

# Influencers

## Social Media and Web Analytics

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# Learning Goals for this Week

- Define the term influencer marketing
- Explain stylized facts around the influencer marketplace
- Identify challenges in identifying organic influencers and susceptible types
- Assess when and how influencers might impact consumer's purchase patterns
- Explain the effects of increased regulation on consumer engagement with influencers

# The Influencer Marketplace

# What is Influencer Marketing?

**Influencer Marketing:** A type of social media marketing that uses endorsements and product mentions from influencers

Who are influencers? Someone who has:

- Power to affect the purchasing decisions of others because of his or her authority, knowledge, position, or relationship with his or her audience
- A following in a distinct niche, with whom he or she actively engages

Types of influencers:

- How niche they are
- How large their reach is: mega, macro, micro, nano

# The Influencer Market

## Stylized Facts:

- Large and growing, approx 9.7 billion USD in 2020
  - 2016: 1.7 billion USD, 2025: (expected) > 20 billion USD
- Approx. 3/4 companies use influencer marketing to some extent, mainly Instagram
  - Only 65% of those who use it, track ROI
- Becoming 'centralized' through influencer marketing agencies
  - Interesting incentive problems here...
- Large growth in the use of "micro" influencers
- Growing concern: compliance issues
  - Only approx 20% of (US/UK) posts meet regulatory guidelines

# Today's Agenda

Three papers:

- Identifying Influential and Susceptible Members of Social Networks
  - Aral and Walker (2012, Science)
- Social Media, Influencers, and Adoption of an Eco-Friendly Product: Field Experiment Evidence from Rural China
  - Zhang, Chintagunta & Kalwani (2021, Journal of Marketing)
- The Effects of Influencer Advertising Disclosure Regulations: Evidence From Instagram
  - Ershov & Mitchell (2021, Working Paper)

# Identifying Influential and Susceptible Members of Social Networks

# Influence and Susceptibility

**Motivation:** How does behaviour spread through a social network?

**Specific Questions:**

- Who is susceptible to influence?
- Who can be influential?

