Food versus Faces: #plant-based #vegetarian #vegan Irish Influencers **Engagement, Sentiment and Digital Food Culture on Instagram**

Rani Sheilagh Dunn

N00190122

Thesis submitted as a requirement for the degree of MSc in Cyberpsychology, Dun Laoghaire Institute of Art, Design and Technology, 2021.

This Thesis is entirely my own work, and has not been previously submitted to this or any other third level institution.

Word Count: 6,512

Acknowledgements

I wish to express my sincere thanks and gratitude to the following people:

All of the lecturers and staff at IADT for sharing their extensive knowledge and skills and for supporting me throughout the MSc Cyberpsychology programme over the last 2 years.

My supervisor Robert Griffin for his clear guidance, encouraging words, calm presence and support.

All of my talented fellow classmates for their inspiration, exchanges and support. I am sure that there are great things ahead for each and every one of you.

A special mention of Rachel Malone for reviewing and validating my data and for being my project collaborator throughout our journey over the last two years.

Thank you to my amazing mother Beryl for her endless love and generosity without which none of this would be possible.

Thank you to my partner Mick for his patience, steady support, love and encouragement over the last two years. I look forward to sharing our next adventures together.

TABLE OF CONTENTS

Cov	er Sheet / Declara	ation	1
Ackı	nowledgements		2
List	of Figures		5
List	of Tables		5
1.0	Abstract		6
2.0	Introduction		7
	2.1 Instagram		7
	2.2 Social inte	eraction	8
	2.3 Food popu	ularity on Instagram	9
	2.4 Emerging	food trends in Ireland	9
	2.5 Influencer	S	9
3.0	Literature Reviev	v	11
	3.1 Self-prese	ntation	11
	3.2 Trust onlin	ne	12
	3.3 Food vers	us faces	14
	3.4 Sentiment	t	15
	3.5 Digital foo	od categories and themes	16
	3.6 Current st	udy	17
4.0	Methodology		19
	4.1 Instagram	profile selection criteria	19
	4.1.1	The profiles	20
	4.2 The quant	itative phase of study	21
	4.2.1	Engagement	21
	4.2.2	Sentiment	21
	4.3 The qualit	ative phase of study	22
	4.3.1	Thematic content analysis	22
	4.4 Ethics		23

5.0 Results	25
5.1 Engagement	25
5.2 Sentiment	27
5.3 Additional visual categories and themes	28
5.4 Data Analysis	30
6.0 Discussion	31
6.1 Theoretical and practical implications	32
6.2 Strengths and Limitations	33
6.3 Future Research	34
6.4 Conclusion	34
7.0 References	36
8.0 Appendices	44
8.1 Appendix A: Ethics Form A (green route)	44
8.2 Appendix B: Engagement total calculations	48
8.3 Appendix C: Engagement data snapshot sample	49
8.4 Appendix D: Sample of raw comment data	50
8.5 Appendix E: Sample of cleaned data for LIWC analysis	51
8.6 Appendix F: LIWC results sample screenshot	51
8.7 Appendix G: Images snapshot sample for content analysis	52

List of Figures

igure 1: Online engagement results by percentage	.25
igure 2: Breakdown of the quantitative results for each Influencer profile and pho	oto
ategory, with date ranges	.26
igure 3: Online engagement results for each influencer by percentage	.26
igure 4: Breakdown of LIWC results on sentiment (Tone) analysis for each influence	cer
profile on comments of photos of faces with highest engagement and photos of	
aces with lowest engagement	.27
igure 5: Breakdown of LIWC results on sentiment (Tone) analysis for each influence	cer
profile on comments of photos of food with highest engagement and photos of foo	od
vith lowest engagement	.28
igure 6: Qualitative themes surfacing from analysis	.29
ist of Tables	
able 1: Hypotheses and Results	30

1.0 Abstract

The purpose of this thesis was to examine digital food culture in relation to Irish #plant-based #vegetarian and #vegan food influencers on Instagram. The mixed method study sought to explore factors of engagement and sentiment around photos of food versus photos of faces and to identify any additional visual themes. The literature review revealed photography as a phenomenon on social media, its relationship to self-presentation and establishing trust online, and as an extension of self and engagement with culture. A mixed method approach was employed to explore the topic in depth. The results found that overall photos of faces received more engagement than photos of food; though differences in engagement between these two categories were closer than anticipated and there was variation in individual profile results. Sentiment analysis of comments was found to be extremely positive on both photos of food and of faces regardless of the level of engagement with results returning almost no negative or neutral comments. The thematic visual analysis found a number of additional photographic categories and themes were present. The results point to unique visual self-presentation opportunities for influencers to establish trust and build their brands online and revealed the complexity of Irish digital food culture on Instagram highlighting the need for further research within this emerging area.

2.0 Introduction

Digital technologies have changed our relationship with food. People no longer rely on qualified experts to guide them in their food choices and consumption (Lupton & Feldman 2020). Social media and online food influencers are now often viewed as reliable sources for information (Djafarova & Trofimenko 2019). Food knowledge on social media platforms like Instagram can be shared giving anytime, anywhere online access to posts without the requirement to share a meal together or meet in a physical space. With this, social media influencer credibility and trust around food knowledge, including eating practices and related lifestyle choices are frequently awarded to those who post more aesthetically pleasing visual imagery (Baker & Walsh, 2020).

This thesis study examined the visual imagery of Instagram Irish food influencers comparing user engagement with photos of food versus photos of faces and analysed the sentiment and tone of user comments around these posts. Additionally, photographic visual imagery was studied to identify other categories and themes within the Irish #plant-based #vegetarian #vegan digital food culture on Instagram.

2.1 Instagram

Instagram is a mobile app-based photography social networking service that was launched in October 2010. It enables users to instantly upload media and to create posts by sharing photos to their profile. Users can comment and 'like' photos and follow other profiles. Additional features on Instagram include tagging others, geographical location and using hashtags to categorise content and make it easier to discover topics. Recently in 2016, the service also started to offer a feature for sharing videos and for creating 'Instagram Stories' (Leaver, Highfield & Abidin, 2020).

The 'like' feature on Instagram allows users to simply double-click to like content. A 'like' is communicated through a heart symbol indicating that a user has liked a photo and by displaying the name of their account and "others" under the post they

have liked. Users are also able to click to see a list of the other user accounts who have liked the same post.

The comment feature is a way for users to more actively engage with content they see and to connect with other users on Instagram. Users write and leave comments below posts. The profile owner can 'like' and reply to individual comments and directly communicate with users who have left a comment. Other Instagram users can also reply to comments adding to the communication and exchange below a post. Comments allow for feedback that can indicate reaction, feeling and sentiment around a post and may impact trust and the reputation of a profile.

2.2 Social interaction

Social interaction is a strong factor in Instagram with likes and comments facilitating user interaction and engagement. Instagram users are motivated to create and sustain social relationships with other individuals who are using the platform. They also actively seek out relationships with others who share similar interests and feel a connection to them (Lee, et al., 2015).

User engagement is significantly higher on Instagram when compared to Facebook and Twitter (Elliott, 2015) and Instagram use is increasing globally. The use of this popular online image-based social media service is also on the rise in Ireland. In October 2020 there were 2,0902,000 Instagram users in Ireland, accounting for 42.5% of the entire Irish population with numbers expected to increase to 3.3 million Irish users by 2026 (Statista, 2020).

In 2021, photos were the highest-performing type of post on Instagram for food and beverage with content posted an average of 2.7 posts per week. Posts had an engagement rate per post and per follower of 1.06% on Instagram, versus just 0.05% on Facebook and 0.07% on Twitter (Feehan, 2021).

2.3 Food popularity on Instagram

Food related photography and content lends itself well to the image-driven culture of Instagram. Instagram profiles can consist of posts that can cover many interests, topics and categories. Food was listed as the second most popular topic in 2019 in a fanpagekarma.com article by Isabel Von Puttkamer. The list was created by looking at 5 million posts and using the hashtag feature to measure and to identify the top ten trending topics on Instagram. Food content is in-demand and with that Instagram food influencers are emerging. There are content, images and hashtags for almost all types of food, for every diet and every food trend on Instagram (Fanpagekarma, 2019).

Instagram food themed accounts account for more than 250 million posts globally with food lovers consuming 4 times more content than the average user and connecting to Instagram an average of 18 times a day (Digimind, 2019).

2.4 Emerging food trends in Ireland

Within emerging online trends around food; plant-based food, vegetarianism and veganism is on the rise globally and in Ireland. In 2018, Bord Bia, The Irish Food Board, estimated that 8% of the Irish population are vegetarian and 2% are vegan and that this number is increasing (Consumer Lifestyle Trends, 2018). This growing trend has also gained attention in the media. An article in the Irish Independent reported on a survey that found 7 out of 10 people said they would consider incorporating vegetarian and vegan food options into their diet and that almost half of Irish people would consider switching to a vegan diet for environmental and/or ethical reasons (April, 2019).

2.5 Influencers

The increase of users on Instagram has seen some profiles attract a larger number of followers than others. This type of social media celebrity, sometimes referred to as a micro-celebrity, is called an 'influencer.' Social media influencers are a new type of independent advocate or promoter of a topic who have the potential to shape their followers' attitudes through the use of social media (Freberg et al., 2011).

