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# 1 **Social media is not the ‘silver bullet’ to reducing household food** 2 **waste, a response to Grainger and Stewart (2017)**

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## 9 **Abstract**

10  
11 In our reply to Grainger and Stewart (2017) we concur with their observation on the need for  
12 evidence-based synthesis in examining the efficacy of behaviour change interventions. We  
13 argue that our paper (Young et al. , 2017) makes a contribution to the body of knowledge on  
14 behaviour change and in so doing it provides an important piece of the jigsaw in  
15 understanding the influence of social media on food waste behaviour.  
16  
17

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19  
20 The research team are grateful to Innovate UK, UK Economic and Social Research Council  
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23 the data or writing of this paper.  
24

## 25 **1. Introduction**

26 Grainger and Stewart (2017) highlight several important points in their reply to our paper  
27 (Young, Russell, 2017). In our response we address the key points raised in relation to  
28 methods, evidence-synthesis and conclusions as to whether the use of social media is an  
29 effective intervention strategy to reduce household food waste. We are grateful to these  
30 scholars for their engagement with our research and we are happy to be able to respond by  
31 providing more detail on the points raised.  
32

## 33 **2. Methods: Sample size, effect size, and self-reported data**

34 Grainger and Stewart (2017) state that “From the data that are presented in Young et al.  
35 (2017) we would conclude that there was no effect of the interventions and that there was no  
36 or a minimal effect of time on food waste behaviour. In addition, to a relatively small sample  
37 size (n = 2018) and small effect size the reliance on self-reported measures of food waste  
38 increases the risk of bias (as acknowledged by Young et al. 2017).”

39 Whilst we agree that a larger sample size is almost always desirable, our sample of 2,018  
40 respondents is arguably a sufficient basis to generate a robust set of results. In this context,  
41 we note that out of the 390 individual studies that have been analysed in the evidence-  
42 syntheses mentioned in Grainger and Stewart (2017), only 23 have employed a larger  
43 sample when compared to our study (see Table 1). In the context of consumer research,  
44 meta-analytic reviews show that very few consumer studies (less than 10%) have sample  
45 sizes greater than 500 (Peterson et al. , 1985). Hence, we argue that our sample size is  
46 ample to demonstrate the effect of the food waste intervention on the targeted consumer  
47 population.

49 Table 1: Sample sizes of studies used in evidence-syntheses mentioned in Grainger and  
 50 Stewart (2017).

Evidence-syntheses mentioned in Grainger and Stewart (2017)	Focus of social media interventions	Studies employing larger sample than n=2,018
Barak et al. (2008)	Psychotherapeutic interventions in the context of e.g. depression, tinnitus or binge drinking	01 out of 156 studies
Brouwer et al. (2011)*	Healthy lifestyle promotion	13 out of 64 studies
Davies et al. (2012)*	Physical activity	01 out of 34 studies
Kuijpers et al. (2013)*	Patient empowerment in the case of cancer survivors	00 out of 19 studies
Maher et al. (2014)	Health-related behaviour change more generally	03 out of 10 studies
Wantland et al. (2004)	Web-based therapies of chronic illnesses	01 out of 22 studies
Webb et al. (2010)*	Health-related behaviour change more generally	04 out of 85 studies

51 \*mentioned in Short et al. (2015)

52 We agree with Grainger and Stewart's (2017) observation that *p* value and effect size are  
 53 relevant, and for this reason have reported both statistics in our paper. Furthermore, our  
 54 reported effect size of .01 is a small effect. We respectfully disagree, however, that this small  
 55 effect size indicates no effect. It is not uncommon to find small effect sizes in consumer  
 56 research (Peterson, Albaum, 1985, Wilson and Sherrell, 1993), but a small effect is not  
 57 equivalent to no effect. Given the widespread use of laboratory studies and student  
 58 participants in consumer research (Peterson, Albaum, 1985, Wilson and Sherrell, 1993), we  
 59 argue that our finding of even a small effect from a field study with participants who are  
 60 consumers is a unique and important finding.

61 As we note in our paper, the use of self-reported behaviour is a limitation of our research.  
 62 Yet, this in and of itself is not a reason to discount the findings of this study. Indeed, Wilson  
 63 and Sherrell (1993) show that only 6% of consumer behaviour studies observed behaviour.  
 64 The pragmatic challenges of observing food waste behaviour meant that it was not possible  
 65 in this study and we therefore relied on self-reported behaviour.

66

### 67 3. Evidence-synthesis

68 On the second point, Grainger and Stewart (2017) state that "Rather than suggesting that  
 69 social media cannot be used as an effective behaviour change agent in the realm of food  
 70 waste we suggest that Young et al. (2017) well illustrates the importance of evidence-  
 71 synthesis. The lack of behaviour change from a relatively small sample of people in a study  
 72 with an untargeted intervention provides one small piece of the jigsaw."

73 We agree that evidence-synthesis is crucial in assessing the overall advancement of a topic  
 74 such as food waste interventions. Our social influence approach was based on an evidence-  
 75 synthesis by Abrahamse and Steg (2013). Our aim was not to attempt to provide one  
 76 definitive answer to the question of the effectiveness of social media interventions and thus

77 we agree with Grainger and Stewart (2017) that our study can and is one part of a larger  
78 jigsaw.

79 We do contend, however, that our study is arguably one of the more relevant parts of the  
80 jigsaw of the effectiveness of food waste interventions. Our study provides an input to the  
81 broader social media intervention evidence mentioned by Grainger and Stewart (2017). In  
82 particular our study is one of few field experiments as opposed to those conducted in  
83 laboratory conditions. We argue that laboratory experiments can be valuable in identifying  
84 behavioural effects but they cannot really assess the effectiveness of social media in getting  
85 people to reduce waste in practice (Peterson, Albaum, 1985, Wilson and Sherrell, 1993). We  
86 would therefore encourage and invite further field-based research in this area, including  
87 replication studies that further test the robustness of our findings.

88

#### 89 **4. Social media as an effective intervention for reducing food waste**

90 Finally, Grainger and Stewart (2017) state that “The jury is still out on the potential for social  
91 media to influence behaviour change and hence reduce food waste but it is imperative that  
92 evidence still be collected and a variety of intervention strategies assessed. Disregarding  
93 social media as a potential effective intervention on the basis of any single study would be  
94 irresponsible and should not be advocated.”

95 In responding to this point, we argue that research is about building up a strong evidence  
96 base and there is a need to report findings both positive and negative (Cumming, 2014). In  
97 our paper we have presented the findings of a field study and have been explicit about the  
98 methods and results. In contributing to the evidence on the effectiveness of food waste  
99 reduction interventions our research makes a contribution to this body of knowledge. We  
100 highlight the strengths and the limitations of our study in our paper (Young, Russell, 2017)  
101 and in this response and we maintain that the results of our field experiment show that social  
102 media was not a silver bullet in influencing household food waste reduction for the  
103 participants in our study.

104

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