



# #betelnut:

An Exploration of Betel Nut Culture on Instagram

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# Betel nut and public health

- Consumed as psycho-stimulant by over 600 million people worldwide
- Betel nut chewing
  - Sense of euphoria
  - Well-being
  - Increased capacity to work
- 2012 World Health Organization (WHO) report recognizes betel nut use as an urgent public health threat faced by the Western Pacific region, including Micronesia
- Cancer is one of the two leading causes of mortality in the U.S.-Affiliated Pacific Islands (USAPI)



# Betel nut: A global phenomenon

- Indian subcontinent (India, Nepal, Pakistan and Bangladesh)
- Taiwan
- Southern China
- Southeast Asia (Indonesia, Thailand, Philippines, Guam, Malaysia, and others)
- Melanesia (Vanuatu, Solomon Islands, Papua New Guinea, and Fiji)
- Betel nut has received far less research attention than other stimulants such as tobacco, coffee or tea





# Instagram and visual networked media

- 800 million users and 500 million using the site daily (Systrom, 2017)
- 95 million photos and videos generated 4.2 billion “likes” each day (2016)
- Instagram is an international community
- Over 80 % of the Instagram community is overseas, outside the U.S
- Three distinct characteristics of Instagram
  - Social photography application and a prominent form of visual social media
  - Designed for Smartphone
  - Facilitates social interaction through visual and subjective nature of content

# Visual social media

- Instagram privileges photo-sharing and visual communication
- Research has shown that these elements
  - Fashion the development of online identities (Marwick, 2015)
  - Build brand presence (Carah & Shaul, 2016)
  - Encourage networked photography (Lobinger, 2016)
- Post-processing features establish norms of highly edited photos (Marwick, 2015)
- Instagram also affords textual communication
  - Captions and comments

# Smartphone and everyday life

- Primarily smartphone application
  - Portability and habitual use of mobile media
- Omnipresent nature of smartphones
  - Any random moment can be captured from parties to the rhythm of domestic life
- Reflect one's everyday point of view and facilitate digital storytelling (Chesher, 2012; Vivienne & Burgess, 2013)
- Strong social norm that posts are 'in the moment'

# Social engagement

- Images are uploaded and shared directly from the smartphone
  - Strong understanding of audience, self-presentation and identity (Abidin, 2016)
- Hashtags afford identification with online communities
  - Shared space, practice or identity (Laestadius, 2016)
  - Intimate publics (Olszanowski, 2015)

# Social engagement

- Engagement on Instagram (Zulli, 2018)
  - Likes and comments
  - Pauses on images
  - Applying and clicking hashtags
- Engagement moves content into wider audiences and represent common marketing industry practice (Carah & Shaul, 2016)
- Actively pursued by celebrities, social media influencers and cultural intermediaries



