

Co-Opt or Coexist? A Study of Medical Cannabis Dispensaries' Identity-Based Responses to Recreational-Use Legalization in Colorado and Washington

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Abstract. When recreational cannabis dispensaries first entered the U.S. market in 2014, how did incumbent medical cannabis dispensaries react? Did they emphasize their distinct identity as medical providers, distancing themselves from recreational dispensaries and those consumers who consume cannabis recreationally? Or did they downplay their medical orientation to compete directly for potential resources? In this study, we propose that how incumbent organizations position their identities in response to increasing competition from an emerging rival form depends on key audiences' acceptance of the new form. Using data on the evolving cannabis markets in the states of Colorado and Washington during the year following the initial emergence of the recreational category, we find a sharpening of identity among medical dispensaries in communities with low voter support for recreational-use legalization. Medical dispensaries accentuated the medical orientation of their identities as recreational dispensaries increasingly set up operations and as buyers inclined more toward recreational use. In contrast, we find a blurring of medical/recreational identity in communities where voters demonstrated support for recreational-use legalization in the state-level ballot. Overall, the theoretical framework we advance integrates cultural and strategic approaches by explicitly considering conflict in different audiences' beliefs about the legitimacy of products and its implications for market producers seeking to connect with and appeal to current/potential consumers.

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Introduction

In 2012, two state ballot initiatives legalizing the sale of cannabis for recreational use passed for the first time in the United States, marking a monumental shift for the cannabis industry. For decades, influential organizations such as the National Organization for the Reform of Marijuana Laws and Americans for Safe Access had framed cannabis as medicine that relieves pain for patients suffering from a wide variety of illnesses, including cancer, multiple sclerosis, insomnia, and migraines (Dioun 2014). Scientific studies have also indicated cannabis's potential benefit for conditions such as chronic pain, spasticity, and nausea (Whiting et al. 2015). This therapeutic framing gained considerable traction in the United States, as an ABC News/*Washington Post* poll found that 81% of Americans supported legalizing cannabis for medical use in 2010 (Langer 2010), and 18 states had enacted promedical cannabis legislation by late 2011 (Pacula and Sevigny 2014). Recreational-use legislation proponents, on the other hand, eschewed framing cannabis use as a medical issue, instead emphasizing

the economic, social justice, and public health/safety benefits of regulating the sale of a substance they cast as “less harmful to health than alcohol” (Leon and Weitzer 2014, p. 211). Fifty-five percent of the voting citizenry in Colorado and Washington supported this position in 2012, paving the way two years later for the earliest entrants into a new market category: the recreational cannabis dispensary.

The emergence of this new category allows us to study a theoretical question that has long interested organizational scholars: When faced with an emerging rival form, how do members of the incumbent form react? After decades of cannabis's framing as medicine, the regulatory creation of the recreational dispensary represented not only a threat to medical dispensaries' existing lines of resources, but also a fundamental challenge to the cultural framework supporting the social identities they had cultivated over time (Fligstein 2001, Fligstein and McAdam 2011). At the same time, legalization of the recreational market presented an economic opportunity for medical dispensaries seeking to expand their user base and capitalize on increasing

economies of scale (Carroll and Swaminathan 2000). Furthermore, by reaching out to recreationally focused consumers, medical dispensaries could competitively exclude newly licensed recreational-form dispensaries from emerging in resource-rich positions in the market (Hannan and Freeman 1989).

During this unsettled period, how did medical dispensaries defend their interests and social positions (McDonnell and King 2013)? Did they emphasize their distinct identity as medical providers, distancing themselves from recreational dispensaries and those consumers who consume cannabis for recreational purposes? Or did they downplay their medical orientation to compete directly for potential consumers? That is, did medical cannabis dispensaries move to strengthen or weaken the symbolic boundary separating them from their recreational-form counterparts (Lamont and Molnár 2002)? Numerous studies examine processes underlying the blending versus segregating of categories in the organizational world (Ruef 2000, Lounsbury and Rao 2004, Weber et al. 2008, Jones et al. 2012). Some find that incumbent category members respond to new category emergence by competing for control of overlapping regions in the resource space—for example, by adding new technologies that incorporate salient features from the new category (Benner 2010; Rao et al. 2003, 2005). In other cases, incumbents increase resource differentiation vis-à-vis new category rivals by accentuating the distinctiveness of their existing position (Negro et al. 2011). Such studies portray market boundaries as the result of not only technical or product-based distinctions, but also structural forces and political struggles among organizations vying for power and resources (Fligstein 2001, Lounsbury and Rao 2004, Sine and Lee 2009).

Yet, by centering analytical focus on producers and their interrelationships, studies of organizational blending/segregating processes downplay the role of market audiences such as consumers. As Fligstein and Dauter (2007, p. 118) observe, “[t]hese producer-focused studies often only present consumers to the degree that the machinations of firms eventually produce a stable social structure that effectively mitigates competition or reduces the resource dependence of competitor firms.” In contrast, a rich literature within the sociology of culture emphasizes the influence of market audiences’ beliefs regarding the moral and social uses of products on market activity (Swidler 1986, Healy 2000, Fourcade and Healy 2007, Wherry 2012). For example, Zelizer (1983) observes that the emergence of a market for life insurance was initially blocked by consumers’ objections to the idea of commodifying death. The growth of this market became possible only when economic, cultural, and social shifts rendered the notion of an economic definition of death more acceptable to the American public. Market producers strategically navigate broader

economic, cultural, and social trends by selecting and emphasizing conceptions that align with their experiences and advance their interests (Quinn 2008, p. 772). In contested cultural markets, market producers often do so by crafting narratives affirming the legitimacy of their specific organizational practices and activities (Anteby 2010); that is, they advance claims that portray a practice or activity as “valuable and worthy of support because its structural characteristics locate it within a morally favored taxonomic category” (Suchman 1995, p. 581) in the eyes of market audiences vital to their continued success and survival.

