An investigation of how the Australian brewing industry influence consumers on Twitter

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Abstract

In this paper we develop and test hypotheses around organisations' behaviour on social media and its effect on consumers' responses. We draw on the notion of the market maven to underpin the research and suggest that organisations on social media need to focus on acting in a maven-like manner in order to influence audiences in Twitter. We collected data from the Twitter accounts of the entire brewing industry in Australia, analysing organisational postings and their impact on influence (follower numbers, retweets) of their respective Twitter accounts. In particular, we look at message formulation and language, native platform behaviour, reciprocity and persistency variables. Findings suggest that establishing a larger follower base requires an interactive, one-to-one and reciprocal approach. In order to influence audiences to retweet organisations need to speak the 'native platform language' and employ a soft-sell strategy. Maven-like behaviour tends to reside in the small independent craft breweries. We offer the conclusion that these craft breweries have realised that, on social media, a different approach to marketing is required: the organisations must act in a maven-like manner.

Keywords: Mavenism; big data; social media; Twitter; influence; engagement

1   Introduction

Social media is said to be fundamentally changing the way we communicate, collaborate, consume and create content (Aral, Dellarocas, & Godes, 2013; As-Saber et al., 2014; Malsbender, Hoffmann, & Becker, 2014). Because of its dynamic nature and the potential of on-going consumer-to-consumer communication, it is vitally important for businesses to understand how to use it in order to reach and influence customers (Augar & Zeleznikow, 2014; Mangold & Faulds, 2009). The dynamic and on-going conversational nature of social media lends itself to a 'pull' rather than the traditional 'push' strategy in terms of attracting an audience (Hodis, Sriramachandramurthy, & Sashittal, 2015). That is, consumers need to be drawn towards something of interest to them, rather than being the passive recipients of expressly promotional messages (Fournier & Avery, 2011). Digital audiences can easily avoid advertising by using ad blockers that remove native ads from feeds on any social media platform. Further, they can easily stop following an annoying or irrelevant brand. The key is to connect with the audience in such a way as to 'softly sell' a commercial message that is perceived as both non-intrusive and of interest to receivers.

Essentially, mastering social media relates to understanding how messages spread. Traditionally, the view has been that a minority of members in a society hold certain abilities that make them exceptionally persuasive in spreading ideas to others. The assumption is that these exceptional individuals are highly informed, respected and well-connected and, as such, are needed in order for new trends to reach ordinary people (Cha, Haddadi, Benevenuto, &

Gummadi, 2010). In the two-step flow theory, these individuals are referred to as 'opinion leaders' (Katz & Lazarsfeld, 1955), in the diffusion of innovations theory they are called 'innovators' (Rogers, 1983), while Gladwell (2000) refers to then as 'salesmen, connectors and mavens'. With the arrival of social media, this traditional view may be turned upside down. Ordinary users can be as influential as these exceptional minorities. In essence, Andy Warhol's '15 minutes of fame' (Violet, 1988) has been realised through online social channels.

Social media represents a virtual reality in which any user may - at any given point in time - perform the role of the 'exceptional individuals' referred to in the traditional view of how messages spread. From a marketing perspective, the traditional framework also poses a problem as to how to find these 'mystical characters' and further convince them to support your cause. Instead of searching for special people with wholly abstract personality traits, we seek to investigate observable behaviours which organisations can use in their communication.

2   Literature review

Gladwell's (2000) framework, is typical in terms of the traditional view of how messages spread. Referred to as 'the law of the few' it reflects the 'Pareto Principle' (Sanders, 1987), which suggest that about 80% of effects come from 20% of causes (e.g. 80% of a business revenue comes from 20% of its customers). One implication of the law of the few is that small businesses necessarily need the help of powerful, influential individuals to spread their messages. However, this 'law' does not explain how small businesses can spread messages without the help of powerful 'friends'. As we will show, this influence may be achieved more directly through social media channels.

In Gladwell's framework, 'connectors' are individuals who have ties to many different realms and act as conduits between them, helping to engender connections, relationships, and 'cross-fertilisation' that otherwise might never occur. On social media, such 'cross-fertilisation' can happen frequently when messages are forwarded. For example, when consumers re-post a message from a business to their friends, those friends re-post the message to their friends and so on (Dang-Pham, Pittayachawan, & Nkhoma, 2015). As such, special people are not a necessity in order to influence a large number of consumers. Indeed, ordinary social media users can also be influential (Cha et al., 2010). Further, 'salespeople' are said to have an unusual charisma that allows them to be extremely persuasive in inducing others' buying decisions and behaviours (Gladwell, 2000). To be 'extremely persuasive' seems dangerous on social media where consumers typically resist advertising (Fournier & Avery, 2011) and instead tend to be looking for information (Ho & Dempsey, 2010) or entertainment (Myrick, 2015). Given this backdrop the concept of a market maven offers a more useful focus for attention. However the maven concept itself has undergone considerable reanalysis.

Market mavenism is a notion first developed by Feick & Price (1987). In the original conception market mavens are people with marketplace knowledge who have a strong compulsion to help other consumers by enabling them to make informed decisions (Price, Feick, & Guskey-Federouch, 1988). They are described as special people with a particular personality trait, and in this respect the concept is closely related to opinion leaders. More recently, Goodey & East (2008) have criticised the maven concept, finding that there are no unified personality traits for mavens, and further that they do not provide more consumer advice than 'non-mavens'. Such critique may explain why the maven concept has been extended from its original conceptualisation, a process that has been accelerated by developing communication technologies.