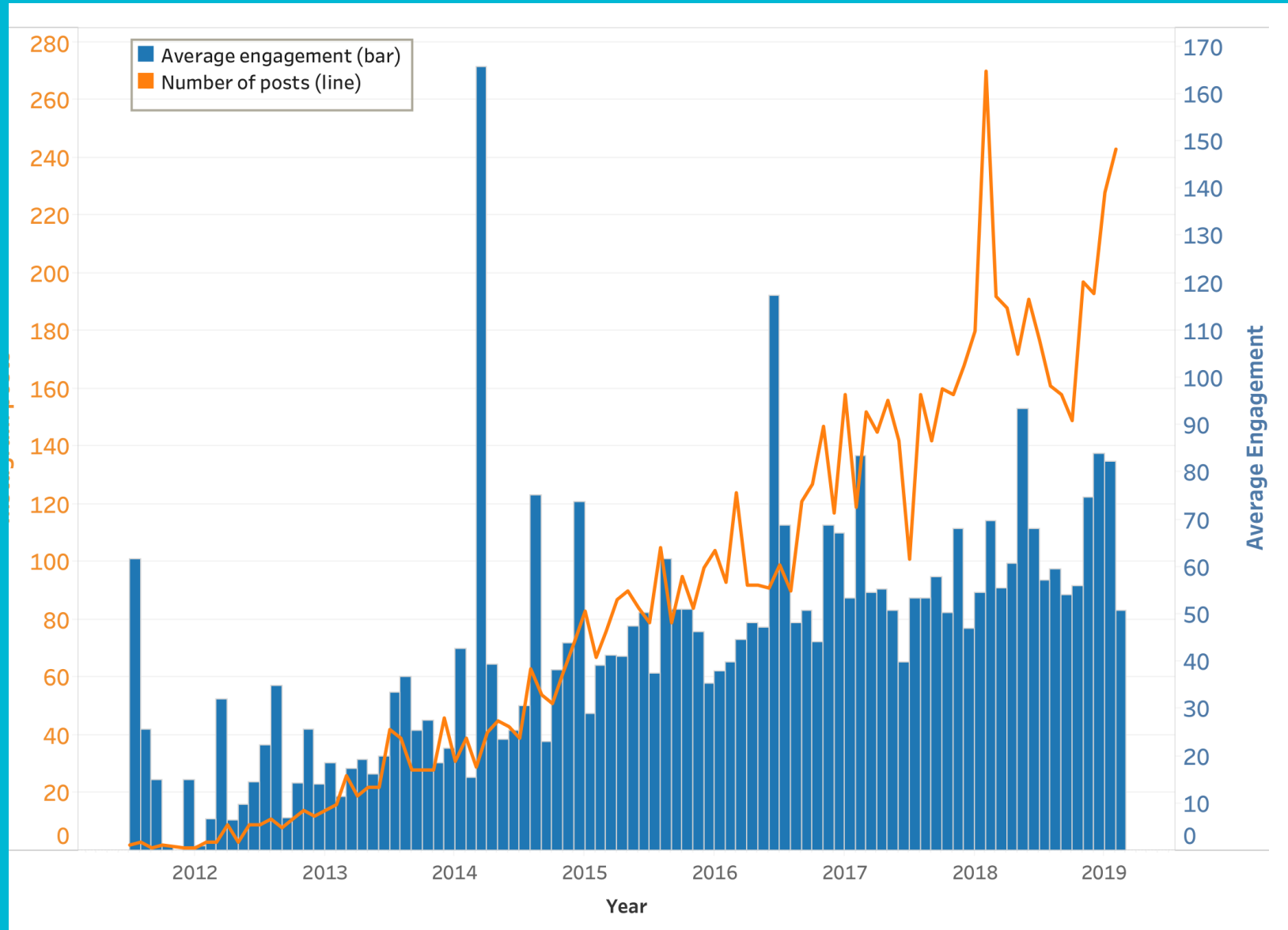
# Substance use and Instagram

- Marijuana (Cavazos-Rehg et al., 2016)
  - Images of the plant in traditional and non-traditional forms most popular
  - Use of marijuana
  - Marijuana-related advertisements
- Hookah (water-pipe) (Allen et al., 2017; Primack et al., 2016)
  - Hookah pipes and smoke
  - Paraphernalia
  - Social gathering
- Electronic cigarettes (Chu et al., 2016; Lee et al., 2017)
  - Advertisements and marketing
  - Use and customization (exhaling aerosol and devices)
  - Products (juices and flavors)

# Methods

- Social media analytics
- Semantic driven activity involving language and Instagram posting practices
- Hashtag network analysis
- Identify topical clusters which place terms occurring together
- Instagram's API (Application Programming Interface)
- Downloaded metadata on over 7800 Instagram posts using the hashtag “betelnut” on March 14, 2019