While cultural beliefs have increasingly played a role in theories of market partitioning (Carroll and Swaminathan 2000, Rao et al. 2005, Negro et al. 2011), culture in such studies has often been painted in broad strokes, without consideration of localized differences in the views consumers and other audiences express regarding the legitimacy of products. Our study focuses on variation in audience beliefs both across and within communities for the same market of goods. This connects us to a burgeoning literature on community-organization relationships that highlights the importance of attending to cultural variation across geographical markets and its influence on organizational behavior. Laws, systems of relationships, and shared histories, norms, and values tie people and organizations within a local community together (Marquis and Battilana 2009, Yue 2015). Different local communities may thus come to espouse different standards of appropriateness for the same good or market activity, shaping the behaviors organizations adopt and the identities they claim.

We further consider how, within geographic communities, there may be variation in how aligned different key audiences are in their stances toward particular market activities (Rao et al. 2011). This focus fits with organizational identity and neoinstitutional scholars’ call for greater study of how organizations navigate the institutional complexity of conflicting audience demands (Scott and Lane 2000, Kraatz and Block 2008, Greenwood et al. 2011, Gioia et al. 2013). During unsettled periods, different segments of the market’s audience likely diverge in their conceptions of market offerings (Weber et al. 2008). Evidence suggests that adopting hybrid identities that blend categorical mandates may be one way for organizations to navigate the tensions of conflicting audience demands (Battilana and Dorado 2010). Almandoz (2012) notes, however, that embracing conflicting identities may prove difficult for many organizations, stirring up dissent and discord among organizational stakeholders. Organizations may alternatively respond to conflicting audience demands by strengthening their identification with the values espoused by a single audience and simultaneously weakening their connection to others (Pratt and Foreman 2000, Kraatz and Block 2008). Both

paths represent organizational attempts at adaptation to the institutional conflict brought on by a new category's emergence. Our theoretical framework sheds insights on audience-based factors that systematically influence incumbent category members in one direction versus the other.

The empirical context we study is well suited to investigating these issues. In the United States, local communities display significant variation in their beliefs about the legitimacy of recreational-use cannabis, and consumers differ in the value they place on cannabis as a source of medicine versus recreation.¹ Furthermore, local voters and legislators wield considerable power over the cannabis industry, with a broad range of regulatory tools to restrict cannabis retailers within their specific communities even after the passage of state-level legislation (Salkin and Kansler 2010). We use this variation to build understanding of the roles played by two key audiences—consumers versus local voting populations—in influencing whether medical dispensaries advance identity narratives that reinforce versus dilute the symbolic boundary separating them from the emerging recreational category.

We begin by briefly outlining the evolution of the U.S. cannabis industry, with a particular focus on the two states that began legalized recreational dispensary operations in 2014—Colorado and Washington. We then develop and test hypotheses on how distinct audience-based factors influenced medical dispensaries' identity-based actions during the early period of the recreational category's emergence (July 2014 to July 2015)—a time in which we are particularly likely to capture concerted efforts by dispensaries to define their market's structure (Fligstein and McAdam 2011).

The Cannabis Industry in the United States

Since 1970, the federal government has deemed cannabis a Schedule I drug, indicating “a high potential for abuse” and “no accepted medicinal value in treatment” (U.S. Drug Enforcement Administration 2013, p. 1). Cannabis possession is a federal offense, punishable through jail time and substantial fines. Yet, by mid-2013, voters in 21 states and the District of Columbia had passed state ballots allowing for some degree of possession and use of medical-use cannabis by qualified patients (Sevigny et al. 2014). Laws vary across states; for example, while some states created state-licensed medical cannabis dispensary programs, others only permit home cultivation of cannabis, while still others are silent as to the source of supply (Pacula and Sevigny 2014). Laws further vary within states, as local communities often diverge in their views on cannabis legalization despite growing state support. Local legislatures have adopted a range of cultivation, zoning, signage, taxation, and licensing/permitting regulations within their communities, including laws

banning cannabis-related operations within their jurisdictions (Salkin and Kansler 2010, Daley 2012).

In Colorado and Washington, the possession and use of cannabis for medical purposes has been legal since 1998 and 2000, respectively. Consumers purchasing from medical dispensaries are required to present a medical recommendation issued by an approved healthcare provider as well as proof they are at least 18 years of age. In Colorado, they must also provide proof of state residency. Voters in both states passed ballot initiatives legalizing the sale of cannabis for adult recreational use in November 2012. Key aspects of the states' recreational legalization programs are similar; both legalize up to one-ounce possession for adults age 21 and over for recreational use and set similar DUI policies (Wallach and Hudak 2014). Both states impose significantly higher tax rates on recreational-use relative to medical-use cannabis sales (Henchman 2014, Wallach and Hudak 2014).² Both have also established extensive licensing, taxation, and product safety testing programs for recreational cannabis growers, processors, and retailers—programs distinct from those regulating the medical cannabis sector (Brohl et al. 2015). Medical dispensaries interested in converting to recreational operations must invest considerable resources to navigate this regulatory process (Markus 2014).

While these legal distinctions may have constrained medical dispensaries from quickly converting to licensed recreational-use dispensaries (Meltzer 2014), they do not necessarily constrain them from serving recreationally focused consumers. Consumers who use cannabis recreationally may choose to purchase from medical dispensaries because lower tax rates for medical cannabis translate to significantly lower prices (Hickey 2014, Light et al. 2014). For many consumers, these savings outweigh the cost and inconvenience of obtaining a physician's recommendation. Thus, some profit-minded medical dispensaries may retain their medical licenses but adjust their identities to better appeal to recreational consumers in response to increasing recreational dispensary competition.