The internet, and in particular the exponential growth of social media and user-generated content, have provided an ideal environment for a new type of maven to flourish: the e-maven (Belch, Krentler, & Willis-Flurry, 2005). In mainstream and niche product and service categories, e-mavens are using social media to build networks of followers, to share and comment on marketing messages, and to act as industry experts guiding consumers (Ho & Dempsey, 2010).

Ho and Dempsey (2010) define e-mavens as those who frequently forward online content. A recent study of mavens' online referral behaviour found they were four times more likely to refer products or services than other consumers (Walsh et al. 2012). Such argumentation lends itself the notion of domain specific mavens. That is, Feick and Price's (1987) market maven spreads market knowledge in general, while Ho and Dempsey's (2010) e-maven is restricted to spreading content online.

Changing demographic and market conditions and their associated fragmentation is not a new idea (Zeithaml, 1985). The internet's tendency to split the market into consumer tribes is a key driver in such fragmentation (Hosanagar, Fleder, Lee, & Buja, 2014). This opens up the opportunity for 'specialised e-mavens' on social media in niche markets. If there are e-mavens, there may also be mavens within particular social networking sites as well as within particular product categories. Mavenism could be said to have fragmented in the same way that markets have fragmented. However, the traits of maven-like behaviour are still relevant when referring to a person with a passion for spreading information, helping others and continuously updating their own knowledge on their area of interest.

Key aspects of market mavens are high sociability (Feick et al. 1987) and strong social influence (Clark et al. 2005). Social media has created a perfect habitat for market mavens, as they can use it to easily gather and disseminate market information and become hubs of expertise. Several studies have shown how mavens affect others through social media (Cui et al. 2012; Gnambs et al. 2011; Goldenberg et al. 2009; Stephen et al. 2010). For example, key bloggers can make or break brands (Chau et al. 2012; Luetjens et al. 2007). However, in the disruptive environment that is social media, the boundaries between organisation and consumer become blurred. We posit that modern business models require organisations to become maven-like to influence and provide value to consumers. Rather than 'hunting for the mavens' we investigate how businesses can act as mavens themselves in order to produce messages of interest to consumers and hence to generate value to themselves as producers. In particular, the aim of this paper is to investigate maven-like behaviour by modelling big data collected from Twitter.

3 Conceptual development

One of the most popular platforms for brands and individuals who wish to stand out and be heard is the microblogging site Twitter. Twitter is used by many for sharing news items, gossip and opinions relevant to events of the day (Langley, Hoeve, Ortt, Pals, & van der Vecht, 2014). Its messages or tweets can contain text, images, videos, links and #hashtags, all within a limit of 140 characters. By default, tweets are publicly available, making Twitter a particularly rich source of big data.

Studies show that those who access Twitter for informational purposes do so for its utilitarian value and cognitive stimulation whereas information needs on Facebook are more related to socialisation with friends (Hughes, Rowe, Batey, & Lee, 2012). According to twittercounter.com's 'top 100', the most followed businesses on Twitter are news and sports organisations, reflecting that consumers use the platform when they are searching for information. Maven-like behaviour from businesses on Twitter needs to be informative, because consumers are using the platform for information search (Smith, Fischer, & Yongjian, 2012).

A need for cognition is related to mavenism because it is based on gathering and spreading information. Indeed, the most successful businesses on Twitter, in terms of influencing consumers, are actively spreading information that may be useful to them. A few recent examples from the most followed brands on Twitter is warranted:

- *How to brew a soft cup of coffee [video insert].* Tweeted by @Starbucks which has 11.7 million followers. The tweet received 576 retweets.

- *Be the first to know. The official go-to destination for #TheNextGalaxy real-time news, stories and more.* @SamsungMobile account tagline; 11.5 million followers.

- *The Division launches tomorrow on PS4. Read our Q&A to learn about @Ubisoft's infected NYC: http://...* Tweeted by @PlayStation which has 10.3 million followers. The tweet received 439 retweets.

In all these examples the businesses are appealing to consumers' search for information about their products. Instead of simply advertising their products, they are offering expert advice and acting as a knowledge hub for others. Starbucks is leading the way as a coffee connoisseur (in the eyes of its followers) by offering consumers expert advice about how to brew coffee at home. Samsung is appealing to consumers who are looking for the latest in mobile technology, while at the same time putting themselves at the forefront of new knowledge. Finally, PlayStation is offering the latest in game development, with a link to an interview they did with Ubisoft – a video game developer and publisher. As such, they are all acting like mavens since they are actively collecting and assimilating relevant information for others. By doing so, these businesses have reached a substantial number of followers and their content is also frequently retweeted. That is, their maven-like behaviour is associated with influencing consumers in two different ways; retweeting and followers.

3.1   Influence of Twitter; followers and retweets

Focusing on the potential to lead others to engage in a certain act, we highlight two different interpersonal activities businesses can engage in on Twitter. First, consumers interact by following updates of businesses who post interesting tweets. Second, consumers can pass along interesting pieces of information from businesses to their own followers. This is known as retweeting, which can be identified by the use of RT @username. These activities represent different types of influence a business can have on consumers:

1.   'Indegree influence', the number of followers of a user, indicates the size of the audience for that user (Cha et al., 2010).

2.   'Retweet influence', the number of retweets containing one's name, indicates the ability of that user to generate content with pass-along value (Cha et al., 2010).

Following someone on Twitter means that you agree to see his or her messages in your own 'feed' on an on-going basis. It is of course possible to ignore the information from some of the accounts followed, but the number of followers is nevertheless a measure of potential reach or influence (Twitter, 2015). Either way, in commercial settings, a business needs to 'persuade' consumers to follow their accounts in the first place (de Vries, Gensler, & Leeflang, 2012). Being followed on Twitter gives a business the potential to connect with consumers who will receive the communication the business place in their feed. However, they may be 'passive' followers, who never read the tweets of particular people they follow. As such, having a large number of followers is a necessary but insufficient condition; a business also need to focus on 'retweet influence' with consumers.

