Lillian Clark

is a senior lecturer at the Portsmouth Business School and course leader for the MA Digital Marketing programme. Her research interests include online consumer behaviour, culture and digital marketing, social media marketing and mobile advertising.

Levent Çallı

is an assistant professor in the Department of Information Systems at Sakarya University. He is particularly interested in e-marketing, e-commerce, social media applications and distance learning systems.

Lillian Clark
Portsmouth Business School
Richmond Building, Portland Street
Portsmouth PO1 3DE, UK
E-mail: lillian.clark@port.ac.uk

Personality types and Facebook advertising: An exploratory study

Lillian Clark and Levent Çallı

Abstract

The Five-Factor Model of personality types has been utilized by a number of computer science and psychology academics as a framework to explore aspects of internet adoption and, more recently, social media adoption and behaviours. While the use of personality type models in research has been less popular with marketing academics, the Five-Factor Model has been used to predict the emotional appeal of advertising based on personality types and potentially to provide guidelines for tailoring adverts accordingly. Given the growing impact of advertising on social media platforms, especially Facebook's ongoing refinements to its advertising models, the question arises for both academics and practitioners alike as to whether personality type models such as Five Factor can successfully be used to predict consumer responses to promotional messages delivered via social media. This paper describes an exploratory study in which participants were shown a series of Facebook promotional posts and asked to describe their responses, and to complete a questionnaire to assess Five-Factor personality type. The results of the study suggest that responses to Facebook promotional messages may indeed vary based on the user's personality type, but further research is needed to validate these findings. The study also underscores the challenges of assessing personality type in time-limited studies and suggests that further research is needed to evaluate the suitability of this approach for practitioners.

The growing importance of Facebook advertising

Introduction

The internet is unquestioningly a major factor in the lives of consumers. No longer just a means to search and obtain information, products or services, the digital world has evolved into a world in which content is created and shared among consumers, and in which social interaction is originated and facilitated. It is estimated that over 50 per cent of the 2.4 billion global online population regularly visited social networks in 2012, and this number is expected to increase to over 70 per cent in 2014.[1] One of the most popular social network platforms is Facebook, which in 2013 claimed to have 757 million users accessing its platform on a daily basis and reported US$2.34 billion revenue in advertising in the fourth quarter of 2013.[2] For marketing academics and practitioners alike, it is therefore of

growing importance not just to understand the overall behaviour of users on Facebook and other social media, but also how these users engage with the various types of advertising presented on social media platforms and whether there are any ways to segment or otherwise predict these levels of engagement.

Social media and personality traits

The Five-Factor Model of personality types

Identifying personality types as a predictor of online behaviour in order to improve the effectiveness of interaction design has long been a target of Human–Computing Interaction researchers, who have often used the Five-Factor Model of personality types[3] to measure correlations between these constructs and a variety of online behaviours.[4,5] The Five-Factor Model identifies five personality types as follows:

- Extraversion: Low levels indicate a quiet and shy personality, high levels an adventurous, social, talkative one.
- Conscientiousness: Low levels indicate a disorganized, easily distracted personality, high levels a strong work ethic, orderliness and thoroughness.
- Agreeableness: Low levels indicate a distant and reserved personality, high levels a friendly and sympathetic one.
- Neuroticism: Low levels indicate stability and emotional control, high levels a sensitive, nervous personality.
- Openness: Low levels indicate a personality resistant to change and grounded in tradition, high levels an innovative, novelty-seeking personality.

The Five-Factor types are usually assessed via a 44-item 'Big Five Inventory';[6] however, a shorter version — the 'Ten-Item Personality Inventory (TIPI)' — has been developed for studies where participant time is limited and quick results are needed.[7]

Using the Five-Factor Model in interaction research

Using the Five-Factor Model, Human–Computing Interaction researchers initially investigated internet adoption,[5] but have also explored social media adoption. For example, research by Ryan and Xenos[8] demonstrated that Facebook users exhibited higher levels of Extraversion and lower levels of Conscientiousness, that of Hughes *et al.*[9] showed that Facebook usage also correlated with Neuroticism, and that of Correa *et al.*[10] demonstrated correlations with higher levels of Openness.

Facebook user types

However, many of these studies have specifically examined adoption behaviour, rather than post-adoption behaviour. Given the size of the global Facebook population, it can reasonably be assumed that there must now be a substantial number of Facebook users who do not match the above profiles. Recognizing this, research has begun to focus more on correlations between personality type and specific behaviours within Facebook, for example uploading and tagging of photos,[11] and suggests that successfully identifying Facebook user personalities could improve advertising and recommender systems.