Medical dispensaries who reach out to recreationally focused cannabis consumers in this way could expand and grow their user base. Analyst reports suggest that the legalization of recreational cannabis invited new recreationally focused users into the legal market, creating an increase and broadening of demand for cannabis products (Ingold 2014, Light et al. 2014). Appealing to these new recreational users would allow dispensaries to capitalize on economies of scale in cannabis production and operations (Caulkins 2010, Kilmer 2014). Lower unit costs may also lead to lower prices, an important factor in securing market share in this price-sensitive market (Pacula and Lundberg 2014).

Yet, there is reason to suspect some medical dispensaries might choose to accentuate their distinct,

medically focused identity. Given regulatory distinctions between medical and recreational cannabis dispensaries, medical dispensaries may maintain a clear medical orientation to minimize any risk of negative attention or sanctions. Furthermore, after decades of championing the therapeutic benefits of cannabis, many medical dispensaries may embrace their medical identity and find it distasteful to move to a recreational orientation. Medically focused consumers may also find such actions unappealing, as medical and recreational users often differ in their basic goals (symptom relief versus getting high) and the way they use cannabis (Bostwick 2012).

Local Contextual Factors Shaping Medical Cannabis Dispensaries' Identity-based Claims

Organizational actions are strongly influenced by the desire to be seen as socially appropriate (Meyer and Rowan 1977, DiMaggio and Powell 1983). By adopting features aligned with the cultural and normative structures shared by a community, organizations gain legitimacy (Baum and Rao 2004). Changes in these features may violate the premises upon which existing resource relationships have been established and harm an organization's standing. Thus, when faced with an emerging competitor form, incumbent category members' responses are shaped not only by the intensity of resource competition posed, but also by concerns with identity, legitimacy, and reputation (King and Pearce 2010, Fligstein and McAdam 2011, Walker and Rea 2014). This suggests that a key constraint on medical dispensaries is the loss of legitimacy that may result from identity-based claims that indicate a movement away from a medical-use orientation and toward recreational consumption of cannabis.

We first consider how the desire to court legitimacy may shape organizations' identity claims during the early emergence of a competitor form. The rise of a new category often represents a disruption to existing value systems, as new category entrepreneurs seek to invoke alternative, culturally resonant logics that reorient the institutional and material infrastructure supporting a market (Haveman et al. 2007, Schneiberg et al. 2008, Sine and Lee 2009). Members of the new category hope to not only vie with incumbent category members for favorable market positions but also redefine the rules by which such positions are gained (Fligstein and McAdam 2011). Frames that resonate with broadly shared cultural codes are more likely to be effective in reconfiguring a market's social structure (Weber et al. 2008).

Proponents of recreational legalization attempted to reorient cannabis's existing therapeutic focus by instead framing it as less addictive and less toxic than

alcohol, and thus deserving of a similar regulatory status (Ferner 2012). Recreational legalization proponents further argued that "placing marijuana in the hands of closely-regulated businesspeople" (Ferner 2012) would benefit state economies by creating new jobs and bringing in substantial new tax revenues. Harm reduction was also a key theme, as proponents argued that enforcement of existing laws involved excessive cost, disproportionately targeted minority groups, and was ineffective both in curbing cannabis use and deterring criminal involvement in cannabis markets (Leon and Weitzer 2014).

The extent to which these alternative logics gained traction within local communities varied considerably in the two states studied. At the county level, support for recreational legalization ranged from a low of 31.9% to a high of 79.1% in favor of recreational legalization in Colorado, and from 37.8% to 68.3% in favor in Washington. Low voter support for recreational legalization raises the possibility that local legislators may respond to community sentiments by enacting and/or revising regulatory constraints on dispensary operations. The power of local municipalities to establish new rules, inspection and review processes, and constraints on operation present a significant regulative threat (Salkin and Kansler 2010). Medical dispensaries clearly benefit from maintaining positive relationships with their municipality and voting community.³

We thus expect variation in community acceptance of recreational-use legalization to be an important contextual driver of how medical dispensaries attempt to navigate their unsettled local environments (Quinn 2008, Marquis and Battilana 2009). If local voters have demonstrated low support for recreational-use legalization, association with the new recreational-use category is likely to be viewed as a threat to the medical dispensary's legitimacy (Phillips and Kim 2009). Medical dispensaries are expected to engage in actions that highlight their therapeutic identity, as a way of preserving support within their local voting community. Accordingly, as recreational dispensaries enter and grow in nearby locations, medical dispensaries are expected to advance identity narratives that sharpen the symbolic distance between themselves and their recreational-use counterparts.

In contrast, communities that supported the recreational-use state ballot have signaled to medical cannabis dispensaries that engaging with recreationally focused customers is socially acceptable. In such contexts, increasing recreational density indicates an expansion of recreational-related resource positions in the legal market and increasing opportunities for growth (Light et al. 2014). As in other contexts with significant scale advantages, incumbents can be expected to push into newly emerging market niches in the absence of cultural constraints to expansion (Carroll

and Swaminathan 2000, Negro et al. 2014). Medical dispensaries can thus be expected to shift toward recreational consumers, blurring the boundaries that separate the two forms.

Hypothesis 1A (H1A). *In locations where voter support for recreational cannabis legalization is weak, medical cannabis dispensaries' identity claims will emphasize their medical orientation as recreational cannabis dispensary density increases.*

Hypothesis 1B (H1B). *In locations where voter support for recreational cannabis legalization is strong, medical cannabis dispensaries' identity claims will de-emphasize their medical orientation as recreational cannabis dispensary density increases.*

Our next set of hypotheses considers how the presence of conflicting audience demands complicates this picture. Within communities, different audiences may diverge in their stances toward particular market activities, influencing organizations' positioning choices. In a study of Walmart's decisions to locate new stores despite the presence of anti-Walmart protests, for example, Rao et al. (2011) suggest the degree of perceived alignment of activists' values with values held by community legislators influenced Walmart's location decisions. In communities where local legislators enacted probusiness right-to-work legislation, legislators' values appeared misaligned with those held by anti-Walmart activists. Walmart was more likely to establish new locations in these communities relative to non-right-to-work states, where the different audiences appeared more aligned in values and thus more likely to impose future regulations on Walmart.