Indegree influence represents a user's popularity. It is, however, not related to other important notions of influence related to audience engagement, i.e., retweets (Cha et al., 2010). By re-posting a message a connection has taken place, and the business has the potential of connecting with even more consumers through the network of the re-tweeter. In contrast to indegree influence, retweet influence is known to be driven by the content value of the tweet (Cha et al., 2010). In order to achieve maven-like characteristics, businesses need to master both indegree and retweet influence. That is, they need to have reach of their messages through indegree influence and they need to provide content that is of value to consumers so that they are willing to retweet the content and further spread the message. Research has not established how businesses should use the tools available on Twitter to increase their popularity and what type of content is perceived as valuable to consumers. In the following, we draw on previous research on Twitter in order to build hypotheses for how businesses can improve their influence. We look at four areas of communication on Twitter and how this can be used to gain influence. These are: message formulation and language, native platform behaviour, reciprocity and persistency.

3.2 Message formulation and language

Brands are mentioned in around 20 per cent of tweets (Smith et al., 2012). However, tweets need to contain information in order to attract consumers' attention (de Vries et al., 2012). Language in itself can be more or less engaging. As suggested by Brodie et al. (2013), consumers are stimulated by the information they find online and will further engage with businesses that provide them with the information they need. Twitter's interactive nature is particularly suited to conversations rather than self-presentation (Kietzmann, Hermkens, McCarthy, & Silvestre, 2011). Broadcasting tweets is an important part in the process of gaining more followers (Zhang, Jansen, & Chowdhury, 2011). However, it seems fair to assume that the same message broadcasted repeatedly will be less engaging than new and interesting stories. Repeat messaging in an advertising-like manner may also be the antithesis of maven-like behaviour; it does not show knowledge – nor does it help others. As such, we hypothesise that using a wide vocabulary and discussing a wide range of topics would result in a higher number of followers and a higher likelihood of material being shared.

We assess average vocabulary by calculating the lexical diversity across tweets made by an organisation (Cheong, 2013; Wagner & Strohmaier, 2010). The measure of lexical diversity is defined as the ratio of unique words divided by the total number of words, creating a mean vocabulary size per message (Wagner & Strohmaier, 2010). The efficiency of this metric lies in its ability to summarise the range of vocabulary deployed by a writer, which is mode- and purpose-dependent (McCarthy, 2006). Lexical diversity belongs to the family of 'Luhn summarisation techniques', which depends on the frequency analysis of the words in a document as defined by Luhn (1958). In the case of a Twitter message, the 'document' is thus defined as the entire tweet (Cheong, 2013). Also, to remove 'noise' from the content of the tweet, 'stopwords' (commonly-occurring function words such as articles, pronouns, particles, and conjunctions) should not be counted (Luhn, 1958). This will yield a subset of words which are more significant in capturing the essence of the tweet (Cheong, 2013; Luhn, 1958). We hypothesise that;

H1a   *A higher lexical diversity of tweets is positively associated with higher levels of indegree and retweet influence.*

The frequency of using question marks gives us an indication of the level of interactivity sought in the communication. This is an important pointer to the use of Twitter as a way to foster interactions, rather than broadcasting information (Kumar et al., 2010; Van Bruggen, Antia, Jap, Reinartz, & Pallas, 2010). Asking questions would be one means of encouraging consumers to engage through following and retweeting, and would show recognition of the power of user generated content (Kaplan & Haenlein, 2010; Liu-Thompkins & Rogerson, 2012). One way of seeking connections and information through Twitter is to ask questions to followers (Naaman, Boase, & Lai, 2010). Thus, we hypothesise that;

H1b   *Use of question marks in tweets is positively associated with higher levels of indegree and retweet influence.*

The use of exclamation marks indicates strong feelings or high volume (shouting). Proclaiming strong feelings is a means to attract consumers' attention, and thus to engage with them (de Vries et al., 2012). Exclamation marks are a means of conveying the importance of an announcement, which may include new important knowledge to consumers. Thus, we hypothesise that;

H1c   *More frequent use of exclamation marks in tweets is positively associated with higher levels of indegree and retweet influence.*

3.3 'Native' platform behaviour

Native platform behaviour refers to using the communication tools native to that specific site. On Twitter, this means posting photos and videos, using 'hashtags' (tagging a particular message with keywords preceded by a #hash symbol), and sending tweets directly to other users. We hypothesise that using such tools would contribute to a higher number of followers

and a higher likelihood of material being shared (the characteristics of a market maven). Recent research by Twitter themselves (and others) has found that posts including media such as photos and videos garner significantly higher levels of engagement than more 'basic' text-based posts (e.g. Rogers, 2014). The top commercial organisations in the world all use images and videos on Twitter, with many drawing their content from their consumers' user-generated photos and videos (Lawrence, Fournier, & Brunel, 2013; Smith et al., 2012). Thus, we hypothesise that;

H2a *More frequent use of pictures and videos in tweets is positively associated with higher levels of indegree and retweet influence.*