Advertising and personality traits

Using the Five-Factor Model in advertising research

While the Five-Factor Model has been used to investigate perceptions of service quality[12] and customer satisfaction,[13] personality traits have not been a popular means of market segmentation despite their potential applicability.[14] Personality traits have been used in academic research to examine consumer responses to advertising and, while some of this research has utilized country-/culture-specific personality scales,[15] there is a body of research that relies on the Five-Factor Model to specifically explore consumer responses to emotional appeals in advertising. For example, advertising that implies social reward or excitement has been shown to appeal to people with high levels of Extraversion,[16] while advertising that implies safety and security is more likely to appeal to people with higher levels of Neuroticism.[17] Those with low levels of Agreeableness have been found to be more likely to experience mixed emotions and consequently less favourable attitudes when viewing advertisements.[18] It has also been speculated that consumers with high levels of Conscientiousness would react more favourably to advertising that provides information rather than generates emotions.[14]

However, there is also some evidence that the relationship between personality type and advertising is not only more complicated, but may in fact be reversed. The work of Nairn and Berthon[19] suggests that consumer personality type scores can be influenced by the amount and type of advertising they have recently been exposed to, especially for children.

What can the Five-Factor Model tell us about responses to Facebook ads?

Despite the concerns of Nairn and Berthon,[19] research on personality type and advertising[16–18] and social media[8–10] suggests that identifying adult consumer personality types may offer insights into how users respond to promotional messages on social media and provide a possible basis for segmentation. The question arises as to whether the Five-Factor Model of personality type is a suitable framework for providing this insight and whether personality types can be reliably assessed in consumer research.

Methodology

Personality test, sponsored stories and page post ads

To begin to answer the question, an exploratory study was developed to examine the personality types and reported behaviours of UK Facebook users, as this was the platform identified as being both the most popular and the one in which promotional messages would be seen on a regular basis by users. In this study, participants were asked to complete an online questionnaire based on the TIPI version of the Five-Factor Inventory.[7] Participants were then presented with various scenarios representing the common types of promotional posts Facebook users could experience on their timeline in 2013. The first two scenarios showed promotional posts that appeared because of a friend's activity, the so-called 'Sponsored Story' (see Figure 1).

The next two scenarios showed promotional posts that appeared not because of friend activity, but rather as the result of a paid campaign, the so-called 'page post ad' (see Figure 2).

Figure 1: Facebook sponsored stories

Figure 2: Facebook page post ads

For each scenario, participants were asked to predict the likelihood of any actions they might take as a result (share, comment and so on), based on a 5-point Likert scale.

Selecting the sample

Participants were recruited via convenience sampling and the sample size was 155 staff and students at the University of Portsmouth. After screening for incomplete and duplicated responses, 108 responses were retained for analysis (see Table 1).

Results and discussion

Scoring by personality type

To assess personality type, the TIPI results were scored by recoding the reverse-score items and then the question pairs were averaged, as per the methodology developed by Gosling.[20] For all five question pairs, average scores were calculated for each individual participant and then a general arithmetic mean was calculated for each variable to derive personality traits. Table 2 shows the results of this scoring for the study's participants.

No single personality type dominated

While previous studies had identified Extraversion and Openness as predictors of Facebook adoption, in fact no single personality type dominated among the participants. While this could be a limitation of using the 10-item TIPI questionnaire, this may also be testimony to the ubiquity and popularity of Facebook, and emphasizes the argument that Facebook research needs to move beyond examinations of adoption and focus on post-adoption behaviours.

A paired-samples *T*-test was conducted to determine whether there was any significant difference between responses to page post ads versus sponsored stories, regardless of personality type. The results are shown in Table 3.

A clue to Facebook's termination of sponsored stories?