Thus far, we have considered only one audience for cannabis dispensaries: the voting citizenry in the local community the dispensary operates within. Another key audience is the existing customer base with which a dispensary engages in economic exchange. Dispensaries' resource dependency on customers creates social obligations that influence the way they define and pursue their economic interests (Granovetter 1985, Uzzi 1997). Accordingly, the preferences exhibited by key exchange partners are expected to shape a focal organization's behavior (Pfeffer and Salancik 1978). For example, Beckman and Phillips (2005) find that law firms' promotion of women to partner rank is influenced by the gender composition of their corporate clientele. Law firms whose clients have females in key leadership positions experience greater growth in the number of female partners.

In a similar manner, customers' values and preferences are expected to influence medical dispensaries' identity positioning. In cannabis markets, a major divide exists between customers who consume cannabis for medical versus recreational reasons. For

example, the website Leafly conducted a Twitter poll about "Which #budtender habits make you cringe?" and concluded the following:

Differentiating medicine from adult-use cannabis is important for both the patient and general consumer experience. Feedback showed that a fair amount of medical patients dislike budtenders who treat their medicine as "weed," whereas adult-use consumers tend to be overwhelmed by advanced explanations. Customers vary and are often there for different reasons. (Leafly 2017)

Not surprisingly, Ramirez (2014) observes that training for staff catering to patients with medical needs versus recreationally oriented customers differs substantially. Budtenders serving medical customers must acquire expert knowledge about the medical attributes of cannabis strains and their effectiveness for different medical conditions. In contrast, staff catering to recreational customers must be able to quickly and clearly outline distinctions among types of cannabis products.

This suggests that when a medical dispensary's existing customers express increased demand for recreational cannabis in a community whose voting citizenry signals disapproval of recreational dispensaries as an organizational form, it faces a dilemma. On the one hand, the medical dispensary can see the opportunity to strengthen its appeal to recreationally oriented customers and expand their customer base. On the other hand, the dispensary may not want to risk incurring the disapproval of the local community that allows and supports its legitimacy as a medical producer of cannabis. This is an instance when the attempt to please multiple audiences points to conflicting actions.

Organizational identity research suggests that when facing conflicting audience expectations, organizations can be expected to avoid identity claims that raise concerns with legitimacy in the eyes of powerful audiences or incur substantial political liabilities (Pratt and Foreman 2000). In our empirical case, low support for recreational legalization among the voting community signals a risky environment in which the community and its elected legislators have indicated disapproval of recreational use of cannabis. The potential costs of moving toward a recreational identity when these audiences have the power to impose significant regulatory constraints are likely to outweigh the potential benefits of strengthening appeal with recreational customers.

We thus expect medical dispensaries in such communities to respond to conflicting audience demands by distancing themselves from recreationally focused customers. More specifically, when exchange partners openly express interest in recreational uses of cannabis, we expect medical dispensaries in low-voter-support communities to court legitimacy among their voting community by reinforcing their identity as providers of a medical product.

Hypothesis 2A (H2A). *In locations where voter support for recreational cannabis legalization is weak, medical cannabis dispensaries advance identity claims that emphasize their medical focus when their existing clientele displays greater recreational orientation.*

As a point of contrast, we consider medical dispensaries' identity claims in contexts where the voting citizenry has expressed general support for recreational legalization. As the recreational orientation of a dispensary's customer base increases, there is no expected tension between the expectations of voters in the local community and of the dispensary's direct exchange partners. We can expect medical dispensaries to respond to these aligned signals by moving toward an identity position that encompasses recreational-focused resource positions. As the recreational orientation of a dispensary's direct customers increases, the dispensary is expected to de-emphasize the medical orientation in its identity claims as a way of strengthening its appeal to recreational customers.

Hypothesis 2B (H2B). *In locations where voter support for recreational cannabis legalization is strong, medical cannabis dispensaries will advance identity claims that de-emphasize their medical focus when their existing clientele displays greater recreational orientation.*

Empirical Study Design and Methods

Data Sources

We collected data from Weedmaps.com, a website often referred to as the "Yelp of Cannabis" (Robinson 2014). Cannabis dispensaries have limited access to traditional marketing outlets; online review websites such as Weedmaps are thus a major avenue through which they engage customers (*Marijuana Business Daily* 2013, Burke 2015). Although a number of cannabis-focused websites existed during this period, we chose Weedmaps because a comparison of data available from popular websites in July 2014 showed that Weedmaps.com provided substantially higher coverage of dispensaries operating in the United States relative to the other websites.⁴ We obtained the data from Weedmaps on a bimonthly basis for a year, from July 2014 to July 2015. While the state-level ballot legislation in both Colorado and Washington passed in November 2012, the earliest licenses for recreational-use dispensaries were not issued until 2014. The medical dispensary identity repositioning we study occurred in response to increasing pressures accompanying the emergence of recreational competitor operations and growing demand for recreational cannabis seen in the market.

Weedmaps provides several types of information about dispensaries. The first is information on dispensary characteristics such as whether the dispensary is formally a medical or recreational dispensary;

whether it has a physical storefront or is delivery-based; and its physical address, hours of operation, phone number, website and email address, and current number of website visits. Dispensaries provide self-descriptions of their businesses, promotional announcements, and product menus to their Weedmaps profiles. Last, clients of the dispensaries may post reviews to Weedmaps.