From authoritative literature on Twitter and microblogging platform behaviour in the early 2010s (Cheong, 2013), the #hashtag is an important part of the message as opposed to merely describing a message (Huang, Thornton, & Efthimiadis, 2010). #Hashtags increase the likelihood of a tweet being engaged with, as users are inclined to comment or share their views/commentary (Huang et al., 2010) – particularly after a #hashtag has gained popularity. By using hashtags, organisations are classifying their tweets according to the wider, relevant conversations taking place on Twitter. Hashtagged keywords link the tweet to an existing conversational topic – or create one from scratch – for others to join (Burton & Soboleva, 2011). This recognises the power of C2C conversations on social media (Bruns & Burgess, 2012; Libai et al., 2010), which are enabled by hashtags on Twitter. The hashtags also make it easier for consumers to search for specific information. Helping consumers find what they are looking for may also be perceived as maven-like behaviour and related to influence. Thus, we hypothesise that;

H2b *More frequent use of hashtags in tweets is positively associated with higher levels of indegree and retweet influence.*

Twitter offers the possibility of directly addressing another user in a tweet by including the recipient's username in the tweet message, i.e. @user tweets. Studies on direct interactions (tweets with '@' signs), are intended to signal interpersonal correspondence, with emphasis on the Twitter platform for purposes of conversation and collaboration (Boyd, Golder, & Lotan, 2010; Honeycutt & Herring, 2009). We assessed this in two ways: (a) the percentage of tweets containing @users and (b) the number of unique @users tweeted to. This allows us to assess whether directly addressed tweets were sent between a large or small number of users. One-to-one interactions directly with consumers are important on social media in order to connect with them (Baek, Ahn, & Choi, 2012; Brodie, Ilic, Juric, & Hollebeek, 2013; Hollebeek, 2013; van Doorn et al., 2010). In particular, organisations are likely to reach out to influential consumers, such as those with expertise or a large number of followers (Aral & Walker, 2012), which would increase the level of influence. Such direct interaction would further entail maven-like traits, assuming that the information provided is of value. Thus, we hypothesise that;

H2c *More frequent use of direct interactions in tweets is positively associated with higher levels of indegree and retweet influence.*

3.4 Reciprocity

Retweeted messages have elements of information sharing and social tagging (Cheong, 2013), as in the presence of URLs and hashtags [with the motivation of] spreading tweets, starting a conversation, and drawing attention to the originating use (Boyd et al., 2010). Everyday Twitter users have a roughly-equal follower-to-friend ratio (FFR close to 1.0), regard Twitter as a social network and tend to exhibit reciprocity in their relationships (Krishnamurthy, Gill, & Arlitt, 2008). As a social network, these empirical observations in the early days of Twitter indicate an inherent reciprocity.

The most obvious way to reciprocate on social media is through retweeting another user's message. Retweeting illustrates the extent to which organisations would forward (or re-post) content posted by other users. This is important, as retweeting is a form of interacting with consumers and others through sharing their tweets. This is a particularly common behaviour

on Twitter where content-sharing through retweeting is often easier for organisations than creating their own content (Shi, Rui, & Whinston, 2014). Also, retweets are shown in the originator's account, which makes the process of reciprocation visible to others. We hypothesise that;

H3a More frequent use of retweets is positively associated with higher levels of indegree and retweet influence.

Twitter also allows users to mark other users' tweets as favourites. By marking a tweet as a favorited a user indicates that they have read and liked it (similar to a 'Like' on Facebook). This is important as it shows that organisations are using Twitter as an information source, paying attention to the content posted by their consumers. This is a key benefit of using social media, not least in terms of product innovation ideas, consumer support, new consumers and business partners (Chau & Xu, 2012; Moran & Gossieaux, 2010). We hypothesise that;

H3b More frequent use of favourites is positively associated with higher levels of indegree and retweet influence.

Attempts at generating followers on Twitter may be maximised by reading, liking and retweeting the posts of others, and not just 'announcing' one's own presence via a barrage of tweets. To be able to do this, organisations need to follow other users. This would certainly be evidence of an organisation embracing the two-way nature of social media (Baek et al., 2012). Thus, we hypothesise that;

H3c More frequent use of following is positively associated with higher levels of indegree and retweet influence.

3.5 Persistency

Finally, a measure for persistency on Twitter is important. This is because it seems likely that both the number of followers and retweets increase with time and with a high volume of tweets. We suspected that a maven-like Twitter account would continue to grow in terms of followers and retweets over time. Likewise, a higher volume of tweets over time would increase the likelihood of more consumers following and sharing information from the account. Length of time on Twitter facilitates the identification of new accounts and the degree of seniority of users (Cheong, 2013). Further, messaging frequency (as a function of length of time on Twitter and number of tweets) reflects the degree of a user activity on Twitter. However, users typically show more activity in the early life of their Twitter account, and after their first few tweets a significant proportion of users leave their Twitter accounts idle (Cheong, 2013). Therefore, we posit that a certain degree of seniority is a prerequisite for a maven-like Twitter account. Thus, we hypothesise that;

H4a Length of time on Twitter is positively associated with higher levels of indegree and retweet influence.

H4b Number of tweets is positively associated with higher levels of indegree and retweet influence.

Constructs	Twitter variables	Description
Indegree influence	Total number of followers	Indegree influence is a function of the Twitter audience's willingness to follow the communication of a particular organisation. It directly indicates the size of the audience for that user.
Retweet influence	Total number of retweets by others	Others' willingness to retweet a message means that the business communication is reaching further. It indicates the ability of businesses to generate content with pass-along value.
H1: Message formulation and language	Lexical diversity Exclamation marks! Question marks?	A message's formulation is likely to relate to how it is perceived by the audience. E.g., repetition of advertising may have little influence on consumers.
H2: 'Native' platform behaviour	Photos and videos #Hashtags (total and unique) @User (total and unique)	Consumers would be more likely to connect with and follow businesses and retweet their content when they appear 'native' on Twitter.
H3: Reciprocity	Total number of retweets Total number of favourites Total number of following	Following and sharing others' content signals that an organisation is interested in what others do. It also shows that they are reciprocating and are willing to build a relationship.
H4: Persistency	Month and year joined Total number of tweets	The age and volume of an account may accumulate followers over time (assuming users are not 'unfollowing'). Similarly, persistency in messaging should increase the likelihood of retweets.

