

## **Social media and academic identity in food research**

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## **Abstract**

**Purpose:** With increasing emphasis on public engagement and scientific communication and dissemination, scientists are increasingly required to redefine their academic identity. Theoretical frameworks of academic identity and social media functionality were used to explore food researchers' attitudes towards social media.

**Methodology:** An online study was carried out with 80 scientists working in publicly-funded food research.

**Findings:** Commitment to scientific rigour, disseminating science to society, and being part of an academic community were important facets of academic identity and shaped participants' perceptions of social media functions. Functions offered by social media appeared were most favourably viewed by the food research community for academic peer engagement and academic community building.

**Social implications:** Cultural and organisational changes are needed to mobilise food researchers to view public engagement as an important facet of the academic identity.

**Originality/value:** The current study adds to the theoretical literature on academic identity and social media functionality by providing empirical evidence outlining how scientists working in publicly-funded food research feel about engaging with social media within their professional role.

## **Keywords**

Academic identity; food; public engagement; science governance; social media

## **Introduction**

In the past, controversies such as public rejection of genetically-modified (GM) foods and crops led to a ‘crisis of trust’ amongst the public. There has since been recognition that agri-food science and innovation needs to be morally and socially responsible, transparent and inclusive as reflected in recent science governance frameworks and movements (Owen et al., 2012, Glerup and Horst, 2014). These macro-level changes in science policy and governance have an impact at the micro-level. As governance principles become embedded in science through national and institutional research policies, funding stipulations and reporting requirements, researchers are required to consider, negotiate and potentially redefine the responsibilities and duties associated with their profession (Ylijoki and Ursin, 2015, Henkel, 2005). In particular, there is an increased onus placed on food researchers to make their science more accessible to diverse audiences, and also to engage, interact with and listen to these audiences. Given its direct application to society, when it comes to food research, science communication and public engagement is particularly important (Rowe and Alexander, 2017). Scientists working in this area are all too aware of the pressure to demonstrate how their research contributes towards the development of a global food system which is sustainable, empowers consumers, engages stakeholders, is business-friendly and economically viable, and which tackles societal challenges (International Food Policy Research Institute, 2016). It is likely that food researchers particularly feel the effects of recent macro-level changes in science governance. Policy-makers and research funders are particularly attuned to the need for effective science communication and public engagement when it comes to food-related science and innovation (Coenen et al., 2015). This follows decades of intensive media and public scrutiny of issues related to food safety (e.g. BSE-CJD), new food technologies (e.g. GM), fraudulent activities (e.g. horsemeat adulteration) and nutrition-related stories (e.g. links between common foods and cancer and heart disease).

Despite such expectations, science communication and public engagement activities often continue to rank low on a researcher's list of professional priorities (McClain and Neeley, 2015) and food scientists have previously indicated their reluctance to communicate with the public about complex science-related messages (Frewer et al., 2002) Willingness to adopt new roles depends on one's perception of their professional identity (Marshall et al., 2018, Degn, 2018, Thurlow and Mills, 2009). Beliefs held by the researcher regarding what it means to be a researcher will ultimately determine the responsibilities they are willing to undertake in their day-to-day work. Past work has identified a variety of facets deemed important to the identity of researchers such as academic discipline, career stage and values such as academic freedom, quality commitment, and prestige/success (Henkel, 2005, Degn, 2018, Regan and Henschion, 2019). Shaped by personal traits and cognitive beliefs as well as the social context, identity is argued to be multi-dimensional, dynamic, ever-changing and always in tension (Blackmore and Kandiko, 2011). Accordingly, academic identity holds different meaning for different scientists and indeed can change for individual scientists over time as they adapt and respond to social experiences and institutional changes (Thurlow and Mills, 2009, Henkel, 2005). With modern-day academics expected to simultaneously act as researcher, teacher, project manager, administrator, mentor, communicator and entrepreneur, willingness to engage in these roles will largely be determined by beliefs regarding academic identity (Regan and Henschion, 2019). The current study is particularly interested in exploring food researchers' willingness to communicate and engage beyond academic circles, given the particular emphasis placed on this outreach role within food research.