Sample

Of the 1,162 Colorado and Washington dispensaries listed on Weedmaps, approximately 28% never provided a self-description to Weedmaps and were therefore omitted from our sample. From the remaining 835 dispensaries, we omitted 141 dispensaries that did not have at least one past review since we are not able to ascertain customer orientation for these dispensaries. The final data set is an unbalanced sample of 694 medical dispensaries.⁵ These dispensaries tended to have larger customer bases and product inventories than dispensaries listed on Weedmaps that did not have self-descriptions or past reviews. This suggests that the cannabis dispensaries we study are generally more established organizations. These may be more motivated to respond to threats against their legitimacy within their local voting community or threats to their existing customer relationships. They may also be less flexible to change, creating greater inertia in identity positioning. Overall, we do not expect this selection to create a bias toward any particular identity position.

Medical Dispensaries' Identity Claims

We examine the identity-based actions medical dispensaries take in response to recreational dispensary emergence by analyzing their self-created descriptions on Weedmaps over time. The following are excerpts from two dispensaries' self-descriptions:

[A] Denver, Colorado Medical Marijuana Center dedicated to providing high quality and affordable cannabis to patients. We aim to educate our patients about cannabis treatments and other alternative health approaches to supplement their medicine. [Dispensary A] advocates for a change; change in the way medical cannabis is sold, change in the way medical cannabis is regulated, and change in the way medical cannabis is viewed. (Dispensary A)

Come on up to 10,600 feet and experience the highest incorporated medical cannabis center in North America. . . . Jack Herer once said, "Cannabis grown at higher elevation is more potent and if grown anywhere above 5,000 feet it's twice as potent." We can all agree the cannabis enjoys growing in the mountains and has deep genetic roots that have been gifted to us from mountain regions all around the world. (Dispensary B)

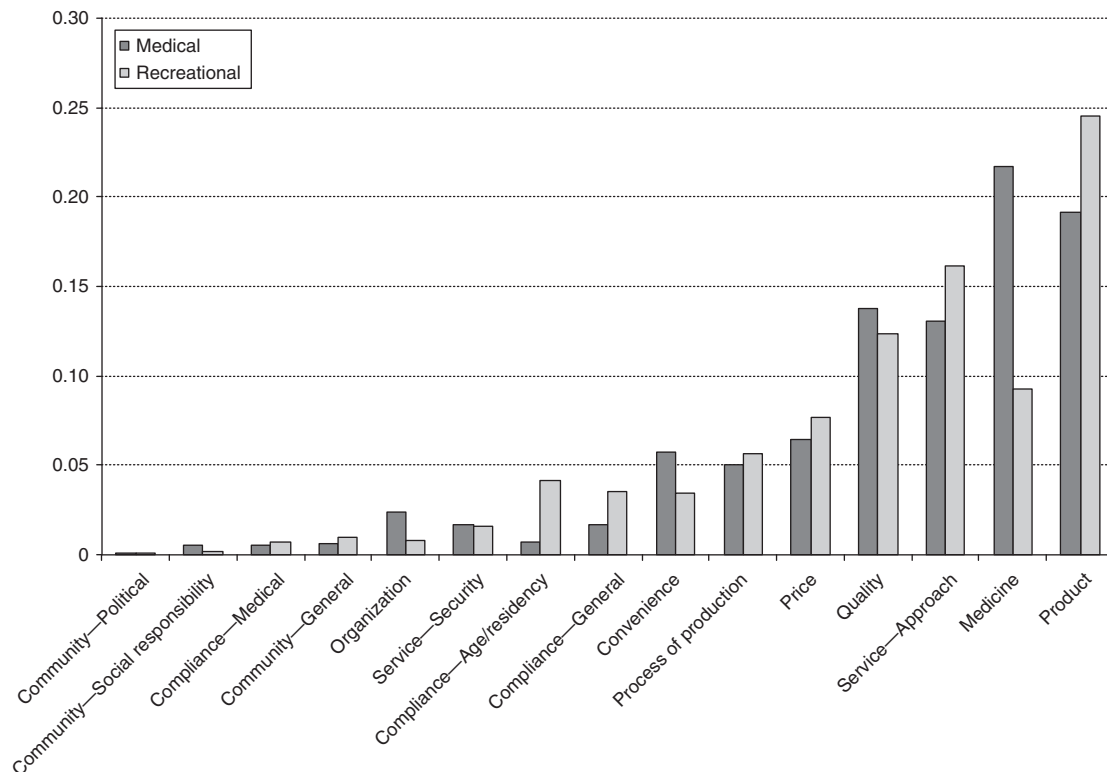
As these examples show, dispensaries use self-descriptions to advance claims about their identities, including the organizational categories they belong to (e.g., “Medical Marijuana Center”) and the features that make them distinctive relative to competitors (e.g., Dispensary A’s emphasis on its advocacy orientation; Dispensary B’s emphasis on the potency of its products; Albert and Whetten 1985). Identity claims may also reflect a dispensary’s orientation toward external stakeholders such as clientele (Brickson 2005). For example, Dispensary A’s self-description includes explicit reference to their efforts to educate patients, reflecting both a key aspect of its client orientation (educational) and the particular type of clientele that it targets (qualified medical patients).

To measure medical dispensaries’ identity-based claims with respect to the boundary separating the medical from the recreational dispensary form, we first developed a coding scheme of identity-related features referenced through dispensaries’ self-descriptions. We developed a context-specific coding scheme since much of the language used in dispensaries’ self-descriptions is specific to cannabis (e.g., “frosty” and “dank” are positive quality-related descriptors; “I-502” references the Washington ballot initiative that legalized recreational use and sale of cannabis; “shatter” and “wax” are types of products). See the online appendix for details on the coding scheme and its construction.