Instagram influencer status is achieved by gaining a following of users, usually 10k or more, but in niche instances influencers may also be indicated by a smaller, highly active and engaged follower base. Influencers have an established credibility and audience; they can persuade and reach others by virtue of their perceived trustworthiness and authenticity.

This study specifically looked at selected plant-based, vegetarian and vegan Irish Instagram influencers profiles without pre-existing celebrity recognition or fame. These are Irish influencers with approximately 10k to 500k followers who gained their social status online through building their Instagram profile.

The study draws from the understanding presented in previous research that influencers are 'food celebrities' who seek to attract more followers by actively posting digital media content in order to communicate and to achieve a level of appeal, trust and engagement from their audience (Johnston & Goodman 2015).

3.0 Literature Review

3.1 Self-presentation

Self-presentation theory is a key concept in terms of social media. Self-presentation is the way individuals desire others to perceive them in a social setting (Goffman, 1959). Instagram influencers are akin to actors on a stage, who perform and present themselves online. Unlike actors, however, influencers do not necessarily have real time engagement with their audience.

Social media influencers post content that becomes a digital artefact. A digital artefact can be defined as any type of content including text, audio, video, images, photographs, animation or a combination of one or more types of content in digitised format ("Digital artefact," 2020). These digital artefacts or types of content can be accessed at any time by followers of an Instagram influencer. They can receive comments and feedback which becomes part of the influencers' online persona and self-presentation. Influencers communicate and post online in order to create profiles that are viewed as credible, authentic and trustworthy and that build relationships with their followers. Instagram photos are used for instant communication with followers and they are an important expression of self-presentation (Chua & Chang, 2016; Djafarova & Trofimenko, 2019).

Adding to the theory of self-presentation from a motivational aspect, Baumeister & Hutton (1987) state that people communicate information and images about themselves to others by engaging in self-presentation that is motivated by the wish to please their audience, or potential audience, and by matching their audience's preferences and expectations.

In the digital age, photographs have become an undeniable aspect of selfpresentation. The image driven nature of the Instagram platform creates a strong visually-orientated culture. Influencers construct their own profiles and personas online to gain trust and retain followers. Photographs serve as building blocks for an influencers' identity, credibility and present the image and profile a person chooses

to display to their audience (Mascheroni et al., 2015). In this way, visual selfpresentation online plays a key role in building trust.

3.2 Trust online

Trust as defined by McAllister (1995) states that interpersonal trust is the degree to which an individual is confident and prepared to act on the basis of the words, actions and decisions of another person. Mayer et al., (1995) presented trust as a belief about the dependability of the individual and the expectation that their actions will be favourable to the interests of the other.

In this context, trust of influencers online can be builds upon theories of selfpresentation (Casaló et al., 2017). Social media influencers present themselves to establish credibility and build an audience; they can persuade and reach others by virtue of their perceived trustworthiness and authenticity.

As indicated by Walther's research in computer mediated communication (CMC) trust online is complex. Walther states trust online can develop too rapidly and easily. He proposes that online communication has the tendency to be hyperpersonalised. The hyper-personal model states that online relationships are accelerated and behaviours can be exaggerated. Online platform, like Instagram, facilitates a curated, dependable but potentially idealised presentation of one's self to others (Walther, 1996). These ideal representations of self may not reflect 'real world' identities and influencers may be perceived as less trustworthy if they do not present what is seen as an authentic version of themselves online. In an alternative view, Suler states that individuals are by nature multi-dimensional. He argues that the self does not exist separate from the environment in which that the self is presented. Therefore, self-presentation and the related online content of social media influencers reveal dimensions within different contexts. Different modes of online communication and different environments may facilitate diverse expression (Suler, 2004). This suggests that regardless of any variations or differences between presentation of online and offline identity both may be equally

genuine and authentic forms of self-presentation that can both be interpreted as valid ways to build trust, reputation and to support engagement.

Rachel Botsman expands on this by suggesting that online trust transforms the way we trust face to face. However, she cautions that the way we present ourselves online should reflect our 'real world' identities in order to build authentic self-presentation (Botsman, 2012). Theories on trust support the concept that a followers perception of an influencer's online self-presentation and the content they post as genuine, authentic and original build reputation and can affect trust online as well as the level of engagement with content (Kukar-Kinney & Xia, 2017).

Combining theories on self-presentation and trust online suggests that social media content is a significant factor in establishing trust online. Content that contributes to establishing trust on Instagram can be linked to the perceived attractiveness, quality and the popularity of a post. Psychology theories related to trust online further build on this stating the characteristics of social media content, including photos, can change how users interact with them and may influence the level of trust established online (Chang *et al.*, 2015).

A study investigating cues for signaling trust on Instagram surveyed 260 users who used the platform to shop online for apparel. It found that attractiveness, quality and popularity positively influenced consumers trust towards a post and their response towards the brand or profile. Along with these signals, the role of trust was found to increase and affect user sentiment towards a post and the perception of credibility. However, there were limitations to the study associated with the sample. The sample was not reflective of wider Instagram age and gender demographics and its focus was only on the apparel industry. (Yang, Kim, & Tanoff, 2020). Nevertheless, the broader findings from the study on Instagram is potentially relevant and applicable to research on social media.

The visual quality of a post, user engagement in a post, and social interaction among followers on Instagram and other social media platform creates signals that a post

can be trusted. Additional signals for trust are provided through an influencer's profile which is essentially a wall of photos that reads as visual storytelling on Instagram. This visual storytelling has the potential to motivate users to pursue further engagement and interaction with the profile (Casaló et al., 2017).

3.3 Food versus faces

Photography in social media is an established and increasing phenomenon, however there has been little academic research within this area (Chua & Chang, 2016). Social media has given the opportunity to share and create digital food content and has seen food emerging as a popular topic on Instagram. Food influencers can make an impact and present visual content in many ways offering followers information about food, eating choices, themselves, diets and styles. This 'digital food culture' can be displayed through posts with images of food and of people, as well as through other types of photographic images (Lupton & Feldman, 2020).

Both photos of people or faces and food are common content features online and also within plant-based, vegetarian, and vegan driven categories on Instagram accounts. One research study found that 22% of users in the dataset posted 6-8 photos that included people or faces and 26 % of users posted 3-5 photos about food (Hu, Manikonda & Kambhampati, 2014). However, a limited amount of research has been done on how Instagram visual content and photo use might impact engagement. Within categories framed around food, one might anticipate that food photos would dominate. The same study which analysed photo content and types of users on Instagram identified 8 primary photo categories with food photos noted as a popular post on the social media platform and determined there were 5 main types of Instagram users indicating that people are sharing food images and constantly engaging with food content online (Hu, Manikonda & Kambhampati, 2014).

However, we know from offline behavioural studies that human faces are highly engaging. New born infants just minutes old turn towards faces sensing they are

important. (Morton & Johnson, 1991) and within the scientific community it is widely understood that faces are powerful communication channels.

A quantitative study examining this phenomena within the online space looked at a random sample of photos on Instagram and found that photos with faces received more engagement, measured in likes and comments, than photos without faces. The finding of the study concluded that faces are a powerful visual tool for non-verbal communication and can be connected to psychological study of human behaviour in relation faces (Bakhshi, et al., 2014). However, this study was limited to responses to photos with faces alone and did not investigate any other aspects of online user behaviour.

In contrast, this study builds on limited research of online visual media, filling a gap through a comparison of two categories of photos; photos of food and photo of faces. The research also expanded on the role of online image engagement with the inclusion of an analysis of sentiment.

3.4 Sentiment

While measuring the number of likes and comments can inform one aspect of engagement of photos on Instagram, user-generated comments allow for a more detailed understanding of engagement through using language-based analysis of sentiment.

In an article in *social media* + *society* sentiment is defined as a term used to describe a feeling, or something of emotional significance, and/or a specific point of view that is usually subjective. Sentiment analysis, also referred to as opinion mining, describes a collection of approaches that address the problem of measuring opinion, sentiment, and subjectivity in texts (Puschmann & Powell, 2018).

Instagram sentiment analysis is used to identify, extract and analyse the opinions and feelings of user-generated comments left under a post. A study by Hu *et al.* concluded that Instagram users are more likely to like and to comment on the

medias that are already popular (Hu et al.,2014). Influencers posts may trigger positive or negative sentiments from their followers. Users may express sentiments in social media through posting or through leaving comments (Hosseinmardi et al., 2015). Comments on Instagram are text-based and can be identified, extracted and analysed by a natural language-based sentiment analysis as being positive, negative, as well as a neutral comment from users (Kaushik & Mishra, 2014).

Psychology often utilises computerised linguistic measurement to understand sentiment and emotional states. However, accuracy of linguistic programs are still developing; they sometimes ignore or misinterpret context such as idioms and slang, as well as more subtle emotional expression such as irony and sarcasm.

Nevertheless, natural language use and automated, computational tools are transforming modern social psychology (Tausczik & Pennebaker, 2010).

This research adds to understanding of online engagement through linguistic sentiment analysis of comments on photos of food and comments on photos of faces contributing to existing cyberpsychology knowledge of image-driven social media environments.

