crevices and pores, it is perfectly suited to attracting germs coated in the form of dirt, dust and grime which accrue from frequent handling. Many of these microscopic germs can persist for as long as 3 weeks<sup>1</sup> allowing





ample time for them to be passed onto other members of the public. The grime on old notes is mainly made up of sebum (an oily secretion found on skin and in earwax). Bacteria can break this down and use it to survive on surfaces and materials. In a recent study it was found that the average banknote contains 26,000 bacterial colonies<sup>9</sup>. With this in mind there should be an increased awareness that handling cash could be seen as a potentially hazardous practice in line with other precarious activities such as touching toilet door handles, handling communal food, holding escalator rails etc.

#### Creating Good Habits from Bad – The Scientific Solution

It is a fact of life that we share many surfaces / materials with others on a daily basis and for the most part we don't suffer any negative consequences. However, increasing public awareness and advocating proactive measures to reduce disease transmission should be encouraged. As mentioned already, the European study quoted above found 75% of Europeans believe people should be "somewhat or very careful when handling cash", yet in some countries it was found that over 50% of people do not always wash their hands after handling cash. This would illustrate that the majority of people acknowledge that spending cash could be perceived as being hazardous yet on a practical basis people are disinclined to adopt basic hygiene practices. A more successful approach may be to encourage the use of more cashless transactions. This would seem like a logical approach given that already 66% of Europeans prefer to use a card or contactless payment over cash, according to the MasterCard survey. The biggest advantage (hygienically) of using debit and credit cards is that the individual is in complete control. The card material is much less porous, is almost always in the possession of the user and can be quickly sanitized if required.

#### References:

- 1. Gabriel EM, Coffey A, O'Mahony JM. Investigation into the prevalence, persistence and antibiotic resistance profiles of staphylococci isolated from euro currency. J Appl Microbiol. 2013 Aug;115(2):565-71
- 2. Dr Jim O'Mahony, lecturer in Biological Sciences at The Cork Institute of Technology, Ireland
- 3. Research conducted by Toluna on behalf of MasterCard, March April 2014. 9.923 Europeans over the age of 18 polled across Europe
- 4. Research conducted by TNS on behalf of MasterCard, December 2012. Approximately 15,000 respondents from across Europe.
- 5. Basavarajappa KG, Sridhar Rao PN, and Suresh K. Study of bacterial, fungal, and parasitic contamination of currency notes in circulation. Indian J Pathol Microbiol 2005;48:278–279.
- 6. Boyer J. Dirty money and disease. Sci Am Mon 1921;4:344–346. El-Dars FMS and Hassan WMH. A preliminary bacterial study of Egyptian paper money. Int J Environ Health Res2005;15:235–239.
- 7. Hosen MJ, Sarif DI, Rahman MM, et al. Contamination of coli- forms in different paper currency notes of Bangladesh. Pak J Biol Sci 2006;9:868–870.
- 8. Kumar JD, Negi YK, Gaur A, et al. Detection of virulence genes in Staphylococcus aureus isolated from paper currency. Int J Infect Dis 2009;13:450–455.
- 9. Vriesekoop F, Russell C, Alvarez-Mayorga B, Aidoo K, Yuan Q, Scannell A, Beumer RR, Jiang X, Barro N, Otokunefor K, Smith-Arnold C, Heap A, Chen J, Iturriage MH, Hazeleger W, DeSlandes J, Kinley B, Wilson K, Menz G. Dirty money: an investigation into





the hygiene status of some of the world's currencies as obtained from food outlets. Foodborne Pathog Dis. 2010 Dec;7(12):1497-502

- 10. Angelakis E1, Azhar El, Bibi F, Yasir M, Al-Ghamdi AK, Ashshi AM, Elshemi AG, Raoult D. Paper money and coins as potential vectors of transmissible disease. Future Microbiol. 2014 Feb;9(2):249-61
- 11. http://online.wsj.com/news/articles/SB10001424052702303456104579489510784385696?mod=WSJ\_hp\_RightTopStories&mg =reno64-wsj
- 12. http://ecdc.europa.eu/en/healthtopics/antimicrobial\_resistance/basic\_facts/pages/factsheet\_experts.aspx?preview=yes&pdf=y es
- 13. https://www.ecb.europa.eu/euro/banknotes/html/environment.en.html