There has been much discussion about the role of social media in bridging the gap between science and the public specifically in the area of food (Rutsaert et al., 2013, Henderson et al., 2017). In the last decade, social media has brought about new socio-epistemic spaces where social boundaries are less clearly defined and opportunities for

interactions spanning different sections of society are more likely (Collins et al., 2016). On social media platforms, different sections of society co-exist – scientists, policy-makers, industry, and the general public; thus, there is better potential to interact freely and openly with one another than through more traditional communication forums. Kietzmann et al. (2011) developed a honeycomb framework (see Figure 1) outlining the seven functional building blocks of social media: identity, conversations, sharing, presence, relationships, reputation, and groups. The authors argued that these seven functions collectively embody the social media user experience, with individual social media sites varying in the degree to which they favour each of the functions. These infrastructural and technical functions allow users to exchange information synchronously, share content, have conversations, give feedback, form communities and build relationships – all important features which embody the principles of inclusivity and engagement that shape current science governance frameworks (Kietzmann et al., 2011; Smith, 2015). Social media allow scientists to communicate instantaneous and direct messages to a broad audience, but perhaps more importantly; these platforms enable previously passive receivers of information to become active members in conversations around science. Consequently, it can be argued that these functional building blocks which define social media facilitate the ‘new’ roles envisioned for researchers in current science governance frameworks – including making their science more accessible and engaging with actors outside of academia in discussions around science.

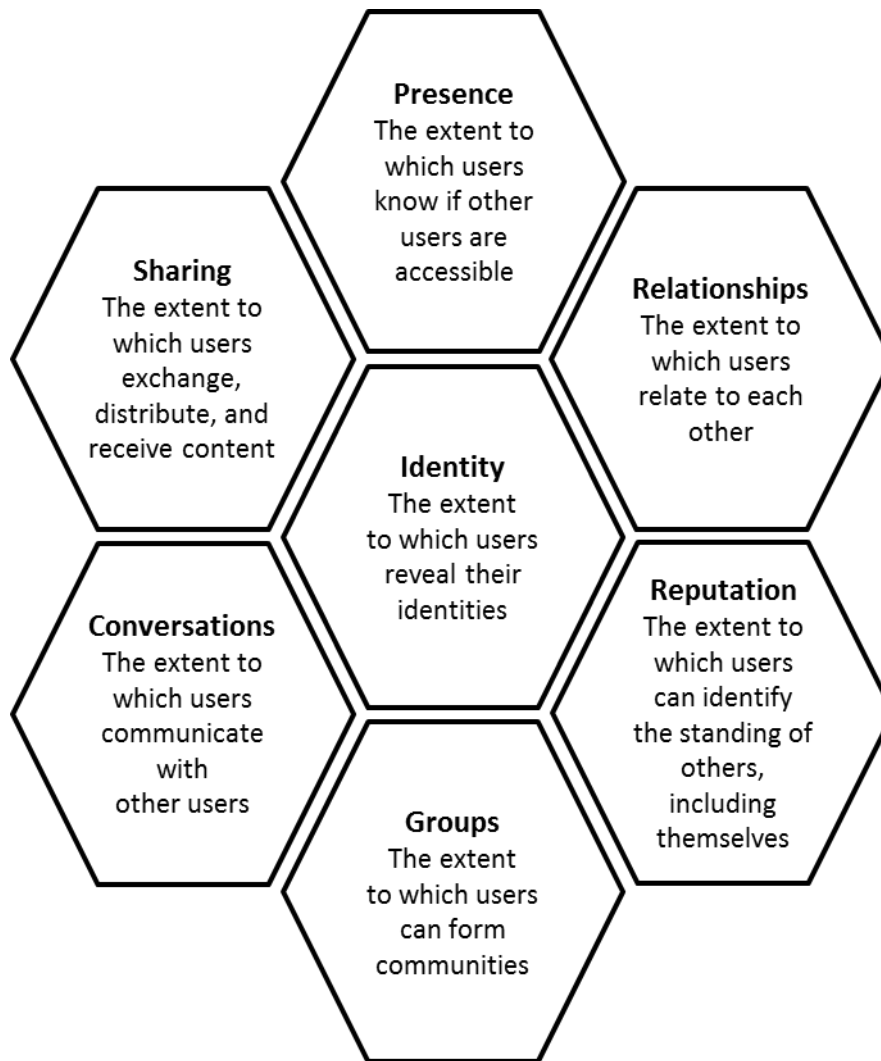


Figure 1: The honeycomb framework outlining the seven functional building blocks of social media (taken from Kietzmann et al., 2011).