3.5 Digital food categories and themes

There is a growing relationship between the world of food and digital culture that sees social media as an influence in our daily lives. Food media has expanded to become a reflection of lifestyle, choices, aesthetics and taste. Food-oriented social media can be seen as a personalised extension of self and engagement with lifestyle media and culture (Lewis 2018; De Solier, 2013).

In addition to food and faces, other photographic themes have emerged online around plant-based, vegetarian and vegan food. Research indicates that digital food cultures may include lifestyle posts and messaging around health, nutrition, and in some instances also include an expression or promotion of religious, spiritual, environmental or ethical choices around food. Instagram offers the opportunity for

influencer and users to share, to find and follow these food eating styles and connect with a like-minded online community (Lupton & Feldman, 2020).

Additionally, examining Instagram photographic content within an Irish context allows for the inclusion of identification of any culturally specific themes and may demonstrate that culture has an impact on the use of social media (Alshawaf & Wen, 2015).

3.6 Current study

The study presents an analysis of images and text in relation to plant-based, vegetarian and vegan food from Irish Instagram influencers. The research investigated self-presentation, and trust, online engagement of photos of food versus photos of faces, linguistic sentiment analysis and identification of additional visual themes within the context of plant-based, vegetarian and vegan Irish food Influencers and the rise of Instagram use in Ireland.

Interest in research in this area and with attention to food and digital media, or what has been termed 'digital food cultures' is growing. Nevertheless, existing digital food culture studies examining practices and representations related to food within social media platforms, such as Instagram, are still very limited (Lupton & Feldman, 2020).

This study addresses this gap in research. Additionally, no previous research has been done on this topic within an Irish context. This study also contributes to the growing field of knowledge within the emerging area of digital food culture through answering the following research questions:

RQ1: Do photos of food differ from photos of faces in online engagement from plant-based, vegetarian and vegan Irish Instagram influencers?

 Quantitative measurement of engagement, measured in number of likes and number of comments, on images of food and on images of faces within a specified timeframe.

RQ2: What is the sentiment of comments on photos of food versus photos of faces and is there a difference in sentiment for posts that receive higher levels of engagement versus those that receive lower levels of engagement?

Sentiment analysis on comments using Linguistic Inquiry and Word Count
 (LIWC)

RQ3: In addition to photos of faces and of food, do any other photographic themes or patterns emerge?

Qualitative thematic analysis of images

Informed by the literature review, current plant-based, vegetarian and vegan food culture and social media trends within Ireland lead the development of the following hypotheses:

- H1 There is a difference in online engagement of photos of faces versus photos of food with photos of faces having more online engagement.
- H2 There is an overall higher level of positive sentiment expressed (versus negative or neutral) in comments around both photos of food and photos of faces regardless of category or level of online engagement.
- H3 -There are additional photographic categories and themes that emerge around Irish plant-based, vegetarian and vegan food influencers.

4.0 Methodology

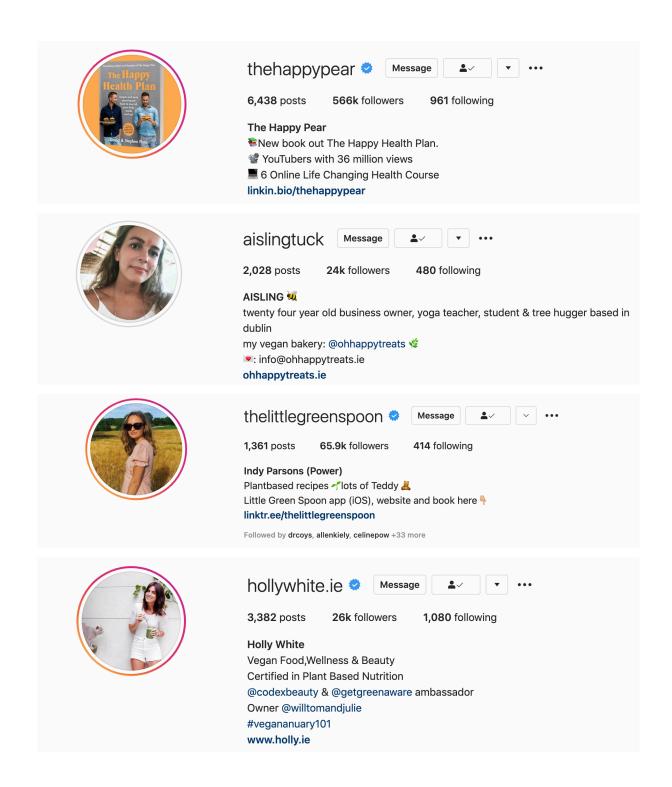
The aim of the study was to explore online social engagement, sentiment, and to identifying categories and themes arising around the digital food culture of Irish plant-based, vegetarian and vegan Instagram influencer accounts. This study utilised a mixed method approach encompassing both quantitative and qualitative studies.

4.1 Instagram profile selection criteria

The personal Instagram profile of the researcher was used as a starting point to search for Irish plant-based, vegetarian and vegan influencers. The researcher identified and followed Irish influencer accounts with 10,000 or more followers. Accounts that met criteria appropriate for this research were selected. Firstly, the account profile holder must be 18 years of age or older from Ireland, or based in Ireland. Second, the account must be of Irish 'influencer' status and be publicly accessible without the need to log-in to Instagram access the account. Third, the main topic on the account must be based around plant-based, vegetarian and vegan food with inclusion processes, practices, consumption and production permitted. Different accounts were selected to include varied levels of Irish influencer accounts ranging from a minimum of 10,000 to approximately 500,000 followers. This range of number of followers is reflective specifically to the population of Ireland versus countries with higher populations (i.e., the USA or UK). The criteria were checked by physically reviewing each profile and looking through each page. The following three influencer profiles were excluded from the study: @rozannapurcell has pre-existing celebrity status and also has several Instagram accounts related to the topic, @thetinyvegankitchen stopped actively posting to Instagram in December 2020 and @addictedtodates did not provide enough data for images of faces. The final selection process resulted in 4 suitable Instagram accounts for analysis: @thehappypear, @thelittlegreenspoon, @hollywhite, @aisilingtuck

4.1.1 The profiles

The following 4 Irish Instagram influencer profiles were identified as suitable for data-collection. Screenshots are below, however all influencer specific data and results are anonymised.



4.2 The quantitative phase of study

The quantitative research investigated online engagement and sentiment of comments on photos of food versus photos of faces.

4.2.1 Engagement

For the purpose of this study, online engagement was measured by two social engagement feedback factors. The number of likes and the number of comments. Posts were identified and categorised as either photos of food and of faces and numerical data was gathered from all Instagram influencer accounts. Photo data was gathered from the same designated start date going backwards until 30 photos in each category was reached. The posts from each influencer profile were first manually sorted into the two visual categories; photos of food and photos of faces. identified and categorised posts were saved as screenshots into a spreadsheet. Each post in the spreadsheet included accompanying data counts for the number of likes and number of comments. The timeframe to gather data recorded for each profile and corresponding numerical was recorded. Engagement for individual posts was calculated based on the total number of likes and the total number of comments each post received. Engagement for food versus faces was calculated based on totals for each category in each profile, as well as calculating the combined total of all profiles.

4.2.2 Sentiment

The study included a natural language content analysis of sentiment of comments on the posts using Linguistic Inquiry Word Count or LIWC. LIWC is a text analysis tool that assesses emotional, cognitive, and structural factors of specific text to detect positive and negative effects based on the use of a predefined dictionary containing words and classified categories (Pennebaker, 2017). Sentiment analysis for this study was conducted using the LIWC 2015 internal dictionary and all emotional categories. In addition to detecting positive and negative effects LIWC also provides options for measuring other sets of sentiment categories. Emotional tone understood as a range from positive to negative in LIWC is indicated with a score over 50 suggesting positivity, a score below 50 suggest increasing negativity and a score of or near 50

indicated neutral emotion. The LIWC program is a validated social and cyberpsychology tool that is being used for language content analysis of social media (Andrei, 2014).

LIWC provides a robust qualitative interpretation of the unstructured text data like that we see in user comments on social media. However, this method of machine learning for analysis is still developing and LIWC is vulnerable to returning inaccurate results or misreading contextual differences, such as sarcasm. Therefore, cyberpsychologists and other researchers should remain sceptical of the ability of machine learning and mathematical models to fully make sense of and to correctly identify nuances of spoken and written language (Rodriguez, 2019).

4.3 The qualitative phase of study

Qualitative research offers rich insights into the behaviours, attitudes and perspectives that is a different, but often a complimentary way, to add to data obtained through quantitative research methods utilised in other studies (Braun & Clarke 2006). Therefore, the research included a thematic qualitative content analysis of all photographic posts from the selected Irish influencer accounts within a designated timeframe. This analysis addressed the following questions; What additional categories can be identified in the visual content from photographic Instagram posts? What themes emerge from these categories? How do these potentially relate to Irish plant-based, vegetarian and vegan digital food culture as seen in Instagram?