We then created a software program to construct a panel data set of dispensaries and the identity-related themes each referenced in each bimonthly batch download. Figure 1 compares the thematic content of medical versus recreational dispensaries’ self-descriptions. Overall, the two most frequently referenced categories are “medical use” and “products.” Medical dispensaries focused significantly more on medical use and significantly less on products relative to recreational dispensaries ($p < 0.001$). A comparison of the themes in reviewers’ comments shows that reviewers of medical dispensaries similarly focus significantly more on medical use and less on products relative to reviewers of recreational dispensaries ($p < 0.001$).

To investigate whether dispensaries’ self-descriptions correspond to underlying behavioral differences, we perform two validity checks. First, we examine the relationship between a dispensary’s average price for cannabis strains (according to its Weedmaps product menu) and the proportion of its total themes focused on price. Dispensaries charging higher prices should focus less on price in their self-descriptions. In support of this, we find (based on fractional logit analyses conducted on the last Weedmaps batch downloaded during our observation window (July 15, 2015)) a dispensary’s mean strain price has a significant negative effect on the proportion of its total identity themes that

Figure 1. Thematic Content in Medical vs. Recreational Dispensaries’ Self-Descriptions



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focus on price ($p < 0.05$). We further find, using the same data and approach, that dispensaries with more extensive product menus (based on the count of distinct items listed on their product menus) have a higher proportion of self-description themes focused on products ($p < 0.05$).

Variables

Dependent Variable

Our dependent variable is the extent to which each dispensary's self-description shows a clear medical orientation, as reflected in explicit references to the therapeutic functions of cannabis, diseases, symptoms, and medical conditions, as well as general references to medicine and patient care. The following is an example of a self-description of a dispensary that emphasizes its medical orientation by listing specific medical conditions their services cater to:

[Dispensary name] offers safe access to consulting and dispensary services for registered medical marijuana patients suffering from AIDS, cancer, glaucoma, multiple sclerosis, hepatitis C, Crohn's disease, chronic pain and other debilitating conditions.

In other cases, dispensaries do not list specific conditions, but emphasize their medical orientation through general references to medicine and patient care. For example,

Our mission is to provide a way for our members to collectively and cooperatively cultivate and distribute marijuana for medical purposes to qualified patients and primary caregivers who come together to collectively and cooperatively cultivate physician-recommended marijuana.

We operationalize a dispensary's identity-statement medical orientation through the proportion of total codes that reference the medical-use theme in its self-description. We use the count of total identity-related codes as the denominator because we believe this captures the extent to which a dispensary's claims emphasize the medical orientation of its identity (versus other potential identity dimensions). The following are excerpts from a dispensary's self-descriptions that show increased focus on medical uses of cannabis over the time period studied:

Hello, We are NW BEST! We have been involved in the MMJ community for years. We strive to bring you great service and a timely delivery. (February 2015)

Hello friends and fellow patients, we are a collective of medicinally oriented gardeners in Clark County that are dedicated to offering medicine of a pristine quality for a fair and reasonable donation. (May 2015)

In the more recent self-description, the dispensary explicitly defines its client base as patients who use

cannabis for medical purposes (adjusting from a simple "Hello" to "Hello friends and fellow patients"). It emphasizes its identity as "medicinally oriented gardeners" and changes from stating it provides great, timely service to providing "medicine of a pristine quality." The February 2015 excerpt has three coded themes (*community—general*, *customer service*, and *convenience*, corresponding to the words "community," "service," and "timely," respectively), none of which relate to *medical use*. The proportion of total codes that reference *medical use* would thus be measured as 0 for this example. Meanwhile, the May 2015 listing has three words under the *medical use* theme ("patients," "medicinally," and "medicine"), and six other words corresponding to coded themes ("collective" (*organization type*), "dedicated" (*customer service*), "pristine" and "quality" (*quality*), and "reasonable" and "donation" (*price*)). The proportion of total codes referencing *medical use* would be three out of nine, or 0.33, in this case.

In contrast, the following dispensary de-emphasizes the "healthiness" and "patient" language used in its earlier self-description in its more recent listing:

[Dispensary name] has been promoting happiness back into healthiness since 2009! We have a well educated staff and friendly service for all medical marijuana patients. (October 2014)

[Dispensary name] has been a mainstay in Colorado Springs since 2009. We have a very friendly, well educated staff ready to answer any questions you may have. (April 2015)

The number of *medical use* codes in the October 2014 excerpt is three ("healthiness," "medical," and "patients"), and the number of non-*medical use* theme codes is four ("educated," "staff," "friendly," and "service," all under *customer service*). In contrast, there are no *medical use* codes in the April 2015 example and three non-*medical use* codes ("friendly," "educated," and "staff" (*customer service*)). The proportion of *medical use* codes would decrease from 0.42 (three out of seven) to 0 in this example.

Independent Variables

Recreational Dispensary Competitive Density

Our first independent variable is the one-month lagged localized density of recreational dispensaries each medical dispensary faces. We measure this as the count of recreational dispensaries listed on Weedmaps as operating in the same county as the focal medical dispensary. To isolate the impact of recreational dispensary competition, we also control for the changing density of neighboring medical dispensaries by including a one-month lagged count of medical dispensaries operating in the same county.

Local Support for Recreational Cannabis. Our next independent variable reflects local voter support for recreational dispensaries, measured through the percentage of voters in the county who voted in support of the state ballots legalizing recreational cannabis use and sales.⁶ Note that because we only have one observation of voter support for recreational cannabis for each county, these measures are time invariant. In some models, we split counties into high versus low recreational dispensary voter support, based on whether their vote supporting recreational legalization was above or below the statewide level of support (55%) for both the Colorado and Washington ballot measures.