While social media may indeed provide the opportunity for researchers to embrace these new roles, these platforms also offer an opportunity for scientists to express their chosen identities as researchers; identities which may not always revolve around communication and outreach. Individuals can create and maintain personas online in a conscious, intention-driven process and with a specific imagined audience in mind. For example, the individual purposefully thinks about the images they choose to post, the topics they disseminate and discuss, the opinions they offer and the types of people they engage

with online (Kietzmann et al., 2011; Lupton, 2018). Social media provide scientists an opportunity to create a strategically developed online persona where they can publicly showcase valued aspects of their academic identity (Lupton, 2018, Marshall et al., 2018). For some scientists who view communication and outreach to be an important part of their role, social media will be viewed as a very useful tool to express and fulfil this part of their academic identity. For other scientists, social media may be embraced to build their scholarly profile and engage in academic networking, tapping into the ‘prestige economy’ associated with academia (Marshall et al., 2018, Collins et al., 2016). On the other hand, tensions may arise for some scientists as they consider where social media fits within their profession – if at all. Exploring scientists’ engagement with social media, and how they embrace the seven functional building blocks, offers us insight into how they view themselves as scientists and the perceived roles and responsibilities that they view as important for their profession. The current study uses the framework developed by Kietzmann et al. to explore scientists’ perceptions of the role of social media in food research. Specifically, the study maps how participants discuss the seven functions of social media and how these functions may be viewed to support or threaten the different facets of academic identity perceived as important by the researchers.

## **Materials and Methods**

### ***Design***

The data analysed in the current paper was collected as part of a broader project exploring food researchers’ views and attitudes towards measuring and demonstrating research impact. This project employed an online engagement platform (VIZZATA™) which facilitated the collection of both quantitative data (through an online survey function in the platform) and qualitative data (through a ‘comments and questions’ forum on the platform, and through the

inclusion of open-ended questions)<sup>1</sup>. Data relevant for analysis in the current study came largely from the open-ended questions related to social media. All participants (users and non-users) were asked about the barriers and motivators for using social media platforms. Current users were asked to elaborate on their use of social media, their motivations for sharing work-related content, the type of content they shared, and their intended audience. To ground participants' answers, all questions related to three social media platforms: Twitter, blogs and YouTube. These platforms were chosen for their global popularity and because they are inclusive and public-facing platforms which (generally) do not require users to log-in in order to view the content. This ensured that participants' discussions were grounded in social media platforms which allow the possibility for engagement with different publics, and not just academics (as might be the case with platforms such as ResearchGate or Academia.edu).

### ***Participants***

The study was carried out with 80 scientists based in Ireland or the United Kingdom (UK) involved in publicly-funded food-related research (all disciplines and topics). This study was carried out during July/August 2016. An initial contact list of 350 potential participants was drawn up using two main methods. Lists initially checked included food-related research projects from the last 5 years of all relevant national (Ireland and UK) and EU funding programmes to identify Irish and UK partners. From there, individual scientists associated with these projects were identified. Scientists' public biographies were also searched on the websites of relevant schools and departments in third level and research institutes in Ireland and the UK. The resultant list ensured representation of scientists across key demographics (country, gender, career stage, discipline) and social media use, the latter which was initially

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<sup>1</sup> A detailed description of the methodology is available in Regan & Henchion (2019).



determined by searching for the presence or absence of personal social media accounts (Twitter, YouTube or a personal blog). Purposive sampling of this list was carried out until a reasonable spread of participants was secured (See Table 1 and 2). An e-mail invitation was issued to eligible scientists on the list outlining the background to the study and providing the link to the survey platform. The survey took on average 30 minutes to complete. Responses were closely monitored and a targeted recruitment drive (using follow-up e-mails and phone calls) was used where certain demographic categories were lacking in number. The study was closed once all key informant demographics had been reflected in the sample (Table 1 and 2). The diversity of the sample ensured a range of opinions in the scientific community about social media use.

### *Analytic procedure*

The qualitative data were transferred into QSR International's NVivo 10 qualitative software which was used to organise and manage the data. A hybrid thematic analysis was carried out based on good practice guidelines (Braun and Clarke, 2006; Fereday and Muir-Cochrane, 2006; Swain, 2018). This involved combining a deductive and inductive approach to analysis with both top-down, theory-driven coding and bottom-up, data-driven coding. A coding framework was used which underwent continuous review throughout the analysis. Employing a deductive approach using the Kietzmann et al (2011) social media framework, a priori codes were used to group all instances of discussion around the seven functions of social media: *identity, conversations, sharing, presence, relationships, reputation, and groups*. Within these hierarchical codes, inductive coding, grounded in participants' data, was carried out to examine the manner in which participants discussed the perceived threats and opportunities presented to food research by each of these social media functions. Merging the inductive and deductive codes, themes were developed and refined. In writing up the

analysis, verbatim quotes were chosen based on their vividness and ability to communicate the essence of each theme.