**How?:** Randomized experiment on Facebook

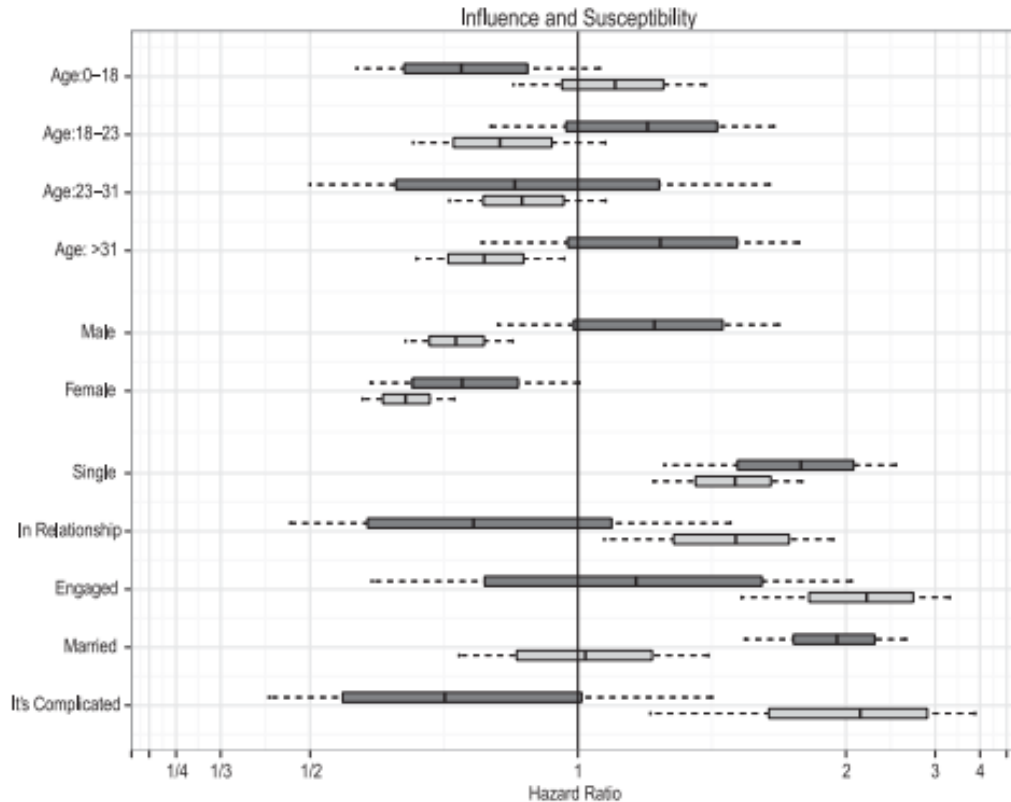


# The Experiment

- Sample: representative sample of 1.3 million users
- Treatment: Manipulation of influence-mediating messages (about films)
  - If "user A" adopted an app allowing info/opinion sharing ...
  - ... random selection of friends where notified ...
  - ... and got a link to adopt the application
- Outcome variable: Time to peer adoption
  - $\implies$  estimate a hazard model
  - Hazard ratio  $> 1$  increased susceptibility / influence

**Note: The design is nice...**

# Results: Influence and Susceptibility



**Fig. 1.** Effects of age, gender, and relationship status on influence and susceptibility. Influence (dark gray) and susceptibility to influence (light gray) are shown with SEs (boxes) and 95% confidence intervals (whiskers). The figure displays hazard ratios (HRs) representing the percent increase (HR > 1) or decrease (HR < 1) in adoption hazards associated with each attribute. Age is binned by quartiles. Each attribute is shown as a pair of estimates, one reflecting influence (dark gray) and the other susceptibility (light gray). Personal relationship status reflects the status of an individual's current romantic relationship and is specified on Facebook as Single, In a Relationship, Engaged, Married, or It's Complicated. Estimates are shown relative to the baseline case for each attribute, which is the average for individuals who do not display that attribute in their online profile.

# Takeaways?

## **Most susceptible to influence:**

- Younger people (0-18)
- Men
- People who are engaged

## **More influential:**

- Men
- Older
- Married

## **Question: Are these variables capturing something unobserved?**

I think the answer is yes...

- These groups feel artificial, and likely capturing something related to interests

# Social Media, Influencers, and Adoption

# Social Media, Influencers, and

**Motivation:** Quantifying the effect of influencers (and social media) on product adoption

**Specific Questions:**

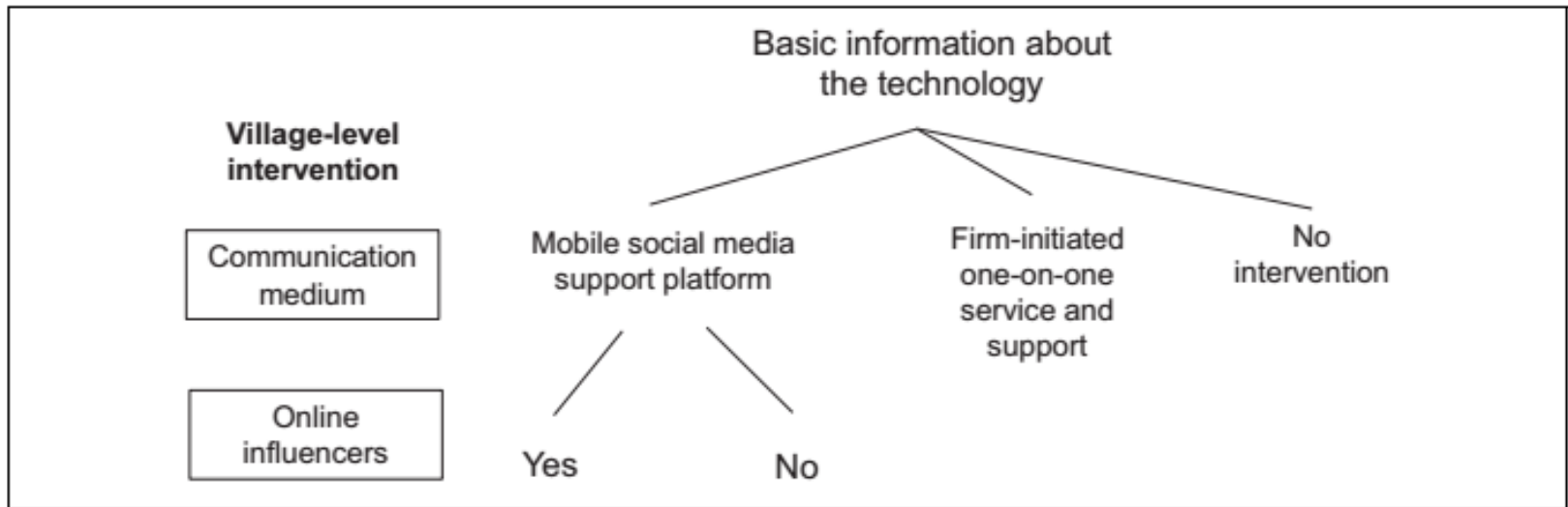
- Do influencers facilitate product adoption? When?
- What's the mechanism through which it happens?