4.3.1 Thematic content analysis

In designing thematic coding, there is a currently lack of empirical literature relating to this specific digital food culture phenomenon. As such, no a priori coding themes were developed and general inductive reasoning was utilised to identify occurring categories and themes (Pila, 2017). The purpose of using the inductive approach was to allow for research findings of categories and themes present within the raw photographic data without the limitations presented by more structured methods. While less structured, the general inductive approach is frequently used within the

social sciences and provides a systematic set of procedures for analysing data that can produce reliable and valid scientific findings.

The procedure involved an initial review of all photographic data, identification of initial categories, reducing redundancy or overlap of categories to create a code book, identifying the most important categories and finally determining suggestion of primary themes. Validity and reliability of thematic content data analysis was consistency checked by another coder taking category descriptions and matching photos to categories and within themes (Thomas, 2006).

The outcome of inductive approach to thematic content analysis aims to identify additional categories and themes that could offer insight into this specific area within Irish digital food culture. Emerging categories and themes may inform potential opportunities for future research. Bryman (1984) suggests that the qualitative researcher commences into a journey of discovery that is likely to stimulate new areas of further research. However, it is important to note that the sample of the selected photos for analysis within the designated timeframe in this research represents only a snapshot, are subject to the changing nature of Instagram social media content and to fluctuation of food trends within Ireland.

4.4 Ethics

This study was approved by the Ethics board in IADT. Information shared on public media platforms, such as Instagram that is not a private account or password protected can be used for research without informed consent (Laestadius, 2016). Collection of data will proceed following the direction stating publicly available information on social media is ethically available to use without informed consent. Influencers actively want people to view their pages, follow them and share their message and therefore the data collected from the accounts of Instagram influencers can be considered and shared in the same way as 'food celebrity' data is treated in the media (e.g. Jamie Oliver, Rachel Allen, etc.,) However, despite this, all influencers used for the research were contacted with a brief description of the purpose of the research and the option to request the findings of the research study

when it is completed. Only one of the four influencers responded with an email message stating "sounds cool... very interesting." No other replies were received and no objections or concerns were communicated.

5.0 Results

The results section has been organised to address each research question separately.

5.1 Engagement

RQ1: Do photos of food differ from photos of faces in online engagement from plant-based, vegetarian and vegan Irish Instagram influencers?

The results of the quantitative data investigated online engagement of photos of faces versus photos of food posted by Irish Instagram Influencers on their profile wall using the two social engagement factors for measurement; total number of likes and comments.

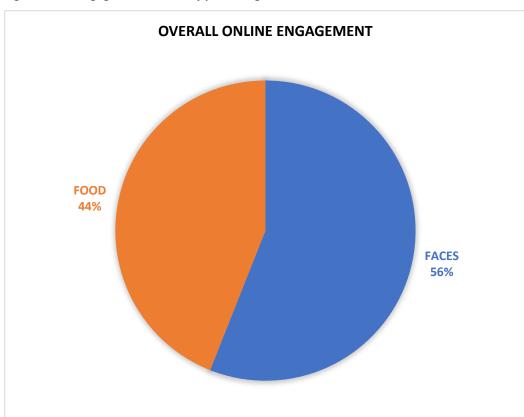


Fig 1: Online engagement results by percentage

Fig 2: Breakdown of the quantitative results for each Influencer profile and photo category, with date ranges.

	PHOTOS OF FACES	PHOTOS OF FOOD	
	30 photos	30 photos	Date range required to gather data
	likes + comments	likes + comments	
Influencer 1	269,851	248,004	Faces: 27 Aug 2020 to 27 Feb 2021
			Food: 7 Jan 2021 to 27 Feb 2021
Influencer 2	7,078	3,586	Faces: 7 Oct 2020 to 27 Feb 2021
			Food: 2 Apr 2020 to 27 Feb 2021
Influencer 3	11,091	9,140	Faces: 31 Dec 2020 to 27 Feb 2021
			Food: 09 June 2020 to 27 Feb 2021
Influencer 4	64,621	16,241	Faces: 25 Nov 2019 to 27 Feb 2021
			Food: 31 Oct 2019 to 27 Feb 2021

Online Engagement Total	352,641	276, 971

Fig 3: Online engagement results for each influencer by percentage



5.2 Sentiment

RQ2: What is the sentiment of comments on photos of food versus photos of faces and is there a difference in sentiment for posts that receive significantly higher levels of engagement versus those that receive lower levels of engagement?

The quantitative results for this part of the study investigated the sentiment of comments on photos of food and photos faces with high engagement and with low engagement using Linguistic Inquiry Word Count (LIWC) analysis. Emotional tone is understood as a range from positive to negative indicated with a score over 50 suggesting positivity, a score below 50 suggesting increased negativity and a score of or near 50 indicated a neutral emotion.

Fig 4: Breakdown of LIWC results on sentiment (Tone) analysis for each influencer profile on comments of photos of faces with highest engagement and photos of faces with lowest engagement. Results include details of word count (WC), positive emotion (posemo) and negative emotion (negemo) words used.

Faces: High engagement	WC	Tone	posemo	negemo
Influencer 1	13864	99.00	16.24	0.48
Influencer 2	2420	98.01	5.70	0.29
Influencer 3	549	99.00	14.03	1.09
Influencer 4	2465	99.00	15.01	1.14

Faces: Low engagement	WC	Tone	posemo	negemo
Influencer 1	4732	99.00	7.23	1.23
Influencer 2	65	99.00	10.77	1.54
Influencer 3	137	99.00	25.55	0.73
Influencer 4	661	89.26	4.69	0.91

Fig 5: Breakdown of LIWC results on sentiment (Tone) analysis for each influencer profile on comments of photos of food with highest engagement and photos of food with lowest engagement. Results include details of word count (WC), positive emotion (posemo) and negative emotion (negemo) expressed.

Food: High engagement	WC	Tone	posemo	negemo
Influencer 1	9212	99.00	9.89	0.40
Influencer 2	240	99.00	16.67	0.83
Influencer 3	305	99.00	8.85	1.97
Influencer 4	805	99.00	8.32	0.62

Food: Low engagement	WC	Tone	posemo	negemo
Influencer 1	2500	99.00	10.28	0.32
Influencer 2	42	99.00	14.29	0.00
Influencer 3	119	98.87	7.56	1.68
Influencer 4	107	99.00	7.48	0.00

5.3 Additional visual categories and themes

RQ3: In addition to photos of faces and of food, do any other visual and photographic themes or patterns emerge?

Qualitative data was coded using an open inductive method and informed by Braun and Clarke's (2006) thematic analysis method. Data was gathered during the same date range as was defined for each influencer during the engagement phase of the study. This data addressed the following questions *What additional categories can be identified in the visual content from photographic Instagram posts? What themes emerge from these categories? How do these potentially relate to Irish plant-based, vegetarian and vegan digital food culture as seen on Instagram?*

A total of 225 images were identified for analysis. Additional categories surfaced within the date range for each influencer with a total of 15 themes identified from these categories.

The major qualitative themes that emerged from Irish Instagram Influencers were *Nature and Active Lifestyle,* followed by *Pets.* Visual imagery within themes referenced Ireland specific locations and there was a pattern of posting photos of Irish location specific activities.

All themes listed in order from lowest to highest number of posts are: eco-living composting, new baby, political, fashion, travel abroad, relaxation, text-based images and quotes, pampering, Christmas, alternative therapies, interior styling, product promotion, pets, active lifestyle and nature.

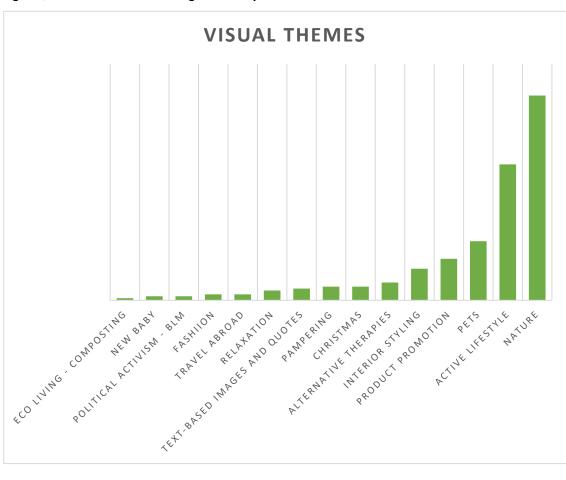


Fig 6: Qualitative themes surfacing from analysis

5.4 Data Analysis

Table 1: Hypotheses and Results

Hypothesis	Result
H1: There is a difference in engagement with	There is a difference in online
photos of faces receiving more online	engagement. Photos of faces received
engagement than food.	an additional 12% overall engagement
	versus photos of food.
H2 - There is an overall higher level of positive	Results indicated a positive sentiment in
sentiment expressed (versus negative or neutral)	all text-based comments regardless of
in comments around both photos of food and of	category and regardless of the level of
faces regardless of category or level of	engagement with the LIWC tone
engagement.	analysis score ranging from 89.26 to
	99.00 out of a potential 100.00
H3 -There are additional photographic categories	Additional categories emerged with a
and themes that emerge around Irish plant-	total of 15 themes identified from these
based, vegetarian and vegan food influencers.	categories.