Table 1: Sample characteristics ( $n = 80$ ).

Demographic	$n = 80$
<i>Country</i>	
Republic of Ireland	34 (43%)
United Kingdom	46 (57%)
<i>Gender</i>	
Males	33 (42%)
Females	46 (58%)
<i>Age</i>	
18-35	28 (35%)
36-55	42 (52%)
56+	10 (13%)
<i>Career Level<sup>1</sup></i>	
Early-career researcher	25 (31%)
Mid-career researcher	43 (54%)
Senior-career researcher	12 (15%)
<i>Discipline</i>	
Science, Technology, Engineering and Mathematics (STEM)	60 (75%)
Arts, Humanities, and Social Sciences (AHSS)	20 (25%)

<sup>1</sup> Early-career researcher (postgraduate student, research assistant, post-doctoral researcher); Mid-career researcher (research officer or fellow; senior researcher officer or fellow; lecturer; senior lecturer); Senior-career researcher (associate professor/reader; professor; head of research).

Table 2: Social media use amongst the sample ( $n = 80$ ).

Social Media Platform	Frequent user <sup>a</sup>	Moderate user <sup>b</sup>	Infrequent user <sup>c</sup>	Non-user
Research Gate	13%	54%	24%	9%
YouTube	17%	53%	20%	10%
LinkedIn	9%	40%	29%	22%
Facebook	43%	24%	5%	28%
Twitter	30%	15%	6%	48%
Blogs	1%	18%	21%	60%
Academia.edu	5%	17%	14%	64%
Instagram	13%	10%	8%	69%

<sup>a</sup> Use it several times a day. <sup>b</sup> Use it once a day or several times a week. <sup>c</sup> Use it several times a month or several times a year.

## Results

A diversity of attitudes towards social media within academia was apparent with evidence of researchers who already enthusiastically embrace these platforms, as well as those researchers who seem very unlikely to support their integration into academia. While most participants sat somewhere in the middle of the continuum of acceptance, it is worth particularly highlighting those minorities in the sample who resided at the polar ends. ‘Social media enthusiasts’ in the study were extremely welcoming of the development of social media within their profession, with one participant advocating them as “*the future of communication in research*” (Female, 26-35 years old, Social Media User). ‘Social media sceptics’ also existed. These individuals, all currently not using social media, failed to see any value for their application in food research, with one participant labelling herself as ‘*social-media averse*’ (Female, 36-45 years) and another professor stating that he simply ‘*doesn’t believe in social media*’ (Male, 46-55 years). Assertive and absolute statements such as these suggest individuals who have formed strong attitudes which may be difficult to

change. However, the vast majority of the participants did not hold such polarised views. They could see at least some value in engaging with social media, although noted some concerns and constraints.

Figure 2 summarises the different threats and opportunities of social media for food research that participants perceived, presented via the seven social media functions of the Kietzmann et al (2011) framework. With respect to the building block of ‘identity’ – it is centrally featured in the honeycomb framework and so to in the current analysis it was evident that participants’ held strong beliefs about what defines the identity of an academic and these beliefs shaped the manner in which they were willing to engage with social media, if at all. Ensuring scientific excellence, engaging in public communication, and being part of an academic community were viewed as important facets of academic identity and shaped how these food researchers’ viewed the different social media functions. Three themes are identified and expanded upon in this findings section. The first theme highlights how rigour and quality are at the heart of the scientific profession and this contributes to an unwillingness to engage with social media as researchers were concerned about the social media functions which allow sharing of unverified science-related content and conversations containing spurious facts about food research. The second theme highlights how public dissemination of science is viewed as an integral responsibility for scientists and the social media function which allows scientists share their own content with diverse audiences was viewed positively by participants in this regard. However, also present in this theme was concern about the extent to which scientists are culturally supported to engage in the time-consuming function of sharing content and also concern about what members of the public are actually accessible via social media (which highlights the important of the ‘presence’ function of social media). The third theme reveals the significant value placed on being a

member of the academic community and almost all of the social media functions were viewed favourably as a means to support academic community building.