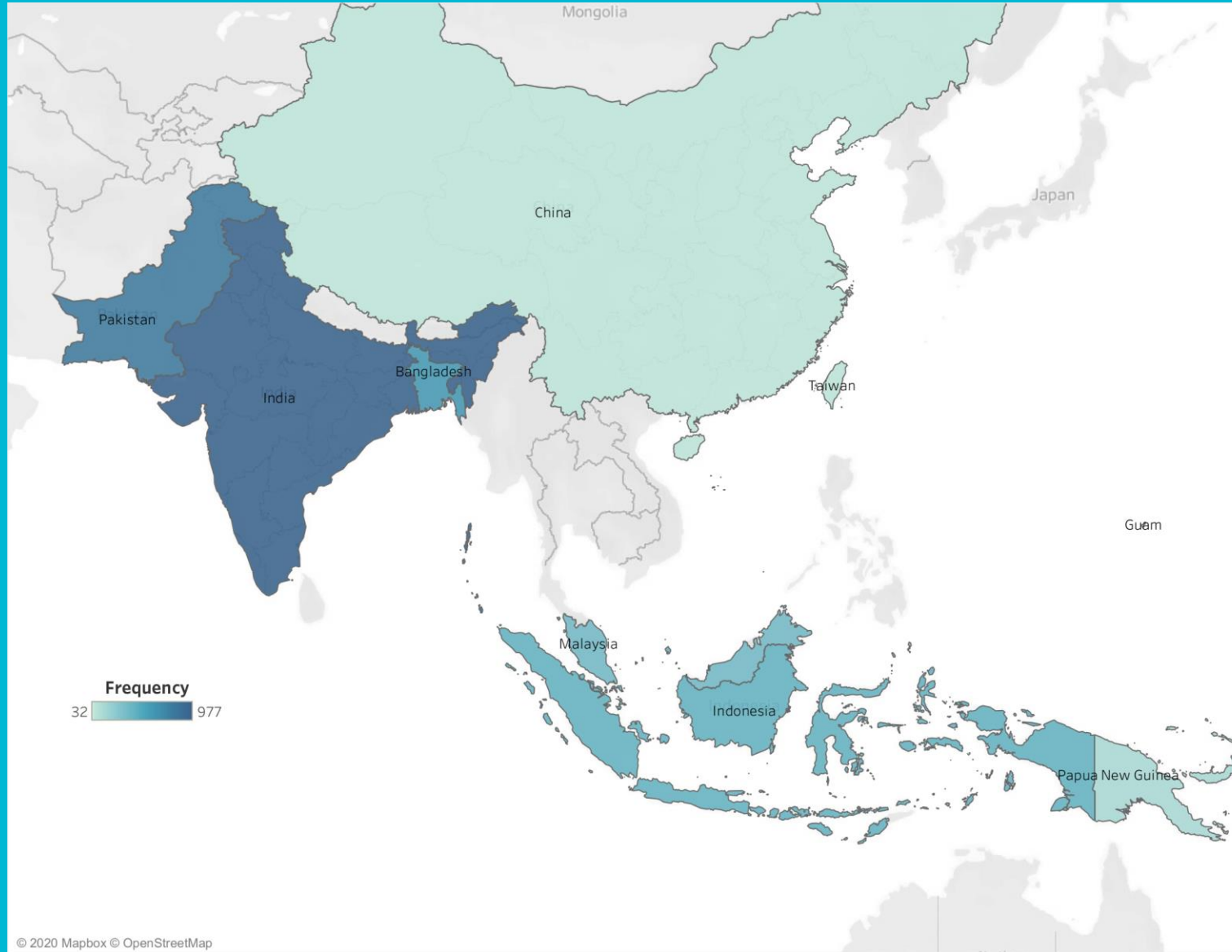
# Timeline of monthly Instagram activity and engagement on #betelnut



*Table 1. Most prolific co-occurring regional hashtags used in #betelnut*

<b>Hashtag</b>	<b>Country</b>	<b>Frequency</b>	<b>Date of first appearance in dataset</b>
paan	Bangladesh, India, Pakistan	519	October 28, 2012
pinang	Indonesia, Malaysia	361	February 26, 2014
supari	India, Pakistan	302	August 30, 2013
adakka	India	132	May 18, 2017
buai	Papua New Guinea	115	August 2, 2012
pugua	Guam	83	October 12, 2011
pan	Bangladesh	68	July 17, 2013
sirih	Indonesia	33	May 4, 2014
jambe	Indonesia	27	April 25, 2015
binlang	China, Taiwan	32	July 8, 2012
gua	Bangladesh	27	August 22, 2013
adike	India	24	August 5, 2013

# Geographic regions referenced by #betelnut





# #betelnut cafe





# Socially engaged #betelnut post



# Significance

- #betelnut Instagram users converge around the Indian subcontinent and Melanesia. The frequent use of regional hashtags demonstrates the influence of Instagram users within these regions.
- Betel nut has many different naming conventions based on regional language and culture. Our analysis demonstrated the wide lexicon of related terms for betel nut based on regional preferences
- We speculate that adolescent and teen betel nut chewers from these regions are increasingly using Instagram to share and consume betel nut content

# Special thanks to



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