6.0 Discussion

The study explored factors of visual photographic imagery on social media posted by influencers. Engagement of and sentiment surrounding images of food versus images of faces and identification of additional visual categories and themes were examined within the context of Irish plant-based, vegetarian and vegan digital food culture on Instagram.

The quantitative study on engagement revealed an overall 12% higher engagement with photos of faces as opposed to photos of food supporting the hypothesis and suggests the validity of findings from previous studies on faces (Morton & Johnson, 1991; Bakhshi, et al., 2014). However, while the overall engagement result was significant, the difference was not as extreme as might be anticipated from previous research on faces and could suggest engagement online within the context of digital food culture is unique. The study also revealed that each individual influencer had a higher engagement with photos of food. However, there was a wide variance in individual profile results. Differences of 4%, 32%, 10% and 60% higher engagement with photos of faces indicates each influencers' unique approach to self-presentation (Mascheroni et al., 2015), the content they post and how they choose to build trust online (Casaló et al., 2017).

The LIWC analysis revealed no negative and no neutral tone. Results on sentiment of comments on images of faces and images of food with both high and low engagement had a highly positive tone. Words expressing positive emotion versus negative emotion and additional comment data reviews by the researcher validated the LIWC sentiment results and support the sentiment hypothesis. This suggests that Irish influencers have established a significant level of trust online from followers (Chang *et al.*, 2015). However, this could indicate that there is an expectation for positivity within the Irish plant-based, vegetarian and vegan digital food culture community and it may also suggest communication, positive sentiment and behaviour online are distorted through reflecting tone and reinforcing existing beliefs with the repetition of similar behaviours in social media spaces.

The thematic qualitative content analysis study found additional photographic image-based categories and identified themes around Irish plant-based, vegetarian and vegan food influencers supporting the hypothesis. The primary themes of Nature, Active Lifestyle and Pets indicate a tendency towards lifestyle posts. Within themes a specifically Irish context was presented with visual content of locations in Ireland as well as location specific activities (i.e. swimming in the sea in Dublin, walking in Wicklow, etc.,). In contrast, despite the time period over which data was gathered no visual content or references were made in relation to the COVID pandemic or restrictions in Ireland. Additional themes and categories presented, but were limited. Socio-political themes included 3 posts in relation to the Black Lives Matter movement and 1 in relation to direct provision in Ireland. There was one environmental eco-post presenting food composting. All other themes, excluding product promotion, related primarily to lifestyle and there was a notable exclusion of any visual expression of personal opinion. Additionally, while not conclusive, a preliminary review of posts from categories and themes suggests a high level of engagement with some posts receiving more engagement than photos of faces and photos of food.

6.1 Theoretical and practical implications

The findings of this study indicate the validity of theories on self-presentation (Goffman, 1959; Baumeister & Hutton, 1987) and align with previous research presenting photographs as key building blocks of self-presentation online (Chua & Chang, 2016; Djafarova & Trofimenko, 2019). Results mirrored previous studies suggesting that trust online is built through self-presentation online (Casaló et al., 2017) and indicated communication theories as presented by Walther (1996) and Suler (2004) are still relevant today.

While, the study also found that photos of faces received more engagement than photos of food, there is a suggestion that within the topic of food online faces are not as dominant on Instagram as previous psychological studies might have predicted (Morton & Johnson, 1991). This implies that changes in user behaviour online within digital food culture environments are potentially emerging. Results also

revealed other themes and categories of photographic imagery across all profiles; though there were variations for each individual influencer account. Despite this, all influencer profiles received high levels of engagement and positive user sentiment which may have practical implications and could present additional opportunities for social media marketers to expand their visual approach to building their brands online.

6.2 Strengths and Limitations

A mixed method approach offered larger scope for data appropriate for the study. Using both quantitative and qualitative studies facilitated examination of multiple factors; engagement, sentiment and additional themes. However, research was limited to looking at factors on Instagram alone and focusing solely on photographic images and text-based comments with the exclusion of video and Instagram stories.

Natural language content analysis of sentiment of text-based comments was conducted using Linguistic Inquiry Word Count (LIWC) and while accuracy of linguistic programs is still developing, LIWC interpretation is recognised as valid in providing insights into social psychology online (Tausczik & Pennebaker, 2010). LIWC data preparation included the removal of all emojis, # and hyperlinks; the @ symbol was replaced with "at" and the & symbol was replaced with "and." Data preparation ensured valid LIWC results. However, the removal of emoji from analysis presents a potential limitation to a richer understanding of sentiment and the replacement of @ symbol which indicates user content sharing through tagging or electronic word-of-mouth (eWOM) limits this as another possible indication of sentiment, engagement as well as trust online.

Research design also took the COVID pandemic and related restrictions in Ireland into consideration. However, due to the time the study was being conducted aspects of the research were also limited; influencers did not feel they could or "did not have the energy" to participate in interviews during this time which could have informed the study. Additionally, this area is emerging and there are currently a small number of Irish plant-based, vegetarian and vegan food influencers, so data was limited.

While there are existing studies on Instagram influencers, and specifically on food influencers (i.e. Jamie Oliver), no studies have been done on Irish Instagram food influencers and within the context of plant-based, vegetarian and vegan food. This highlights a strength of the study as a current, relevant topic in Ireland and globally and points to plant-based, vegetarian and vegan digital food culture as a strong area for future cyberpsychology research.

6.3 Future Research

Extension of this research study could include a number of approaches.

The study gathered Instagram data from existing data online. Future research could benefit from the inclusion of qualitative data from interviews with Irish Instagram influencers and from followers perspectives, as well as open-ended surveys with questions examining perceptions from both food influencers and their followers.

An additional direction for future research would be comparisons between groups. For example, a comparison between plant-based, vegetarian and vegan food influencers and another group of food influencers in Ireland would add to the understanding of the current Irish digital food culture within this area. An alternate direction for comparison could be between plant-based, vegetarian and vegan influencers in Ireland as compared to another or other countries giving insights into influences and behaviours in Ireland versus other countries.

6.4 Conclusion

Existing theories on influencer self-presentation on social media suggest that individuals present a curated, yet authentic version of themselves to build trust, prompt engagement, connect and communicate with their audience (Zhao et al. 2008). The current research contributes to this area within the field of cyberpsychology in what has been revealed to be a highly positive online community. Additionally, results from the study on engagement, sentiment and alternative themes may also inform influencers and marketers within plant-based,

vegetarian and vegan areas on strategies to reach, engage, grow and retain followers.

Food consumption is an important part of creating community and is evident within the development of digital food cultures (Lupton & Feldman, 2020). Alternative themes within an Irish Instagram context, while curated and potentially measured, suggest the development of interest with high levels of engagement indicating online social changes are emerging in relation to Irish plant-based, vegetarian and vegan digital food culture and related lifestyle choices.

The key takeaway from the study is the complexity of Irish plant-based, vegetarian, vegan food influencers and digital food culture on Instagram that extends beyond positivity and the presentation of content focused on food, faces or people.

7.0 References

Alshawaf, E., & Wen, L. (2015, July). Understanding digital reputation on Instagram: A case study of social media mavens. In *Proceedings of the 2nd European conference on social media ECSM* (pp. 19-27).

- Alsaleh, D. A., Elliott, M. T., Fu, F. Q., & Thakur, R. (2019). Cross-cultural differences in the adoption of social media. *Journal of Research in Interactive Marketing*.
- Andrei, A. L. (2014). Development and evaluation of tagalog linguistic inquiry and word count (LIWC) dictionaries for negative and positive emotion. The MITRE Corporation:

 Mclean, Virginia.
- Aramendia-Muneta, M. E., Olarte-Pascual, C., & Ollo-López, A. (2020). Key Image Attributes to Elicit Likes and Comments on Instagram. *Journal of Promotion Management*, *27*(1), 50-76.
- Baker, S., & Walsh, M. (2020). You are what you Instagram: Clean eating and the symbolic representation of food. In *Digital Food Cultures* (pp. 53-67). Routledge.
- Bakhshi, S., Shamma, D. A., & Gilbert, E. (2014, April). Faces engage us: Photos with faces attract more likes and comments on instagram. In *Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 965-974).
- Barnes, C. (2017). Mediating good food and moments of possibility with Jamie Oliver: Problematising celebrity chefs as talking labels. *Geoforum*, *84*, 169-178.
- Baumeister, R. F., & Hutton, D. G. (1987). Self-presentation theory: Self-construction and audience pleasing. In *Theories of group behavior* (pp. 71-87). Springer, New York, NY.
- Bia, B. (2018). Consumer Lifestyle Trends Report 2018. Bord Bia. Irish Food Bord.

Botsman, R. (2017). Who can you trust?: How technology brought us together and why it might drive us apart. Hachette UK.