These results suggest that there were some significant differences in the way participants viewed engagement between page post ads and sponsored stories. For example, participants said they were more likely to like a page or comment on a page post ad (2.03 and 1.44) than a sponsored story (1.72 and 1.29). However, participants also said they more likely to share a sponsored story (1.7) than a page post ad (1.3). These differences are intriguing, especially in light of Facebook's recent announcement that it will be ending the sponsored stories programme in 2014.[21] While it was

Table 1: Respondent profiles

Variables	Answers	Frequency
Gender	Male	41
	Female	67
Age	18–25	75
	26–35	17
	36–50	7
	51–65	9
How often do you currently use Facebook?	I don't use Facebook anymore	3
	I use Facebook rarely (once a week or less)	13
	I use Facebook several times a week	31
	I use Facebook every day	61
Which device do you usually use to access Facebook?	Laptop	37
	Tablet	12
	Mobile	49
	Desktop	10

Table 2: Responses to page post ads and sponsored stories by personality type

Variables			Mean	Standard deviation	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Personality Type	1	Openness	3.43	0.72														
	2	Extraversion	3.29	0.64	0.134													
	3	Neuroticism	3.30	0.68	0.137	−0.023												
	4	Agreeableness	3.22	0.80	−0.024	0.069	−0.158											
	5	Conscientiousness	3.40	0.67	−0.031	0.026	0.134	0.144										
Paid	6	Share	1.30	0.51	−0.082	−0.071	−0.191	−0.013	−0.208[b]									
	7	Page like	2.03	0.63	0.069	0.066	0.105	−0.284[a]	−0.026	0.297[a]								
	8	Like	1.74	0.69	−0.079	0.210[b]	−0.064	−0.002	−0.105	0.231[b]	0.358[a]							
	9	Promotion link	2.04	0.74	0.064	−0.070	0.016	−0.046	−0.093	0.264[a]	0.436[a]	0.173						
	10	Comment	1.44	0.50	0.082	−0.024	−0.270[a]	0.085	−0.039	0.553[a]	0.221[b]	0.092	0.105					
Sponsored stories	11	Share	1.70	0.51	0.202[b]	0.285[a]	−0.073	0.019	−0.021	0.303[a]	0.054	0.185	0.035	0.021				
	12	Page like	1.72	0.60	0.148	0.048	0.068	−0.155	−0.161	0.116	0.480[a]	0.372[a]	0.196[b]	0.176	−0.070			
	13	Like	1.74	0.70	−0.059	0.174	−0.109	−0.068	−0.236[b]	0.208[b]	0.260[a]	0.607[a]	0.295[a]	0.118	0.216[b]	0.355[a]		
	14	Comment	1.29	0.50	−0.133	−0.149	−0.209[b]	0.146	−0.323[a]	0.323[a]	0.068	0.111	0.070	0.460[a]	−0.089	0.256[a]	0.165	
	15	Promotion link	1.96	0.72	0.168	0.032	0.050	−0.152	−0.022	0.084	0.286[a]	0.091	0.660[a]	−0.094	0.087	0.105	0.229[b]	−0.036

[a]Correlation is significant at the 0.01 level (2-tailed).
[b]Correlation is significant at the 0.05 level (2-tailed).

Table 3: Reported responses to page post ads and sponsored stories

Engagement Tools	Mean	t	N	Significance
Share				
Page post ads	1.3	−6.808	105	0.000
Sponsored stories	1.7			
Like post				
Page post ads	1.74	0.000	105	1.000
Sponsored stories	1.74			
Like page				
Page post ads	2.03	5.071	105	0.000
Sponsored stories	1.72			
Comment				
Page post ads	1.44	2.917	105	0.004
Sponsored stories	1.29			
Click on link				
Page post ads	2.04	1.380	105	0.170
Sponsored stories	1.96			

speculated that this decision was taken for legal reasons,[22] perhaps these types of posts were also seen by Facebook management as a less effective form of advertising, despite the likelihood of sharing.

Pearson correlation analysis was used to examine the relationships between the Five-Factor personality traits and responses to page post ads versus sponsored stories, as shown in Table 2.

Extraverts share sponsored stories, but like page post ads

Participants with higher levels of Extraversion were more inclined to share sponsored stories (0.285), as were those with higher levels of Openness (0.202). Given that these two personality types have previously been identified as more willing to share information overall,[11,23] this result is hardly surprising; however, there was no correlation with the sharing of page post ads. On the other hand, Extraverts were more inclined to 'like' page post ads (0.210) but not sponsored stories. While this personality type has been identified as more willing to like posts overall[11], it is unclear why the page post ad would generate these results and this therefore requires further study.