**How?:** Randomized Control Trial in rural China

# The Experiment

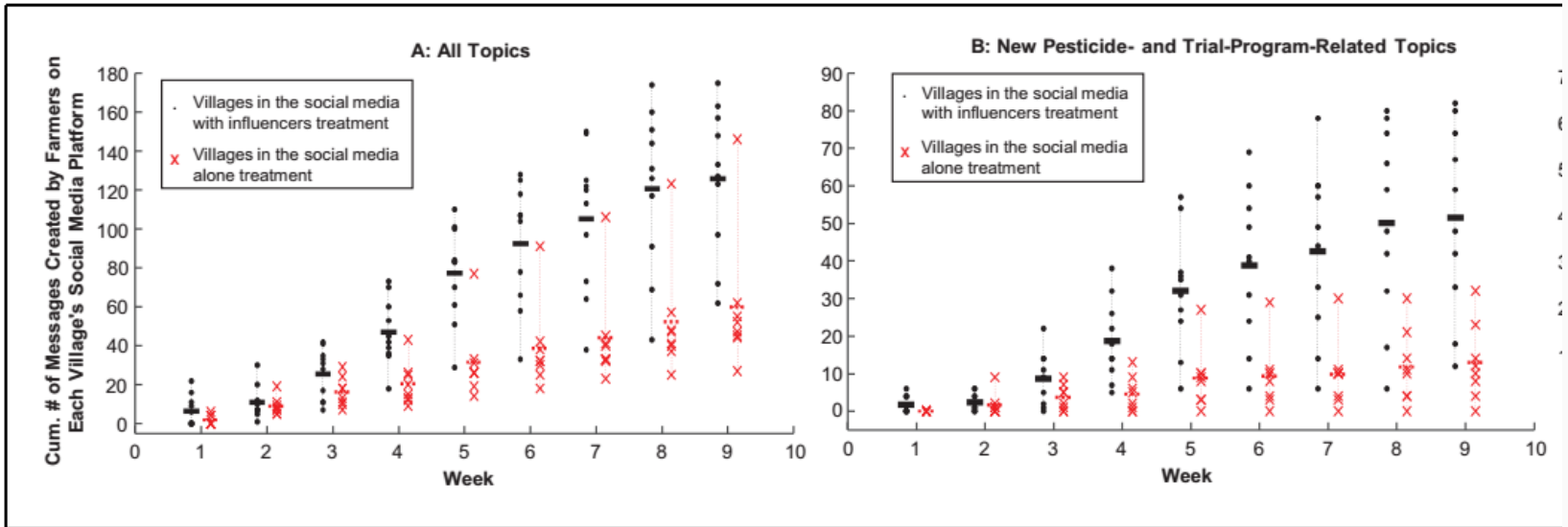
- Product: nano-pesticide
- Sample: approx 700 farmers across 34 villages
- Two Treatments:
  - Online discussion group on WeChat per village
  - Add eminent local personalities
  - "peer encouragement design"
- Outcome variables:
  - Farmers trial a product
  - Adoption