- Botsman, R. (2012, June). The currency of the new economy is trust [Video]. TED

 Conferences.https://www.ted.com/talks/rachel_botsman_the_currency_of_the_ne
 w_economy_is_trust ?language=en
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101.
- Braun, V., & Clarke, V. (2014). What can "thematic analysis" offer health and wellbeing researchers?. *International journal of qualitative studies on health and well-being*, 9.
- Bryman, A. (1984). The debate about quantitative and qualitative research: a question of method or epistemology?. British journal of Sociology, 75-92.
- Casaló, L. V., Flavián, C., & Ibáñez-Sánchez, S. (2017). Antecedents of consumer intention to follow and recommend an Instagram account. *Online Information Review*, *41*(7), 1046–1063. https://doi-org.ezproxy.iadt.ie/10.1108/OIR-09-2016-0253
- Chang, Y. T., Yu, H., & Lu, H. P. (2015). Persuasive messages, popularity cohesion, and message diffusion in social media marketing. *Journal of Business Research*, *68*(4), 777-782.
- Chua, T. H. H., & Chang, L. (2016). Follow me and like my beautiful selfies: Singapore teenage girls' engagement in self-presentation and peer comparison on social media. *Computers in Human Behavior*, *55*, 190-197.
- Connolly, I., Palmer, M., Barton, H., & Kirwan, G. (Eds.). (2016). *An introduction to cyberpsychology*. ProQuest Ebook Central https://ebookcentral.proquest.com

De Solier, I. (2018). Tasting the digital: New food media. *The Bloomsbury Handbook of Food and Popular Culture*, 54-65.

- Digital Artefact (2020, September 9). In Wikipedia https://en.wikipedia.org/wiki/Digital artifact
- Djafarova, E., & Trofimenko, O. (2019). 'Instafamous'—credibility and self-presentation of micro-celebrities on social media. *Information, communication & society, 22*(10), 1432-1446.
- Doney, J., Wikle, O., & Martinez, J. (2020). Likes, Comments, Views: A Content Analysis of Academic Library Instagram Posts. *Information Technology & Libraries*, *39*(3), 1–15. https://doi-org.ezproxy.iadt.ie/10.6017/ital.v39i3.12211
- Elliott, N. (2015). How does your brand stack up on Facebook, Twitter and Instagram?. Forrester Research.
- Feehan, B. (2021, February 16). 2021 Social Media Industry Benchmark Report. Rival IQ. https://www.rivaliq.com/blog/social-media-industry-benchmark-report/#title-food-beverage
- Freberg, K., Graham, K., McGaughey, K., & Freberg, L. A. (2011). Who are the social media influencers? A study of public perceptions of personality. *Public Relations**Review, 37(1), 90-92.
- Goodman, M. K., & Jaworska, S. (2020). Mapping digital foodscapes: Digital food influencers and the grammars of good food. *Geoforum*, *117*, 183-193.
- Goffman, E. (1959). The Presentation of Self in Everyday Life. London: Allen Lane.
- Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. Handbook of qualitative research, 2(163-194), 105.

- Hosseinmardi, H., Mattson, S. A., Rafiq, R. I., Han, R., Lv, Q., & Mishra, S. (2015, December).

 Analyzing labeled cyberbullying incidents on the instagram social network.

 In *International conference on social informatics* (pp. 49-66). Springer, Cham.
- Hu, Y., Manikonda, L., & Kambhampati, S. (2014, June). What we instagram: A first analysis of instagram photo content and user types. In *Icwsm*.
- Johnston, J., & Goodman, M. K. (2015). Spectacular foodscapes: Food celebrities and the politics of lifestyle mediation in an age of inequality. *Food, culture & society, 18*(2), 205-222.
- Johnson, M. H., Dziurawiec, S., Ellis, H., & Morton, J. (1991). Newborns' preferential tracking of face-like stimuli and its subsequent decline. *Cognition*, *40*(1-2), 1-19.
- Kaushik, C., & Mishra, A. (2014). A scalable, lexicon based technique for sentiment analysis. *arXiv preprint arXiv:1410.2265*.
- Klassen, K. M., Borleis, E. S., Brennan, L., Reid, M., McCaffrey, T. A., & Lim, M. S. C. (2018).

 What people "like": Analysis of social media strategies used by food industry brands, lifestyle brands, and health promotion organizations on Facebook and Instagram. *Journal of Medical Internet Research*, 20(6). https://doi-org.ezproxy.iadt.ie/10.2196/10227
- Kukar-Kinney, M., & Xia, L. (2017). The effectiveness of number of deals purchased in influencing consumers' response to daily deal promotions: A cue utilization approach. Journal of business research, 79, 189-197.
- Laestadius, L. (2016). Instagram. In L. Sloan & A. Quan-Haase *The SAGE Handbook of social media research methods* (pp. 573-592). 55 City Road, London: SAGE Publications Ltd doi: 10.4135/9781473983847.n34

Lee, E., Lee, J., Moon, J. H., & Sung, Y. (2015). Pictures speak louder than words: Motivations for using instagram. Cyberpsychology, Behavior & Social Networking, 18(9), 552-556. doi:10.1089/cyber.2015.0157

- Leaver, T., Highfield, T., & Abidin, C. (2020). *Instagram: Visual Social Media Cultures*. John Wiley & Sons.
- Lewis, T. (2018). Digital food: from paddock to platform. *Communication Research and Practice*, *4*(3), 212-228.
- Lewis, T., & Phillipov, M. (2018). Food/media: eating, cooking, and provisioning in a digital world.
- Lupton, D. & Feldman, Z. (2020). Digital Food Cultures. London: Routledge.
- Mascheroni, G., Vincent, J., & Jimenez, E. (2015). "Girls are addicted to likes so they post semi-naked selfies": Peer mediation, normativity and the construction of identity online. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, *9*(1), 5.
- Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of management review*, *20*(3), 709-734.
- McAllister, D. J. (1995). Affect-and cognition-based trust as foundations for interpersonal cooperation in organizations. *Academy of management journal*, *38*(1), 24-59.
- Muqaddam, A. A., & Jin, S. (2018). "IS INSTAFAMOUS MORE TRUSTWORTHY THAN

 TRADITIONAL CELEBRITIES?" THE MEDIATING EFFECTS OF SOCIAL PRESENCE WITH

 INSTAGRAM INFLUENCERS AND THE MODERATING EFFECTS OF SELF-DISCREPANY

 ON CONSUMERS'ATTITUDE TOWARDS LUXURY BRANDING. In American Academy of

 Advertising. Conference. Proceedings (Online) (pp. 147-147). American Academy of

 Advertising.

Munoz, C. L., & Towner, T. L. (2017). The image is the message: Instagram marketing and the 2016 presidential primary season. *Journal of political marketing*, *16*(3-4), 290-318.

- Naf'an, M. Z., Bimantara, A. A., Larasati, A., Risondang, E. M., & Nugraha, N. A. S. (2019).

 Sentiment Analysis of Cyberbullying on Instagram User Comments. *Journal of Data Science and Its Applications*, *2*(1), 38-48.
- Peng, Y., & JEMMOTT III, J. B. (2018). Feast for the Eyes: Effects of Food Perceptions and Computer Vision Features on Food Photo Popularity. *International Journal of Communication (19328036), 12*.
- Pennebaker, J. W. (2017). Mind mapping: Using everyday language to explore social & psychological processes. *Procedia computer science*, *118*, 100-107.
- Pila, E., Mond, J. M., Griffiths, S., Mitchison, D., & Murray, S. B. (2017). A thematic content analysis of# cheatmeal images on social media: Characterizing an emerging dietary trend. International Journal of Eating Disorders, 50(6), 698-706.
- Power, A. (Ed.). (2018). *Cyberpsychology and society : Current perspectives*. ProQuest Ebook Central https://ebookcentral.proquest.com
- Rodriguez, M. Y., & Storer, H. (2019). A computational social science perspective on qualitative data exploration: Using topic models for the descriptive analysis of social media data*. Journal of Technology in Human Services, 1–32. doi:10.1080/15228835.2019.1616350
- Rosanensi, M., Madani, M., Wanggono, R. T. P., Setyanto, A., Selameto, A. A., & Wahyuni, S. N. (2018, November). Analysis Sentiment And Tourist Response To Rinjani Mountain Tour Based On Comments From Photo Upload In Instagram. In 2018 3rd International Conference on Information Technology, Information System and Electrical Engineering (ICITISEE) (pp. 184-188). IEEE.

Rousseau, S. (2012). Food and social media: You are what you tweet. Rowman Altamira.

- Puschmann, C., & Powell, A. (2018). Turning words into consumer preferences: How sentiment analysis is framed in research and the news media. *Social Media+ Society*, *4*(3), 2056305118797724.
- Scheibe, K., Philipps, J., Schaffarczyk, L., Nikolic, J., & Stock, W. G. (2018, June). A Sentiment Analysis on Miley Cyrus' Instagram Accounts. In *ECSM 2018 5th European Conference on Social Media* (p. 274). Academic Conferences and publishing limited.
- Statista. (2020, October 12). *Instagram users in Ireland 2017-2026*. https://www.statista.com/forecasts/1138796/instagram-users-in-ireland
- Suler, J. (2004). The online disinhibition effect. Cyberpsychology & behavior, 7(3), 321-326.
- Taher, A. (2019, September 9). *Instagram: Key Global Statistics 2019*. Digimind. https://blog.digimind.com/en/trends/instagram-key-global-figures-2019#:%7E:text=Food%20lovers%20consume%204%20times,on%20Instagram%20sh are%20food%20content.
- Tausczik, Y. R., & Pennebaker, J. W. (2010). The psychological meaning of words: LIWC and computerized text analysis methods. Journal of language and social psychology, 29(1), 24-54.
- Thomas, D. R. (2006). A general inductive approach for analyzing qualitative evaluation data.