Conscientious types more reticent, but also unpredictable

Participants with higher levels of Conscientiousness were reluctant to share page post ads (−0.208), but there was no correlation with sharing sponsored stories. However, these participants also showed a disinclination to like (−0.236) or comment on (−0.323) sponsored stories. This personality type has previously produced inconclusive results for sharing information overall,[23] but other studies have shown that this personality type negatively correlates with activities such as liking Facebook posts, preferring instead to upload and organize photos.[11]

Neurotic types reluctant to engage

Participants with higher levels of Neuroticism showed some reluctance to comment on both page post ads (−0.270) and sponsored stories (−0.209), but there was no correlation with sharing either kind of post. Given the shyness of this personality type, this could possibly be indicative of a reluctance to comment on any sort of post.

Agreeable types are the most difficult to identify

Participants with higher levels of Agreeableness showed a reluctance to 'like' pages (−0.284), but again no particular correlation with sharing either kind of post. While it is tempting to assume that this personality type

would be more prone to engage in actions that support a post, in fact research into how this personality type affects any sort of online behaviour has been inconclusive,[23,24] and results for this particular personality type may be unreliable when using the TIPI questionnaire.[25]

Limitations and future directions in research

Need to repeat with larger and more diverse group

While a number of interesting results have come from this exploratory study, there are also several limitations that must be considered in determining the value of this research and future directions. The first limitation concerns the sample size. At 108 participants, the sample size was relatively small, and while an effort was made to increase ecological validity by not relying exclusively on a student sample, the fact remains that nearly 70 per cent of the respondents were aged 18–25 years. Given the recent rapid growth in Facebook usage among those aged 45–54 years,[26] it can be argued that the sample used was not an accurate reflection of the profile of Facebook users nowadays, and that this study would need to be repeated with a more demographically representative sample.

Measure actual behaviour, rather than predicted response

The second limitation of this study is that it examined intentions, rather than actual behaviours. There is often a disconnect between reported and actual consumer behaviour,[27] and a study that explores actual sharing and liking of promotional posts on Facebook timelines would prove to be invaluable, if issues of privacy and informed consent could be addressed.

Is a short survey enough to assess personality?

The third limitation of this study was the use of the 10-question TIPI survey to assess personality type. While this methodology has been shown to be useful in marketing research, especially when a full personality assessment is not practical,[25] it can only measure very broad domains for each personality type, and cannot achieve the accuracy of a full-length Five-Factor study.

Expanding via Facebook applications — With care

One suggestion that could overcome the above limitations would be to convince participants to complete a full personality survey and allow subsequent access to their Facebook profiles and timelines, as was the case with the myPersonality Facebook application,[28] which up to 2012 produced a satisfying large sample size for personality type studies on Facebook usage[11] and sentiment analysis.[29] An updated version of this application could also potentially provide a suitably large data set for studying specific responses to promotional messaging.

An appetite for testing and sharing

Currently, a number of 'what character type are you?' quizzes from entertainment websites such as Zimbio and Buzzfeed are seen and shared by Facebook users, indicating an appetite for taking (and sharing) personality tests. However, moving from a simple quiz to a timeline-tracking application has some serious ethical and operational considerations. The application would have to be restricted to those over 18 years of age and users would have to be made aware before installation that the application would need full access to their timeline information as well as the reasons why this was necessary, as was the case for myPersonality. Given the current coverage of internet privacy issues in the popular press (eg NSA surveillance, the Heartbleed data security problem) users may be more reluctant to provide this access than in the past.

Conclusions

Validating Facebook's decision

This exploratory study set out to answer the question of whether a personality type model, such as Five Factor, could be used to predict responses to promotional marketing displayed on a consumer's Facebook timeline. In fact, some patterns of potential interest were discovered, as well as some further justification for Facebook's recent decision to discontinue certain types of promotional posts. Whether this type of research could successfully be expanded and eventually integrated into practice will require further validation by replicating the study across a larger and more demographically representative sample — and eventually other social networks. Consideration would also have to be given to the validity of the short-form TIPI questionnaire as a suitable instrument for assessing personality types and the trade-offs between the accuracy provided by a consumer filling out a 44-item questionnaire and the ease and speed of completing 10 questions.

How practitioners can benefit from this research

From a practitioner perspective, the ability to segment consumers by personality type could provide brands with the information needed to improve customization and targeting of social media campaigns. For example, consumers identified by their Facebook activity as having higher levels of Extraversion could be encouraged to like and share emotional brand messages on their timeline, while consumers identified as having higher levels of Conscientiousness, who are theoretically more reluctant to share, could instead be provided with informational brand messages on theirs. Understanding the relationships between a consumer's personality and their engagement with social media campaigns would not only benefit brands and agencies, but also social media network providers themselves by improving engagement and conversion rates for social media advertising.

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