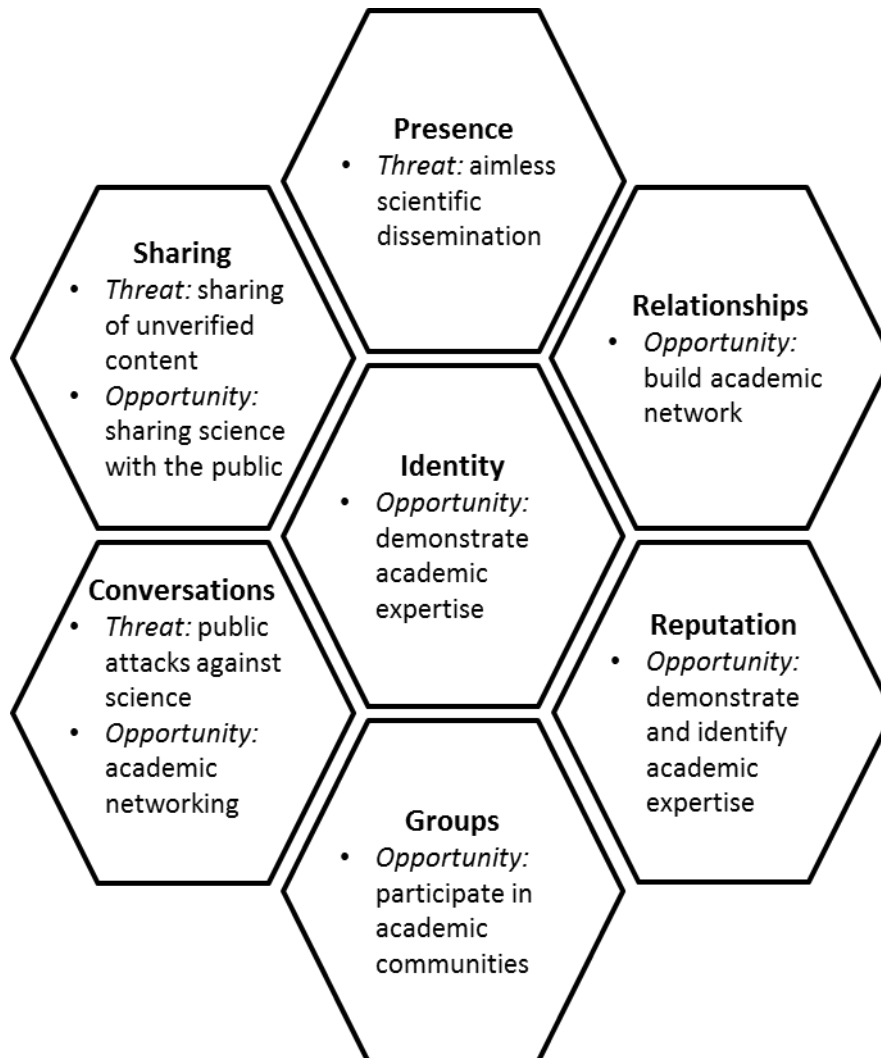


Figure 2: Food researchers' views on the role of social media in science – the perceived threats and opportunities associated with the seven social media functions of the Kietzmann et al. (2011) framework.

***‘Sharing’ and ‘Conversations’: social media viewed as a threat to scientific integrity***

Believing that researchers have a primary responsibility to ensure high quality and rigorous science led some participants to view social media platforms with caution. Participants were concerned that the unregulated and freely accessible nature of social media meant that poor

quality food research could be shared and distributed by, and amongst, members of the public. There was a concern about science being taken out of traditional closed academic settings (peer-reviewed journals and academic conferences) and instead being shared and disseminated in a social media environment, where it is not subject to any scientific critique or scrutiny, which could be particularly problematic in the domain of food research where scientific messages are already subject to much conflict and confusion:

“There is no validation process and scientific rigour would be lost in 'loose' statements that sound good. If some of the manuscripts that I review were available un-reviewed, science would be in trouble. I think research needs to be validated and peer review has stood the test of time. The rubbish I see in submitted manuscripts should not be available. This material should not be available through blogs etc. written by people promoting themselves” (Male, 56-65+ years, Non-social media user)

It was evident that ensuring and demonstrating scientific excellence was an important facet of academic identity. The hesitancy amongst some participants and their deliberations over what social media meant for their profession reflected their personal commitment to protecting science as a quality-driven vocation. In comparison to the structured and critical discussion of science that occurs in peer-reviewed settings, some participants felt that academic merit would matter very little for the online audience who would seek out ‘interesting’ science, rather than ‘excellent’ science, particularly where food-related research is concerned. There was a perception amongst some that the general public would not be able to, or not want to, identify or filter out poor quality science; rather they would focus on news value. Thus participants viewed the social media function which allows all users share, distribute and exchange content with some concern with respect to maintaining the integrity of science.