 American journal of evaluation, 27(2), 237-246.
- Top 10 most relevant topics on instagram. (2019, April 18). Fanpagekarma. https://blog.fanpagekarma.com/2019/04/18/top-10-most-relevant-topics-on-instagram

Vaterlaus, J. M., Patten, E. V., Roche, C., & Young, J. A. (2015). # Gettinghealthy: The perceived influence of social media on young adult health behaviors. *Computers in Human Behavior*, 45, 151-157.

- Walther, J. B. (1996). Computer-mediated communication: Impersonal, interpersonal, and hyperpersonal interaction. *Communication research*, *23*(1), 3-43.
- Willig, C. (2013). Ebook: Introducing qualitative research in psychology. ProQuest Ebook

 Central https://ebookcentral.proquest.com
- Yang, K., Kim, H. M., & Tanoff, L. (2020). Signaling trust: Cues from Instagram posts. *Electronic Commerce Research and Applications*, *43*. https://doiorg.ezproxy.iadt.ie/10.1016/j.elerap.2020.100998
- Zou, P., & Liu, J. (2019). How nutrition information influences online food sales. *Journal of the Academy of Marketing Science*, *47*(6), 1132–1150. https://doi-org.ezproxy.iadt.ie/10.1007/s11747-019-00668-4

8.0 Appendices

8.8 Appendix A: Ethics Form A (green route)

IADT Department of Technology and Psychology Ethics Committee (DTPEC) Application Form 2020-2021

*More detailed information on the project is provided at end of this document

Section 2: External Agencies

Does your project involve recruitment from any external agency (e.g. a school, sports club, medical centre, voluntary organisation, or any other organisation outside of the IADT)?	Yes*	No X

^{*} You must include a letter from a senior manager of each organisation stating that you have approval to collect data within that organisation. Include copies each of these letters in the Appendices to your application. If the organisation has its own ethical review board (which is very common in some settings, such as hospitals), then you are also required to get ethical approval from that board prior to starting data collection, and to submit notice of this approval to your supervisor so that it can be forwarded on to the ethics committee. Some online forums also require permission to post requests for participants – make sure to check the relevant forum/organisation's code of conduct or terms and conditions. You do not need to include approval letters if you are conducting recruitment using mainstream social media routes (e.g., Twitter, Instagram, Facebook, Snapchat) to your own followers, and/or snowball sampling/word of mouth recruitment.

Section 3: Project Methodology – Please tick which type of project you are seeking approval from the DTPEC for. If your project involves mixed methods, then tick <u>all</u> which apply.

Route Type	Methodology	Tick here
Green Route (no	Theoretical paper / systematic literature review	
with participants required, and no data is	Novel analysis of an existing dataset gathered by another researcher or group which you are certain has abided by appropriate ethical procedures for the relevant discipline	
collected/recorde d which could identify participants)	Observation of participants in a public place in which they could reasonably be expected to be observed by strangers or in an online space which does not require users to log in to access.	Х
	Content analysis of material which is publicly available and does not require users to log in to access content.	Х
	Other method without direct contact with participants **	
Amber Route (direct contact with participants,	Requirements gathering for and/or user testing of a prototype which is highly unlikely to cause any harm or distress to participants and which does not aim to collect data from a potentially vulnerable group	
but no additional ethical considerations beyond the minimum requirements)	An experiment which is highly unlikely to cause any harm or distress to participants and which does not aim to collect data from a potentially vulnerable group	
	A survey/questionnaire design which is highly unlikely to cause any harm or distress to participants and which does not aim to collect data from a potentially vulnerable group	
	An observational study which is highly unlikely to cause any harm or distress to participants and which does not aim to collect data from a potentially vulnerable group	
	Content analysis research which is highly unlikely to cause any harm or distress to participants and which does not aim to collect data from a potentially vulnerable group	
	Interviews and/or focus groups which are highly unlikely to cause any harm or distress to participants and which do not aim to collect data from a potentially vulnerable group	
	Other method which is highly unlikely to cause any harm or distress to participants and which does not aim to collect data from a potentially vulnerable group **	
	1	

A survey/questionnaire design which may cause harm or distress to participants and/or which involves collecting data from any potentially vulnerable group
An observational study which may cause harm or distress to participants and/or which involves collecting data from any potentially vulnerable group
Content analysis research which may cause harm or distress to participants and/or which involves collecting data from any potentially vulnerable group
Interviews and/or focus groups which may cause harm or distress to participants and/or which involves collecting data from any potentially vulnerable group
Other method which may cause harm or distress to participants and/or which involves collecting data from any potentially vulnerable group **

^{**} If you are using a methodology not listed above then provide a short description (fewer than 100 words) here:

Section 4: Checklist of Attached Appendices and Other Completed Sections

Applicable			Section / Item	I have attached	I have checked	
Project Ethics				this	with my supervisor	
Route Colour				item/completed	and we have	
	Guide				this section	agreed that this
						item/section is not
						relevant to my
						project
						, ,,
			1	Section 1	Х	
			2	Section 2	Х	
			3	Section 3	Х	
			4	Section 4	Х	
			5	Letters of permission from any external		Х
				agencies to be used for data collection		
			6	Statement of approval from ethical review		Х
				boards in external agencies		
			7	Section 5 (Green Route Projects only)	Х	
Ī			8	Section 6 (Amber and Red Route Projects		
				only)		
			9	Section 7 (Amber Route Projects only)		
			10	Section 8 (Red Route Projects only)		
			11	Section 9 (Red Route Projects only)		

12	Evidence of why you need to complete a Red Route Project (see note in Section 8)	
13	Project Information Sheet (Red Route Projects only)	
14	Project Consent Form (Red Route Projects only)	
15	Project Demographic Questionnaire (Red Route Projects only)	
16	All Other Questionnaires and Data Collection Materials (Red Route Projects only)	
17	Project Debrief (Red Route Projects only)	

Section 5: Declaration of a Green Route project

I hereby declare that [all of / this aspect of (delete as appropriate)] my project involves no direct interaction between me and any research participants, and that having checked with my supervisor, that I do not need to seek informed consent from those whose data I use in my research. In addition, I will ensure that all data which I do gather is held in a manner which is compliant with GDPR, and will be deleted once it is no longer required (and definitely within 6 years of collection). At all times my study will be conducted in adherence to the ethical policies of the Psychological Society of Ireland and the British Psychological Society.

Student Signature: Rani Sheilagh Dunn Date: 7 October 2020

8.9 Appendix B: Engagement total calculations (.xls)

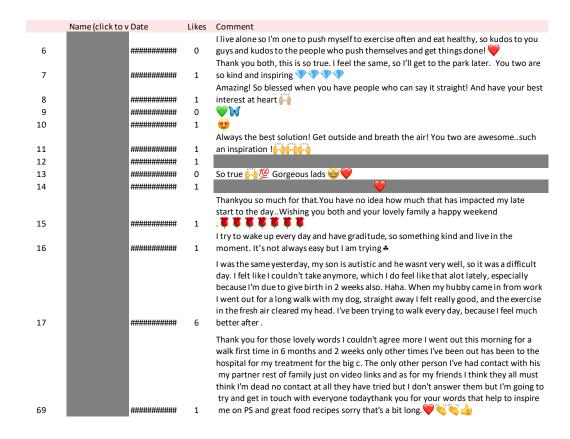
ENGAGEMENT: Food versus Faces (total numbers of likes + comments)

PROFILE	FACES	FOOD
Influencer 1	269,851	248,004
Influencer 2	7,078	3,586
Influencer 3	11,091	9,140
Influencer 4	64,621	16,241
TOTALS	352,641	276,971