Table 1: Construct and variable summary

4   Research Context

We focused our study on Australia, since Australian consumers are amongst the world's heaviest users of social media (Sensis, 2012). This includes commercial organisations, with almost 80 per cent of Australian businesses being present on social media (Sensis, 2014). The social media usage of Australian organisations therefore represents a valuable context in terms of informing and understanding social media more widely.

We also chose to focus on Australia because of the composition of the industry under investigation. The Australian brewing industry is mature and established, dominated by large multinational corporations (mass breweries). The two largest brewing organisations (UK-based SAB Miller and Japanese Kirin Holding) control approximately 90% of the overall market. However, the recent emergence of numerous small, independent 'craft breweries' is noteworthy.

Within this wider context the way large and small organisations use Twitter appears to differ. National statistics indicate that large organisations are more active than their smaller competitors on social media, as well as having their activities coordinated by a marketing department rather than the owner/management, which is often the case in small organisations (Sensis, 2014). Small organisations still perceive social media as having a positive impact on their business, although their interactions with consumers are often modest (Augar & Zeleznikow, 2014).

The Australian brewing industry can be said to be mature as well as highly competitive. In such industries, social media investments are related to firm value (Plangger, 2012), which suggests that the Australian brewing industry should be visible and active on social media. As a result of the competitive nature of this industry, the new entrants (craft breweries) are also likely to have an entrepreneurial orientation (Watne & Hakala, 2013), with a focus on innovation. Such a focus is also said to be a key factor in successful social media implementation in large organisations (Valos, Polonsky, Mavondo, & Lipscomb, 2014).

From a mass brewery perspective, consumers have difficulties telling beer products apart (Jacoby, Olson, & Haddock, 1971). Craft breweries are perceived as offering a 'counter-culture'

to the mass breweries (Carroll & Swaminathan, 2000). They routinely differentiate their products according to taste and the raw materials they use (Adams, 2006) and they are typically more focused on educating consumers to know more about beer and brewing (Watne, 2012). Thus, craft brewers tend to act in a more maven-like way. They might focus on influencing those looking for information on Twitter, in order to foster engagement in their social media marketing.

5   Methodology

All Twitter streams (i.e. handles, or users) for all breweries and beer brands in Australia with an active Twitter account at the time were 'harvested' in mid-June 2014. This allowed us to compare and contrast the communication of large and small players from a complete sample of the industry. Through such a comparison we were able to observe how influence on social media differs between large and small organisations in the same industry. To obtain this data, we searched the websites of the three major brewing organisations in Australia, and further searched Twitter for accounts related to the breweries they own as well as the brands in their portfolios. We further searched the member sections of industry organisations for craft breweries: The Australian Craft Beer Industry Association (CBIA) and the Australian Real Craft Brewers Association. From this we were able to obtain a complete list of all beer brands and breweries in Australia with an active Twitter account; 95 accounts in total. Of these, 83 were regarded as craft breweries, (according to CBIA definition) and 9 were mass breweries.

In order to harvest the Twitter data from the breweries, we used a 'best-effort' data collection strategy (Cheong & Lee, 2010) involving the '*Twitter REST API*' (Application Programming Interface). The Twitter REST API is a service that obtains raw data about a particular handle or user and their messages, allowing researchers to harvest tweets for free from particular users (Russell, 2011). Our technique is preferred over conventional scraping methods – such as manually copying-and-pasting text from the Twitter website – as the Twitter REST API allows for automated and systematic harvesting of tweets. The REST API has been used in various research projects since 2010 (Cheong, 2013; Serrano & Iglesias, 2016), which is testament to its stability and effectiveness in extracting Twitter data. We harvested tweets posted by Australian beer brands and breweries using a collection of 'scripts' written in the Perl programming language by first using the Search API (a subset of the REST API).

For some of the measures, the persistence and volume of activity would greatly impact the validity of the findings. Lexical diversity, for example, tends to converge when analysing larger amounts of text (Cheong, 2013). Since some of the breweries were more active than others, certain measures would be biased by such variation in activity. Accordingly, we randomly selected 100 tweets from each account in order to analyse the measures related to message formulation and native platform behaviour (N=9.500 tweets from the 95 accounts). This was favoured over the most recent 100 tweets as this would give a disproportionate sample of tweets from the last few weeks (from some brewers who are active on Twitter) but would return results from far back for more sporadic Twitter users. Thus, we avoided potential bias related to particular events that some brewers would have tweeted about. The use of stratified random sampling (of users and messages) – as opposed to using all the samples for a given stratum of users – for the study of Twitter phenomena has been widely documented, e.g. (Cheong & Lee, 2009; Cormode, Krishnamurthy, & Willinger, 2010; Ehrlich & Shami, 2010).

6   Results

Most of the mass brewers had Twitter accounts for their brands, as distinct from the breweries themselves, while all of the craft breweries had Twitter accounts only for the brewery. Large differences were found within the dataset in terms of individual activities on Twitter. For example, the most active tweeter in the sample sent 21,900 tweets while the least active sent only 142 tweets. Table 2 gives an overview of the popularity of mass and craft breweries as well as their Twitter use.