“Rather a lot of the content and importance gets condensed, a bit like sound bites, the more shocking the better. A lot could go wrong in trying to put across a 'healthy diet' in a blog or a tweet.....” (Female, 46-55 years, Non-social media user)

Aside from poor quality science being made publicly available, some participants were also concerned about how conversations about science could unfold online. They discussed how research (including their own) could be taken out of context and simplified, misinterpreted or

unfairly attacked in online conversations. The underlying sentiment amongst these participants was that many social media forums facilitate unmonitored or unregulated conversations and thus are not appropriate platforms for the discussion of science – such a setting can allow the spread of inaccurate information, breed critical interactions, host discussions on superficial issues, and who you are actually conversing with often remains unknown. As one early-career researcher indicated, they were reluctant to engage in conversations online due to *“fear of abuse, internet trolls, misrepresentation/ interpretation of my research, or being taken out of context”* (Female, 26-35, Social Media User).

***‘Sharing’ and ‘Presence’ – using social media for (aimless) science dissemination***

Participants viewed research dissemination as an important obligation in their role as scientists. Many respondents valued the ‘sharing’ function offered by social media for easily disseminating and publicising their own research to a large and diverse audience and not needing to rely on any third party to do so. A number of participants referred to feeling a professional or moral responsibility to communicate with the general public about their research and they viewed social media as accessible, jargon-free, public-friendly and wide-reaching:

“I’m conscious that only a small proportion of researchers and certainly others will ever know about my research through publication in a journal alone. I believe that I have a professional obligation to make my research available to the public and to disseminate more widely - this [social media] is a key way to deliver on this personal value.” (Male, 36-45 years, Social media user)

Whilst many participants indicated their general willingness to engage with social media to share their research, it was interesting to note differences in *who* specifically participants felt they were disseminating this research to. The ‘presence’ function in social media allows users to know who and where other social media users are – for example, in streaming a live video on Instagram, the host may be able to see who exactly is following that story through status

lines of individuals watching the video. However, with public-facing social media platforms such as Twitter, blogs and YouTube, it is often difficult, if not impossible, to determine who is present on your social media channel: who exactly you are accessing and who is receiving your messages. Most respondents in the study appeared to be targeting as wide and diverse an audience as possible so that they could maximise the outreach and potential impact of their work. Amongst those participants who currently use social media to actively post and share content (26 participants in the sample), 7 participants indicated their intended audience for their posts was solely the academic community – that is, other researchers and students. 17 participants indicated that they posted content online directed at multiple audiences, with different audiences being suggested including policy-makers, politicians, research funders, colleagues, other academics, students, social activists, the food industry, journalists and the general public. A few participants in the sample commented on the challenge of ‘context collapse’ – addressing a diverse online audience with the same message – something which they felt could be particularly problematic when it comes to communicating about science:

“Not sure I have considered the intended audience - other than people who are interested in the area of nutrition and health and perhaps what's happening in our research group... I only post to twitter and then I don't see that I have an intended audience as such (as people choose to follow or don't so I don't see this as something I have control over as such)... It's the untargeted nature of posts that is difficult. Not knowing who the possible audience might be makes it difficult to tailor posts I guess and results in 'dumbing-down' in many respects” (Female, 46-55 years, Social media user)

An additional constraint, many participants indicated that they are time-poor and simply could not consider the additional layer of work introduced by using the ‘sharing’ function of social media specifically for public engagement and science communication. Participants referred to their intense work load and how they prioritised traditional roles (research and teaching) over roles involving communicating with society:

“Time pressure of modern academia...I don't really have time for it, given the extractive nature of my university on my time and the tough situations that most ECRs find themselves in regarding work/life balance.” (Male, 26-35 years, Non-social media user)



This narrative highlighted the importance of organisational engagement norms surrounding social media use, and the values encouraged within academia. When it comes to the perceived responsibilities of their jobs, education and research are still prioritised and engagement activities are not yet embedded into the psyche of the researcher as a ‘must do’. Time was the most frequently mentioned barrier amongst participants for sharing content on social media. Logistical constraints are likely to hamper engagement with online platforms to some degree, however, the argument can be made that many extremely busy researchers do find time to use social media suggesting that time in itself is not the major problem, rather motivation to ‘make time’ is likely to be low amongst many scientists. That these scientists are unable to find the time to invest in social media suggests a low prioritisation of online outreach activities. This was supported by comments from the participants who indicated that they failed to see any organisational support or reward for time invested in social media:

“A key issue is the culture of an organization and its attitude to social media... If the attitude is positive (or intended to be), then this needs to follow through with easy and widespread facilitation of training and getting through the learning and technology curves.” (Male, 36-45 years, Social media user)

***‘Sharing’, ‘Conversations’, ‘Identity’, ‘Groups,’ ‘Relationships’ and ‘Reputation’: using social media to build academic communities***

It was evident that for many participants being part of an academic community was an important part of being a scientist – scholarly networking, keeping up-to-date with the work of other researchers, and giving and receiving academic approval were all viewed as important in the life of a food researcher. Many participants positively appraised the functions offered by social media in this regard. While participants were positive about sharing their science online with multiple audiences, when it came to capitalising on the other functions offered by social media – expressing one’s identity, exchanging information, engaging in conversations, forming communities, building relationships, and identifying

reputation – these appeared to be reserved for an engagement context involving only the scientific community: colleagues, scientific peers, and students.

“Social media is valuable for sharing findings, post-publication feedback (negative and positive!), to engage and feel part of online scientific community.” (Male, 36-45 years, Social media user)

Participants were not referencing any formal online scientific community; rather these networks, as with many communities of practice appeared to be informal entities existing in their own minds – when they discussed motivations to engage with social media, it was evident that a major motivation was to engage with the ‘online scientific community’. Online networking with other academics was facilitated through the ‘sharing’ and ‘conversations’ social media functions whereby participants indicated that they largely shared content aimed at other academics and primarily engaged in online conversations with other academics. The ‘groups’ and ‘relationship’ functions also facilitated social media users to feel part of an online academic community – for example, following, or being followed by, other researchers in their discipline area, or participating in hashtag conversations dedicated to their specific research interests.

“I like the search facility on Twitter and the opportunity to interact with other researchers in very similar fields, it is a great way of networking. Twitter has been great at introducing me to other researchers in the field. I have met people at conferences who I follow and who follow me on Twitter and it has been a great conversation starter.” (Female, 18-25 years, Social media user)

A large number of participants discussed the potential to access tangible benefits from social media platforms including explicit, objective knowledge (e.g. research updates and scientific articles) and forming collaborative opportunities (networking with other researchers in their field who may be geographically dispersed). Also discussed was the enjoyment they got from debating and connecting, in a relaxed environment, with peers who shared mutual interests, as well as the academic recognition from peers for one’s research activities. Several participants, mostly current social media users, spoke explicitly about using social media to

share their achievements to reflect positively on themselves, their research group or their organisation. Career advancement and establishing oneself as a leader in their research field by sharing one's research and one's successes were strong motivating factors in how participants utilised the 'identity' function of social media, and the manner in which they expressed themselves:

“When posting to twitter it is perhaps motivation to share work-related content or work-related activities/successes with others - part of this might also be to reflect positively on my work place for prospective students, existing staff/students and to enhance our research group profile.” (Female, 46-55 years, Social media user)

In this sense, social media was viewed as useful for participants to demonstrate themselves as an 'expert' or respected researcher – functions which provided a facility for this, including 'reputation' were viewed positively, for example the number of times an article is shared online can give participants an indication of the impact of their work:

“I do mention my Twitter & LinkedIn accounts (and others) on my CV, job applications, grant applications, etc. I do mention all dissemination channels (and number of mentions) in reports to funders.” (Female, 36-45 years, Social media user)

## **Discussion**

In contrast to other public-facing communication channels, social media allow academics to manage their own self-presentation and use social media in a way which fits their values and perceived identities (Litt, 2012). The current study provides insight into how scientists within the food research community view social media. The findings reveal scientists' beliefs regarding social media and the new responsibilities and roles expected of them in recent models of science governance with regard to science communication and public engagement. The current study explored how different social media functions are used to support those facets of academic identity valued by food researchers. The study demonstrates how perceptions about the roles and responsibilities of a scientist directly influence the manner in which scientists choose to use communicative tools such as social

media. These insights provide practical learnings, particularly with respect to fostering an academic culture which encourages and rewards public engagement activities, and theoretical learnings for the positioning of social media functionality (Kietzmann et al., 2011) with respect to academic identity (Henkel, 2005) is explored.