8.10 Appendix C: Engagement data snapshot sample (Influencer 1)

ACCOUNT					
ACCOUNT Influencer 01	POST DATE 27-Aug-20	Type of image FACES 01	1803	COMMENTS 261	likes + comments total 4064
Influencer 01	03-Sep-20	FACES 02	5424	118	5542
Influencer 01	04-Sep-20	FACES 03	9586	451	10037
Influencer 01	09-Sep-20	FACES 04	5017	116	5133
Influencer 01 Influencer 01	11-Sep-20 14-Sep-20	FACES 05 FACES 06	13100 8334	654 213	13754 8547
Influencer 01	24-Sep-20	FACES 07	8438	310	8748
Influencer 01	27-Sep-20	FACES 08	7517	502	8019
Influencer 01	04-Oct-20	FACES 09	8270	245	8515
Influencer 01	07-Oct-20	FACES 10	13600	230	13830
Influencer 01 Influencer 01	08-Oct-20 11-Oct-20	FACES 11 FACES 12	10000 7107	300 834	10300 7941
Influencer 01	20-Oct-20	FACES 13	8590	110	8700
Influencer 01	29-Oct-20	FACES 14	5686	310	5996
Influencer 01	01-Nov-20	FACES 15	6077	106	6183
Influencer 01	07-Nov-20	FACES 16	6077	106	6183
Influencer 01 Influencer 01	11-Nov-20	FACES 17 FACES 18	3765 6942	120 293	3885 7235
Influencer 01	17-Nov-20 19-Nov-20	FACES 19	8865	293 297	7235 9162
Influencer 01	26-Nov-20	FACES 20	9683	354	10037
Influencer 01	05-Dec-20	FACES 20	2542	1073	3615
Influencer 01	05-Dec-20	FACES 21	9076	276	9352
Influencer 01	12-Dec-20	FACES 22	16200	967	17167
Influencer 01	25-Dec-20	FACES 23	7939 4608	119 65	8058 4673
Influencer 01 Influencer 01	26-Dec-20 01-Jan-21	FACES 24 FACES 25	4608 11500	253	46/3 11753
Influencer 01	04-Jan-21	FACES 26	7845	261	8106
Influencer 01	15-Jan-21	FACES 27	7610	162	7772
Influencer 01	17-Jan-21	FACES 28	5416	80	5496
Influencer 01	27-Jan-21	FACES 29	12000	188	12188
Influencer 01	24-Feb-21	FACES 30	19,500	360	19860
		FACES TOTALS	260,117	9,734	269,851
Influencer 01	POST DATE 07-Jan-21	Type of image FOOD 01	12300	COMMENTS 376	likes + comments total 12676
Influencer 01	07-Jan-21 09-Jan-21	FOOD 02	12300 8693	3/6 207	126/6 8900
Influencer 01	10-Jan-21	FOOD 03	11500	307	11807
Influencer 01	11-Jan-21	FOOD 04	11300	383	11683
Influencer 01	14-Jan-21	FOOD 05	13300	541	13841
Influencer 01	16-Jan-21	FOOD 06	8339	224	8563
Influencer 01 Influencer 01	18-Jan-21 19-Jan-21	FOOD 07 FOOD 08	11500 5289	360 153	11860 5442
Influencer 01	22-Jan-21	FOOD 09	9939	235	10174
Influencer 01	23-Jan-21	FOOD 10	6582	134	6716
Influencer 01	23-Jan-21	FOOD 11	7359	120	7479
Influencer 01	26-Jan-21	FOOD 12	5063	127	5190
Influencer 01 Influencer 01	28-Jan-21 29-Jan-21	FOOD 13 FOOD 14	5809	230 166	6039
Influencer 01	30-Jan-21	FOOD 15	5535 7590	228	5701 7818
Influencer 01	02-Feb-21	FOOD 16	6903	187	7090
Influencer 01	06-Feb-21	FOOD 17	7956	143	8099
Influencer 01	07-Feb-21	FOOD 18	9263	241	9504
Influencer 01 Influencer 01	09-Feb-21 11-Feb-21	FOOD 20	4060 8454	111 286	4171 8740
Influencer 01	12-Feb-21	FOOD 21	5448	104	5740 5552
Influencer 01	14-Feb-21	FOOD 22	6656	172	6828
Influencer 01	15-Feb-21	FOOD 23	8708	183	8891
Influencer 01	16-Feb-21	FOOD 24	5793	122	5915
Influencer 01 Influencer 01	18-Feb-21 19-Feb-21	FOOD 25 FOOD 26	7000 11,500	238 147	7238 11647
Influencer 01	19-Feb-21 20-Feb-21	FOOD 25	11,500 5715	286	11647
Influencer 01	23-Feb-21	FOOD 28	9449	176	9625
Influencer 01	23-Feb-21	FOOD 29	7860	172	8032
Influencer 01	27-Feb-21	FOOD 30	6621	161	6782
		FOOD TOTALS	241484	6520	248004
Influencer 01	25-Feb-21	OTHER	9322	680	
Influencer 01	25-Feb-21 21-Feb-21	OTHER	11,500	215	
Influencer 01	17-Feb-21	OTHER	5509	98	
Influencer 01	13-Feb-21	OTHER	12400	764	
Influencer 01	10-Feb-21	OTHER	5978	93	
Influencer 01 Influencer 01	08-Feb-21 05-Feb-21	OTHER	9618 6821	763 415	
Influencer 01	31-Jan-21	OTHER	15200	1313	
Influencer 01	25-Jan-21	OTHER	5661	312	
Influencer 01	21-Jan-21	OTHER	6805	268	
Influencer 01	20-Jan-21	OTHER	7552	257	
Influencer 01 Influencer 01	15-Jan-21	OTHER OTHER	20500	1034 989	
Influencer 01 Influencer 01	12-Jan-21 08-Jan-21	OTHER	11500 9727	989 604	
Influencer 01	05-Jan-21	OTHER	10900	828	
Influencer 01	28-Dec-20	OTHER	10300	615	
Influencer 01	24-Dec-20	OTHER	7957	517	
Influencer 01 Influencer 01	19-Dec-20	OTHER	18800 6103	925 408	
Influencer 01 Influencer 01	16-Dec-20 11-Dec-20	OTHER	6103 8318	408 491	
Influencer 01	08-Dec-20	OTHER	4409	67	
Influencer 01	06-Dec-20	OTHER	5937	153	
Influencer 01	01-Dec-20	OTHER	7957	472	
Influencer 01	27-Nov-20	OTHER	7422	507	
Influencer 01	22-Nov-20 16-Nov-20	OTHER	10500 6807	464 397	
Influencer 01	13-Nov-20	OTHER	9461	355	
Influencer 01	09-Nov-20	OTHER	6756	430	
Influencer 01	05-Nov-20	OTHER	16600	997	
Influencer 01 Influencer 01	30-Oct-20 26-Oct-20	OTHER	7666 9315	664 587	
Influencer 01 Influencer 01	26-Oct-20 24-Oct-20	OTHER	9315 19200	587 1129	
Influencer 01	18-Oct-20	OTHER	16100	705	
Influencer 01	15-Oct-20	OTHER	8415	431	
Influencer 01	11-Oct-20	OTHER	7158	347	
Influencer 01 Influencer 01	08-Oct-20 03-Oct-20	OTHER OTHER	11400 12200	741 991	
Influencer 01 Influencer 01	03-Oct-20 01-Oct-20	OTHER	12200 10300	991 609	
Influencer 01	30-Sep-20	OTHER	10300	166	
Influencer 01	27-Sep-20	OTHER	10600	908	
Influencer 01	25-Sep-20	OTHER	5756	260	
Influencer 01	23-Sep-20	OTHER	6741	411	
Influencer 01 Influencer 01	20-Sep-20 16-Sep-20	OTHER OTHER	21000 7203	2076 350	
Influencer 01	15-Sep-20 15-Sep-20	OTHER	7203 4998	350 221	
Influencer 01	14-Sep-20	OTHER	10600	815	
Influencer 01	10-Sep-20	OTHER	9188	341	
Influencer 01	07-Sep-20	OTHER	6248 18500	453	
Influencer 01	05-Sep-20	OTHER	18500	782	
	01-Son 20	OTHER	7460	gnc	
Influencer 01 Influencer 01	01-Sep-20 30-Aug-20	OTHER OTHER	7460 13100	896 1059	

8.11 Appendix D: Sample of raw comments data for sentiment analysis



8.5 Appendix E: Sample of cleaned comments data for LIWC analysis

```
proud!
Cutieeee also you're literally glowing
Palolem beach was my favorite in South Goa! Glad you're having a
blast!
Killing it !!
Cute
Congratulations
Congrats couldn't be more proud!!
Well done!
Well done!
Well done!
Well done!
Well done!
You go gir! !!
OMG HUGE LIFE WIN! Congrats
LEGEND
soo lovely
Unreal
How was it !
you were looocoovely beautiful
Great post thanks a million for sharing
Ya look damn good
so gorg
Everything about this
Yesss, love this real talk you are smashing it x
Pretty! We are open for collab a collab. Let us send you free
jewelry pieces to feature. I think you're perfect fit for our brand.
If you're interested don't hesitate to DM me and let's make it
happen
Where you get this dress from
Yes qween
Feel like you'd love "You are a badass at making money" by Jen
Sincero if you haven't read it already
Wooho go you good for you x
I'm also trying to change my mindset around money and working
towards a better financial situation! Go smash it
Love this, well said
Yes! Financial literacy is SO important! You go girl
Well done productive week
You are an inspiration to aspiring young male and female
entrepreneurs. Keep it going
Well done
You really nailed a few points about how it's taboo for women talk
about money, and take control of it at times too. I'll be following
closely to see any information and tips you have to offer.
Wow nice photo $
SO TRUEE!!! We need to swich the mindset and give ourselvs some
deep money talk
Awesome. I love the way you are taking charge of your financial
future and situation. Keep killing it.
I'd love to take Yin Yoga TTC
```

8.6 Appendix F: LIWC results sample screenshot

Filename	Segment	wc	Analytic	Clout	Authentic	Tone
Infl02_low_Faces-TXT-clean.txt	1	65	57.07	82.21	33.60	99.00
Infl01_low_FacesTXT-clean.txt	1	4732	64.12	67.59	47.79	99.00
Infl04_low_Faces_TXT-clean.txt	1	661	66.14	82.59	17.02	89.26
Infl03_low_Faces_TXT-clean.txt	1	137	59.69	99.00	2.08	99.00

8.7 Appendix G: Images snapshot sample for thematic content analysis