Table 2 shows some differences between the craft breweries and the mass breweries. Overall, the differences were minor, but due to the low number of mass-brewers we were very lenient in the reporting of significant differences (<0.1), in order to tease out nuances of difference. In terms of how they communicate, craft brewers are using a wider vocabulary. This may be a common attribute of a maven-like behaviour; they talk about a large number of topics and engage in conversations as opposed to posting advertising messages. However, they use fewer question marks than the mass brewers. This could be related to them giving answers as opposed to asking questions. Also, maven-like behaviour is seen in craft brewers posting more visual tweets and communicating directly with others (@user) more frequently. Finally, craft brewers are more active on average, posting more tweets than the mass brewers. In the following, we investigate the hypotheses.

Activity	Mean		t-test	
	Craft	Mass	t	Sig.
Influence*				
Indegree (Followers)	1666.0	2149.3	.847	.399
Retweet influence	318.3	206.4	-.713	.481
Message formulation and language**				
Lexical diversity	0.63	0.59	-2.036	.070
? Tweets	10.3	21.0	4.906	.000
! Tweets	35.4	36.7	.175	.865
'Native' platform behaviour**				
Photo/Video	127.7	61.6	-1.935	.064
# Tweets	20.9	27.8	.984	.351
# Unique	24.6	20.2	-.641	.536
@ Tweets	64.3	48.0	-1.732	.087
@ Unique	86.0	57.1	-1.788	.107
Reciprocity*				
Retweet	23.4	15.3	-1.431	.186
Favourites	142.9	200.6	.555	.580
Following	789.9	675.7	-.497	.629
Persistency*				
Joined (MM/YY)	-	-	-	-
Total Tweets	1921.7	1022.3	-2.034	.050
* The measure relates to overall activity.				
** The measure relates to a random sample of 100 tweets from each account.				

Table 2: Descriptive statistics and t-test for differences between craft and mass brewers

There were large variations in activity between the breweries in the dataset. As such, the data was considered as non-normal (Ho, 2014) so we recoded all the variables from the harvested tweets into 5-point scales. The data was recoded based on the variety within each variable. For example, number of followers were recoded into; 1.) 0-500; 2.) 501-1000; 3.) 1001-1500; 4.) 1501-2500; and 5.) >2500. The data was recoded in order to achieve a normal distribution, appropriate for parametric tests (Ho, 2014). From this, a correlation analysis could be conducted between followers and retweets of consumers and Twitter communication from the organisations. Table 3 shows the correlations found within the dataset.

Business activity	Consumer Response: Indegree influence	Consumer Response: Retweet influence
Message formulation and language		
Lexical diversity	0.34**	0.19
Question mark?	-0.07	-0.06
Exclamation point!	0.02	-0.19
'Native' Twitter behaviour		
Photo/videos	0.58**	0.27**
# Tweets	-0.17	0.33**
# Unique	-0.20	0.42**
@ Tweets	0.26**	0.58**
@ Unique	0.32**	0.57**
Reciprocity		
Retweet	0.19	0.60**
Favourites	0.19	0.34**
Following	0.45**	0.21*
Persistency		
Joined	-0.49**	0.27**
Total Tweets	0.61**	0.07

Table 3: Significant correlations between Twitter popularity and communication style

When it comes to message formulation and language, lexical diversity was correlated with indergee influence. There were no correlations with retweet influence. Regarding the native platform behaviour, it was clear that these variables had a larger impact on both indegree and retweet influence. All the variables were related to retweet influence, and some also to the number of followers. Reciprocity between the organisations and the audience was also evident, with strong correlations between activities and retweets. Finally, in terms of persistence, strong correlations were also found with followers and volume of tweets. However, a negative correlation regarding year joined was also found, counter to our hypothesis H4a for indegree influence.

Our next analysis was to regress all the variables in the study with the dependent variables (indegree and retweet influence). Many of the correlations in Table 3 did not contribute to the variance in followers and retweets in the regression analysis. Since number of followers and retweets were statistically unrelated to each other (confirming the work of Cha et al., 2010), we looked at them separately. This also confirms that our measures of indegree and retweet influence are conceptually different – consumers follow and retweet for different reasons. The results of the stepwise regression analysis are illustrated in Table 4.

Variable	Std. β	t (Sig.)	F (Sig.)	R Sq.	Adj. R Sq.
Retweet influence					
(Constant)		2.928 (.004)			
Retweet	.341	3.510 (.001)			
@ Tweets	.318	3.369 (.001)	23.044 (.000)	.506	.484
Exclamation point!	-.204	-2.717 (.008)			
# Unique	.200	2.524 (.013)			
Indegree influence					
(Constant)		6.265 (.000)			
Total Tweets	.342	4.042 (.000)			
Joined	-.418	-5.594 (.000)	28.943 (.000)	.563	.543
@ Unique	.197	2.503 (.014)			
Following	.190	2.295 (.024)			

Table 4: Stepwise Regression analysis between business activity, retweets and followers

Hypothesis		Support	
Message formulation and language		Indegree influence	Retweet influence
H1a	A higher lexical diversity of tweets is positively associated with higher levels of indegree and retweet influence.	*Partly supported (correlation analysis)*	Not Supported
H1b	Use of question marks in tweets is positively associated with higher levels of indegree and retweet influence.	Not supported	Not Supported
H1c	Use of exclamation marks in tweets is positively associated with higher levels of indegree and retweet influence.	Not supported	Not supported (opposite relationship)
'Native' platform behaviour			
H2a	More frequent use of pictures and videos in tweets is positively associated with higher levels of indegree and retweet influence.	*Partly supported (correlation analysis)*	*Partly supported (correlation analysis)*
H2b	More frequent use of hashtags in tweets is positively associated with higher levels of indegree and retweet influence.	Not supported	Supported
H2c	More frequent use of direct interactions in tweets is positively associated with higher levels of indegree and retweet influence.	Supported (unique @ user)	Supported (total @ user)
Reciprocity			
H3a	More frequent use of retweets is positively associated with higher levels of indegree and retweet influence.	Not supported	Supported
H3b	More frequent use of favourites is positively associated with higher levels of indegree and retweet influence.	Not supported	*Partly supported (correlation analysis)*
H3c	More frequent use of following is positively associated with higher levels of indegree and retweet influence.	Supported	*Partly supported (correlation analysis)*
Persistency			
H4a	Length of time on Twitter is positively associated with higher levels of indegree and retweet influence.	Not supported (negative correlation)	*Partly supported (correlation analysis)*
H4b	Number of tweets is positively associated with higher levels of indegree and retweet influence.	Supported	Not supported