Customers' Recreational Orientation. To measure existing customers' recreational orientation, we constructed a time-varying measure of each dispensary's reviewers' focus on "products" in their review text. As noted earlier, recreational dispensary customers focus significantly more ($p < 0.001$) on cannabis products relative to medical dispensary customers in their review text. Similarly, recreationally oriented customers of medical dispensaries often emphasize products in their reviews. For example, the following two medical dispensary reviews highlight products in their text:

The bud isn't super crazy or anything but on a scale of not dank to dank I'd say it's dank, especially for the price. Their bud has a distinct earthy smell. . . . I love just sticking my face into my jar of their dj short blueberry. I don't think any of their strains are pushing 16% but not everyone needs strains that are that high in THC. Staff is very friendly too. (Review 1)

Monday is wax day (-10%), and it's gonna be hard to beat the top quality (shatters, caviar) and low donations @ this outfit ~picked out 7 gs (quart) for \$245. (Review 2)

We applied the same 16-theme-based coding process as in the dispensary self-description coding to construct measures of the theme focus within each review. We treat a review as demonstrating a recreational orientation if it includes references to cannabis products. The recreational orientation of a dispensary's customer base is the proportion of its total reviews that demonstrate a recreational orientation. This cumulative proportion is lagged by one month in the models presented. In some models, we include a control for reviewers' focus on "medical use" in their review text using the same coding and measurement process as described above to better isolate the effect of reviewers' recreational/product orientation.

Control Variables

In addition to the controls for medical dispensary density and customer focus on medical themes, we include controls for a number of dispensary characteristics. The first is a time-varying measure of each dispensary's

total count of reviews to control for the impact that a larger review count may have on a dispensary's orientation.⁷ The next two control variables are tenure on Weedmaps (based on time since the dispensary first joined Weedmaps) and whether the dispensary is a member of a larger organizational chain (reflected in a shared website, email, or phone number with other dispensaries listed on Weedmaps). We expect dispensaries with greater Weedmaps tenure and larger chain membership to be slower to change identity claims in response to the emergence of recreational dispensaries. We control for whether a dispensary is a delivery versus storefront operation, but we do not have any a priori expectation of how this will affect a dispensary's identity claims.

We also control for external factors that may affect dispensaries' strategic positioning choices. The first is a time-varying measure of local interest in cannabis dispensaries, since greater general interest may indicate greater acceptance of its recreational use. We measure this by summing the count of Weedmaps profile visits (natural logarithm (ln)) for all dispensaries in the focal dispensary's same county. We also control for the proportion of Weedmaps medical dispensary reviewers who have reviewed at least one recreational dispensary in the past (lagged by one month) in a dispensary's same county, since this may also indicate greater general acceptance of recreational cannabis. To account for any influence county population demographics may have on dispensaries' positioning choices, we include county-level controls for a range of factors found to correlate with support for recreational legalization (Kilmer et al. 2013) that may lead medical dispensaries to decrease their medical-use orientation in the face of increasing recreational competition. From the 2014 American Community Survey (ACS), we constructed measures for county population size (ln), percentage of adult population with college degrees, median household income (ln), one-year residential instability, and percentage of county population aged 18–24 years old. We created a measure of the rate of religious adherence per 1,000 population in each county, based on data in 2010 U.S. Religion Census (Grammich et al. 2012), and expect that greater religious adherence may encourage dispensaries to emphasize their medical orientation. We include a county-level control for the percentage of civilian noninstitutionalized population with a disability according to the 2014 ACS and expect this may increase medical dispensaries' medical-use orientation.

We also control for the effect regulation in neighboring municipalities may have on medical dispensaries' positioning choices. A number of Colorado and Washington counties enacted bans on recreational dispensary operations within their jurisdictions, potentially affecting the geographical span of customers a medical

dispensary targets. The presence of neighboring communities that disapprove of recreational legalization may also generally increase dispensaries' medical orientation. We represent this through the proportion of adjacent counties that instituted bans on recreational dispensaries.

We include additional measures related to the focal dispensary's product and pricing strategies: the extensiveness of each dispensary's product inventory (the count of different products listed on its product menu (ln)) and the dispensary's mean price per gram for cannabis strains sold. Product menus with prices are available for only a subset of dispensaries, limiting sample size for models in which these measures are included. Finally, we include a time trend to control for time specific effects. All time-variant independent/control measures are lagged by one month. Descriptive statistics and correlations are provided in Table 1 and the online appendix, respectively.

Estimation Strategy

We begin by presenting dispensary-level fixed effects panel models that control for heterogeneity at the dispensary and county levels. We first split our sample into counties with low versus high voter support for recreational use to estimate the impact of competitive density and reviewer orientation within each separately. We then present a full-sample fixed effects model that includes interaction terms for these two main covariates with county-level voter support for recreational cannabis. We also estimate linear mixed models to explore the estimated effects of time-invariant county- and dispensary-level variables that may be correlated with dispensaries' identity claims. Although a Hausman (1978) test indicates fixed and mixed effects estimates are different, estimates related to our hypotheses are similar across specifications.

Results

Table 2, Model (1), estimates a fixed effects specification for dispensaries in counties with low voter support for recreational legalization. In low-voter-support locations, increasing recreational dispensary density prompts medical dispensaries to accentuate their medical orientation, consistent with H1A. Model (2) estimates a parallel specification for dispensaries in high-voter-support counties. In support of H1B, medical dispensaries in high-voter-support locations de-emphasize their medical identity as the count of neighboring recreational dispensaries increases.