# The Experiment as a Graph



**Figure 1.** Experimental design.

# Influencers & Interactions



Influencers lead to more discussion in online discussion platform



# Trial and Adoption

**Table 3.** Effects of Marketing Treatments on Trial and Adoption Behaviors (Group-Level Analysis).

A: Estimation Results (Ordinary Least Squares)				
Dependent Variables	Early Trial Rate	Final Trial Rate	Adoption Rate	Conditional Adoption Rate
Social media with influencers	.251*** (.069)	.220*** (.044)	.338*** (.074)	.268*** (.083)
Social media	-.076 (.071)	-.055 (.068)	.178*** (.048)	.327*** (.069)
Firm's one-on-one support	.010 (.057)	.188*** (.059)	.307*** (.046)	.265*** (.055)
Constant	.391*** (.042)	.666*** (.034)	.244*** (.032)	.380*** (.054)
Observations	34	34	34	34
R-squared	.476	.506	.503	.449
Village-level clustered errors	Yes	Yes	Yes	Yes

## Findings

- Influencers → early trial
- Influencers and one-on-one support → similar adoption rates
  - Big cost difference!

## Mechanisms?

- Encouragement to try the product
  - Building trust + eliminating uncertainty about product and company

# Effects of Influencer Advertising Disclosure Regulations

# Influencers as Advertisers

**Motivation:** Concern and growing regulation around hidden sponsorship

**Specific Question:**

- What to advertising disclosure regulations do to content engagement?

**How?:** Natural Experiment on Instagram

# The Experiment

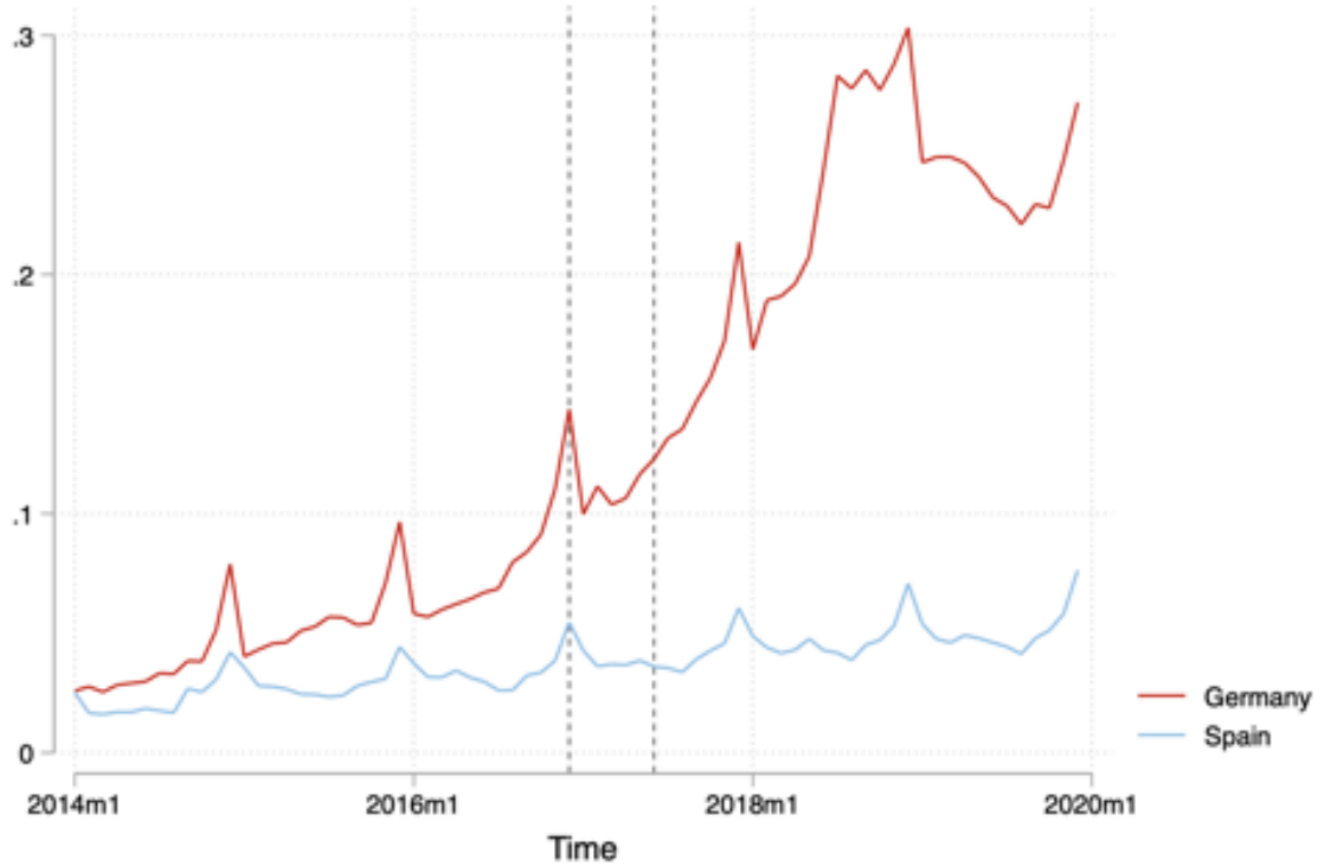
The 'Experiment': Introduction of strict Ad Disclosure Laws