Table 5: Hypotheses supported and not supported

Retweeting others' content, sending @ user tweets, avoiding exclamation marks and using unique hashtags contributed to 48 per cent of the variance in retweet influence. Further, 54 per cent of the variance in indegree influence was explained by the regression. Consumers are most likely to follow those who tweet often, use videos and photos, send direct @ user tweets to a large number of users (unique @ user tweets), and follow them back. It seems that consumers also follow newer accounts, indicated by the negative relationship with year joined. For conciseness, Table 5 summarises the hypothesis testing.

7   Discussion

Hypothesis 1 related message formulation and language to indegree and retweet influence. We found little support for this hypothesis. For the question and exclamation marks, we had proposed that these be used to attract attention which would lead to followers and retweets (de Vries et al., 2012). However, using exclamation marks had a negative impact on retweets, which indicates that it may be perceived as 'shouting' and thus ignored. There was partial support for an association between tweets with a higher lexical diversity and followers, which supports Brodie et al.'s (2013) assertion that consumers are information-seeking and that organisations providing it are more engaging. We did not find a relationship between lexical diversity and retweet influence, which suggests that retweeting is not a function of how much different information is provided, but rather whom it is provided to and how it is delivered. A few example tweets illustrate this:

- Tweet reflecting business shouting advertising messages about where to buy the beer in question: "*Good to hear! @darren_rolfe Pure at 1st Choice Liquor. I'm stocking up!!!*". This tweet may be seen as positive for the person it was directed at. Nevertheless, it is unlikely that it will have any further influence on other consumers because it shouts advertising at the audience.

- A business talking about a wide range of topics: 1. "*Just wondering, what beer styles would you like to see MPB brewing in 2013? Can't promise we'll brew 'em though...*". 2. "*Congratulations Renee & Leigh on the birth of Corey Leigh Denett at 5.33pm today weighing in at 4.4kg.*". 3. "*Our Specialty Beer is an English style IPA at 5.1% ABV. Pouring golden amber in colour this IPA delivers sweet...*". First tweet is a call to action; encouraging followers to directly engage in a technical discussion about beer styles. The second tweet reflects a 'resting maven' that is being human and congratulating a friend that gave birth. In the last tweet, the maven is back with a technical description of their new product (note; without a direct selling proposition).

Hypothesis 2 related native platform behaviour to indegree and retweet influence. We found partial support for this hypothesis. There were associations between the number of pictures and videos in tweets and the number of direct interactions in tweets with followers and retweets. Often, photos and videos from the breweries, and indeed the brewing process, were featured; demonstrating the expertise of the maven. Visual media have been shown to garner higher engagement in other industries and on other platforms (Lawrence et al., 2013; Smith et al., 2012). Likewise, the ability to interact directly with an individual consumer (@user) is an important means of improving influence on social media (Baek et al., 2012; Brodie et al., 2013; Hollebeek, 2013; van Doorn et al., 2010). We also found support for an association between the use of hashtags and retweets, but not followers. Hashtags enable C2C conversations on particular topics on social media and thus their potential to facilitate connections is clear (Libai et al., 2010). The link between hashtags and retweets is interesting as it suggests that consumers search and use hashtags to further circulate information they find useful or interesting. On Twitter, retweet influence is a function of following themed conversations and trends (Bruns & Burgess, 2012), which suggests that consumers are adding information to what they already are interested in and know about. A few example tweets illustrate the usage of hashtags and @user:

- Tweets with purposeful usage of hashtags directly addressed to individual consumers: 1. "*Four Tastes matched with #SunsetAle @rhcl3121 #craftbeer #GBW2013*

> *#foodporn @ Richmond Hill Cafe & Larder http://...*". 2. "*@PouringInMelb @theparkbeer Must get out to The Park at Werribee for our American Brown on hand pump for @GoodBeerWeek #GBW2013 Any left?*". 3. "*@calibrebeer Wow Dan. Stiff competition. Nice one. #realcraftbeer #australianowned #independent #loveyourwork*". The first two tweets are purposely using the hashtag '#GBW2013'; referring to Good Beer Week – a Melbourne based beer festival. This makes it easy for users to find and forward their events during the festival. The last tweet is using hashtags that signals craft and independence. Further, the @user in the tweets are directed towards beer venues and blogs. These are users with larger networks and as such an increased opportunity for more exposure, followers and retweets. Acting like a maven means that businesses need to navigate their way within their area of expertise and take advantage of other knowledge-hubs that they can easily reach within the Twitter community.