Kietzmann et al. (2011) made the point of their honeycomb framework that the seven building blocks are not meant to be mutually exclusive, nor are they always present in all social media activity. This was evident also in how the food researchers in the current study discussed engaging with social media, favouring certain functions in different contexts, largely to reinforce different facets of their academic identity. On the whole, the social media function of ‘sharing’ appeared to be most valued amongst the participants to disseminate scientific output with the public – however, equally apparent was concern about food research being shared and discussed amongst the public in social media forums. All social media functions were valued for academic peer engagement – where participants valued the social capital garnered from networking and building relationships with peers online. The current study provides theoretical insights into the study of academic identity and social media. Identity is dynamic; it is shaped by social experiences and organisational changes and so can also change in response to such events, including for example the proliferation of social media within academia (Thurlow and Mills, 2009, Henkel, 2005). In the current study, discipline, scientific rigor, and being part of an academic community continued to be important facets of identity and accordingly shaped participants’ judgements on the value and use of social media within academia. In line with previous research (Collins et al., 2016), the themes indicate that scientists may not be capitalising on the interactive functionalities of social media to engage with society, and instead, appear to largely favour these platforms to strengthen ties and relationships with others in the scientific community. Societal implications arise from social media serving this particular facet of academic identity. Whilst

the sense of community created by online interactions amongst scientists is a beneficial and rewarding use of social media, it also has the potential to act as a barrier towards the participation of wider society in conversations around science. Simis et al. (2016) argue that the scientific community must take a leading role to avoid creating or further amplifying an ‘us-versus-them’ dichotomy; instead, they urge scientists to ensure that they reach out and engage in meaningful dialogue with different audiences online. This is particularly important in the case of discussion of food-related research in online forums where the public are exposed to competing and conflicting messages on social media platforms by those with different interests and which can have the potential to greatly influence public opinion. Active effort is needed to break down boundaries and establish new networks online which requires scientists’ time, resources and most of all – prioritisation. However, as the current study shows, prioritisation of such public engagement tasks remains low on the long list of academic duties.

Academic culture does not support food researchers to take a leading role in using social media as a platform to engage society. This sentiment was evident amongst the participants. Johnson et al. (2014) found that within the culture of some organisations and scientific disciplines, there is a tendency for outreach to be a marginalised activity. It is viewed by some as a ‘low-status task’ and one which departs from the perceived norms of what it means to be a true academic. In the academic community, traditional measures are still prioritised to determine a scientist’s value and worth (Lupton, 2018). The norm is to value research productivity (e.g. grants, peer-review publications) while other types of contributions such as social media engagement often tend to be overlooked when it comes to research evaluation, hiring, tenure or promotion (Neff, 2018). McClain and Neeley (2015) have previously called on the scientific community to start a conversation about scientists’ engagement with social media that “focuses on the metrics of scientific success” and to

consider whether new metrics need to be introduced. The findings support the need for such a conversation, should we expect scientists to embrace new responsibilities and roles to engage society in science. Researchers must be sent a clear message that engagement activities are a valued activity. However, changing the research evaluation system alone will not change perceptions and behaviours. In the current study, participants were happy to prioritise using social media to engage with other academics even in the absence of formal reward; this was because they perceived informal rewards in the form of social capital. A wider cultural change is needed in order for academia to view engagement with the public as being on par with engagement with fellow academics.

The current study reflects the views of one particular community; that of publicly-funded food researchers. The study is limited in its geographical application, having only studied the views of scientists in Ireland and the United Kingdom. Future research should explore how views collected in the current study may compare with views of scientists from other disciplines, sectors and geographical regions. All scientists have been encouraged to move from dissemination to dialogue with the public. There is a particular need for food researchers to actively engage with the public, given the amount of conflicting messages centred on food which the public are exposed to, and in particular online. In order to support food researchers to take an active role in this communication landscape, the findings from the current study point towards some practical suggestions. Firstly, there is a need for organisational change to embed an academic culture which encourages and rewards public engagement activities; the findings in the current paper highlight the need for those in positions of governance to reflect on the role of new metric systems in academia. Such macro-level organisational changes are needed to immobilise and motivate scientists to view public engagement as an important facet of the academic identity. The findings also point to the need to motivate and support individual researchers to assume new roles and

responsibilities, including public outreach activities using social media. In particular, there is value in exploring how the social media functionality framework developed by Kietzmann et al. (2011) could be used to train food researchers, but also scientists in other research interest areas, in the use of social media. The Kietzmann et al framework would provide a coherent structure for such training including for example training food researchers in how to effectively use the seven functional building blocks of social media within research. As evidenced in the current paper, it would be important for such training to directly target the concerns that scientists may have about these functions, and leverage the opportunities they currently value. The findings from the current study reflect how food researchers are likely to perceive and use the seven functions of social media and this evidence should be used to inform future social media training delivered to scientists – these insights are particularly important if the desired goal is to increase the extent to which researchers engage online with non-academic audiences.

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