- **Treatment:** New laws passed in Germany in late 2016
- **Treated Group:** Germany influencer market
- **Untreated Group:** Spanish influencer market

Data: 6,000 local influencers in Spain and Germany

# Disclosure Patterns

Figure 1: Share of Posts Disclosed as Advertising in Germany and Spain



# Detecting Disclosure?

Figure 2: Examples of Non-Sponsored, Sponsored and Disclosed Posts

(a) Sponsored and Disclosed



(b) Non-Sponsored and Undisclosed



(c) Sponsored and Likely Disclosed



(d) Possibly Sponsored and Undisclosed



# Disclosure Before & After

Table 5: Influencer/Month DiD Estimates - Sponsored Share

Outcome:	(1)	(2)	(3)	(4)
Classifier:	Naive Bayes	SGD L1	Decision Tree	Random Forest
Germany $\times$ Regulation Period	0.034*** (0.011)	0.046*** (0.008)	0.038*** (0.007)	0.076*** (0.009)
Pre-Regulation Mean	0.277	0.382	0.264	0.142
Country Controls	YES	YES	YES	YES
Influencer FE	YES	YES	YES	YES
Year-Month FE	YES	YES	YES	YES
Account Age FE	YES	YES	YES	YES
Account Age $\times$ First-Account-Year FE	YES	YES	YES	YES
Observations	67,235	67,235	67,235	67,235
R-squared	0.670	0.522	0.525	0.674

# Engagement Metrics

Table 8: Influencer/Month DiD Estimates - Engagement

Outcome:	(1) Mean N Likes	(2) Mean N Comments	(3) Mean N Followers
Germany $\times$ Regulation Period	0 -483.217*** (157.693)	-22.663*** (7.232)	-4,693 (8,275)
Pre-Regulation Mean	769.1	17.10	76,790
Country Controls	YES	YES	YES
Influencer FE	YES	YES	YES
Year-Month FE	YES	YES	YES
Account Age FE	YES	YES	YES
Account Age $\times$ First-Account-Year FE	YES	YES	YES
Observations	67,235	67,235	14,165
R-squared	0.637	0.251	0.906



# Recap

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- Influencer market is large, mostly 'unregulated'
- Hard to generally classify people as susceptible to influencers or organically 'likely' influential
- Influencers lead to increased early adoption & can generate good ROI
- Growing push for regulation → consumer's engagement with influencers decreases

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```
@misc{smwa_2021_l05,  
  title={"Social Media and Web Analytics: Lecture 5"},  
  author={Lachlan Deer},  
  year={2021},  
  url = "https://github.com/tisem-digital-marketing/smwa-lecture-05"  
}
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