Hypothesis 3 related reciprocity to indegree and retweet influence. We found partial support for this hypothesis, where the number of users followed by an organisation associates positively with the number of followers they have. This emphasises the interactive and reciprocal nature of social media where organisations must follow consumers to understand how best to engage with them (Baek et al., 2012; Brodie et al., 2013). There was also partial support for an association between following and retweet influence, which reinforces the point. We additionally found positive associations between the number of retweets and favourites by the organisation, and retweet influence on consumers. When organisations actively engage with consumers by sharing their material, current consumers will reciprocate (Shi et al., 2014). The followers a business already has are those who are most likely to retweet their messages (Zhang et al., 2011). As such, reciprocity is the key to connecting with existing followers by listening to them. It is also the key to attracting new followers by starting to follow them. Here are a few examples of retweeting (RT):

- 1. "*RT @Beer_Maven: Learn how to distinguish different beers http://...*". 2. "*RT @GoodBeerWeek: Learn to BBQ with beer at @matildabaybeer! Just a few tix left for some of the sessions! http://...*". The first tweet is forwarding a blog post about beer styles posted by a beer enthusiast under the name '@Beer_Maven'. An example of connectivity and acting like a maven by spreading information about beer. The second tweet is forwarding a tweet from the Good Beer Week festival, where consumers can learn more about barbequing with beer. Again, a maven at work spreading relevant information.

Finally, hypothesis 4 related persistency of activity on Twitter to indegree and retweet influence. We found partial support for this hypothesis; the overall number of tweets is positively associated with followers, but not retweets. Indeed, the second most followed brewery in the sample also had the highest volume of tweets. Creating 'noise' through high volumes of tweet seems to impact indegree influence, especially when mixed with other effective means such as purposeful use of hashtags. However, retweet influence may require more interactive tweets over a longer period of time. The length of time an organisation is on Twitter is positively associated with followers, but not retweets. This may be explained by the fact that the longer an organisation has been on Twitter, the number of retweets can only increase. However, the number of followers can increase and decrease.

8 Implications

In total, craft breweries in Australia had 143,276 followers on Twitter. In contrast, only 19,344 Twitter users followed the mass breweries. This means that the craft breweries are outperforming the mass breweries with an 8:1 ratio in terms of indegree influence on Twitter. In most industries, small businesses struggle to match the level of impact large businesses have on social media. However, in the brewing industry in Australia, the opposite is the case; the businesses that holds about two per cent of the market share, holds about 90 per cent of the share of the voice on Twitter. This reflects that the Pareto Principle (20/80) may indeed be

turned upside down on social media. Craft brewers are better than their multinational counterparts in terms of influence on consumers on Twitter; consumers interested in the category will turn to them for information. Thus, we characterise these organisations as displaying maven-like behaviour. Social media is an ideal environment to behave like a maven. Organisations can share market-related information and network effectively and efficiently by acting like mavens. This may also be a reflection of Twitter as a social media platform. As suggested by Hughes et al. (2012), Twitter is more a forum for information while Facebook is more geared towards social connections.

This research makes methodological contributions around the collection and analysis of big data. We conceptualised publically available variables as reflective of maven-like behaviour through indegree and retweet influence – specifically, number of followers and number of retweets. We empirically illustrate that there is a range of variables around message formulation and language, native platform behaviour, reciprocity and persistency that are positively associated with such influence. This theoretical advancement allows us to investigate marketing concepts through big data, which is a key field for future research.

Our findings underline that acting in a maven-like manner can be an effective way of using social media by an organisation. Firstly, the use of visual media on Twitter is essential to influence consumers. These should be complemented with the use of relevant hashtags and, where possible, direct interactions with consumers. This enables marketing efforts to become part of a conversation and to join in on trending conversations relevant to their organisation. Reciprocity is vital. To achieve indegree influence organisations need to follow consumers in order to encourage them to follow them back. Retweet influence on the other hand relates to interacting with consumers through retweeting and spreading the content of other users. This will enable consumers to be powerful advocates for the organisation. Although organisations may gain a following relatively quickly through tweeting, to become a maven necessitates the longer time that a reciprocal approach requires. Finally, we recommend that organisations use the publicly available big data on Twitter to investigate the nature of their own Twitter behaviour, and draw on the findings from this paper to modify their behaviour in order to help them to think like and act as mavens on social media.

9   Limitations / Future research

The observations made in this study suggesting that small companies do a better job than larger companies, might not be extended to other industries. However, other industries marked by a few 'generalist' large players, and several small 'specialist' players, may also benefit from acting like a maven in their social media strategy. Examples might be found in producers of other alcoholic beverages, various food industries, supermarkets or other retailers. Further research may look at a cross-section of 'generalist' and 'specialist' businesses in order to further investigate the differences between the two. In our data, we only had 9 generalists (mass brewers), which is insufficient for drawing statistically significant conclusions. By looking at more than one industry, or perhaps more than one country, differences in communication and response between particular groups can be made. However, cultural differences are likely to exist and the findings here may not be extended to other countries with different consumption patterns and a different composition of the industry in question.

This study was conducted in Twitter. In many ways, the Twitter platform differs from the more widely used Facebook platform. On Facebook consumers often have regular user accounts while brands tend to create fan pages that consumers can 'like'. In other words, interactions between businesses and consumers are not the same on the two platforms. The simple and public transparency of Twitter, is not reflected on Facebook. It is unclear to what extent consumers perceive a Facebook 'like' as similar to following someone in Twitter. Thus, further research should investigate whether our framework can be implemented on other social media platforms.

10 Conclusion

This study demonstrates that big data can be used to investigate organisational influence on Twitter. We demonstrate that the analysis of big data can be used to test hypotheses and explain relationships, and not just to develop propositions. Consumers allow retweet influence from organisations that communicate directly with them, that join conversations relevant to them via #hashtags and that are open to a reciprocal relationship with them. Further, indegree influence is related to how businesses communicate directly (one-to-one) with a large number of consumers and on a variety of topics. Thinking like and acting as a maven by providing relevant information to consumers and actively engaging on delivering such information is one way of achieving greater influence on consumers through Twitter.

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