Figure 2 shows the estimated effects for low- and high-voter-support locations at different densities. In high-voter-support locations, the proportion of a medical dispensary's themes focusing on medical use decreases from 27% to 9% as recreational dispensary

Table 1. Summary Statistics

Variable	Mean	Std. dev.	N
<i>Proportion of medical-use identity themes</i>	0.21	0.16	10,668
<i>Proportion of product type identity themes</i>	0.19	0.19	10,668
<i>County recreational voter support</i>	0.58	0.07	10,668
<i>Lagged rec. dispensary county count</i>	15.81	24.65	10,668
<i>Lagged medical dispensary county count</i>	73.69	53.62	10,668
<i>Rec. voter support × Rec. disp. count</i>	10.16	16.35	10,668
<i>Lagged reviewer product focus</i>	0.70	0.16	10,668
<i>Lag. review count, ln</i>	3.57	1.3	10,668
<i>Rec. voter support × Rev. product focus</i>	0.41	0.11	10,668
<i>Time trend</i>	14.77	6.93	10,668
<i>Lagged reviewer medical focus</i>	0.44	0.19	10,668
<i>County Weedmaps visits, ln</i>	14.29	1.42	10,668
<i>Lagged prop. of medical disp. reviewers that also review rec. disps.</i>	0.04	0.06	10,668
<i>Weedmaps tenure</i>	3.92	1.62	10,668
<i>Chain</i>	0.12	0.33	10,668
<i>Delivery based</i>	0.15	0.36	10,668
<i>Colorado</i>	0.45	0.5	10,668
<i>County population size, ln</i>	10.64	0.97	10,668
<i>County percentage college educated</i>	37.44	10.16	10,668
<i>County median household income, ln</i>	11	0.15	10,668
<i>County residential instability</i>	19.48	3.1	10,668
<i>County percentage age 18 to 24</i>	0.1	0.02	10,668
<i>County rate of religious adherence</i>	35.75	10.74	10,668
<i>County percentage with disability</i>	11.25	2.7	10,668
<i>Proportion adjacent counties with ban</i>	0.47	0.23	10,668
<i>Lagged product count, ln</i>	4.11	0.84	10,194
<i>Lagged mean strain price</i>	10.38	1.9	8,288

count increases from 0 to 80. This is the range in recreational dispensary density seen from July 2014 to July 2015 across high-voter-support communities, and thus the expected change in medical dispensary's themes one might conceivably witness over the time period studied. As a point of comparison, the dispensaries that are formally licensed as recreational dispensaries have, on average, a proportion of 0.09 of total themes focusing on medical use. This suggests that, at the extreme, medical dispensaries that target recreational customers advance identity statements similar to those of their recreationally licensed counterparts. In contrast, in low-voter-support communities, as the

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Table 2. Medical Dispensaries' Medical-Use Focus in Identity Statements

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Fixed effects			Mixed effects		
	Low voter support	High voter support	Full sample		Full sample	
<i>County recreational voter support</i>					1.419*** (0.307)	1.287*** (0.321)
<i>Lagged rec. dispensary county count</i>	0.002*** (0.001)	-0.002*** (0.000)	0.014*** (0.003)	0.014*** (0.003)	0.015*** (0.003)	0.011*** (0.003)
<i>Lagged medical dispensary county count</i>	-0.000 (0.000)	0.001*** (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
<i>Rec. voter support × Rec. disp. count</i>			-0.023*** (0.004)	-0.024*** (0.004)	-0.024*** (0.004)	-0.018*** (0.005)
<i>Lagged reviewer product focus</i>	0.066*** (0.012)	-0.048*** (0.015)	0.569*** (0.086)	0.580*** (0.087)	0.515*** (0.083)	0.404*** (0.100)
<i>Lagged review count, ln</i>	-0.014** (0.003)	-0.009** (0.004)	-0.013*** (0.002)	-0.013*** (0.002)	-0.012*** (0.002)	-0.014*** (0.003)
<i>Rec. voter support × Rev. product focus</i>			-0.977*** (0.150)	-0.998*** (0.151)	-0.887*** (0.145)	-0.664*** (0.176)
<i>Time trend</i>	0.001*** (0.000)	0.002*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)
<i>Lagged reviewer medical focus</i>				0.014 (0.009)	0.021** (0.009)	0.035*** (0.011)
<i>County Weedmaps visits, ln</i>				-0.006 (0.006)	-0.008 (0.005)	-0.006 (0.006)
<i>Lagged proportion of medical disp. reviewers that also review rec. dispensaries</i>				-0.045 (0.065)	-0.064 (0.062)	-0.030 (0.113)
<i>Weedmaps tenure</i>					0.004 (0.005)	0.007 (0.005)
<i>Chain</i>					-0.007 (0.005)	-0.021*** (0.007)
<i>Delivery based</i>					-0.024* (0.014)	-0.015 (0.016)
<i>Colorado</i>					0.031 (0.032)	0.041 (0.032)
<i>County population size, ln</i>					0.005 (0.013)	0.002 (0.013)
<i>County percentage college educated</i>					-0.004* (0.002)	-0.004* (0.002)
<i>County median household income, ln</i>					0.016 (0.142)	0.019 (0.136)
<i>County residential instability</i>					-0.013** (0.006)	-0.014*** (0.006)
<i>County percentage age 18 to 24</i>					1.072** (0.490)	0.901* (0.473)
<i>County rate of religious adherence</i>					0.000 (0.001)	0.001 (0.001)
<i>County percentage with disability</i>					-0.002 (0.005)	-0.001 (0.005)
<i>Proportion adjacent counties with ban</i>					0.063 (0.055)	0.080 (0.057)
<i>Lagged product count, ln</i>						0.004 (0.002)
<i>Lagged mean strain price</i>						0.000 (0.001)
Constant	0.214*** (0.015)	0.226*** (0.021)	0.249*** (0.013)	0.325*** (0.079)	-0.469 (1.592)	-0.455 (1.543)
Random effects parameters						
Locality-level variance of the intercept					0.000 (0.00)	0.000 (0.000)
Dispensary-level variance of the intercept					0.025** (0.001)	0.025** (0.001)

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Table 2. (Continued)

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Fixed effects				Mixed effects	
	Low voter support	High voter support	Full sample		Full sample	
Observations	4,955	5,713	10,668	10,668	10,668	8,288
R-squared	0.019	0.021	0.018	0.018		
Number of dispensaries	348	346	694	694	694	600
Number of localities					126	112

Note. Standard errors are in parentheses.
 * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

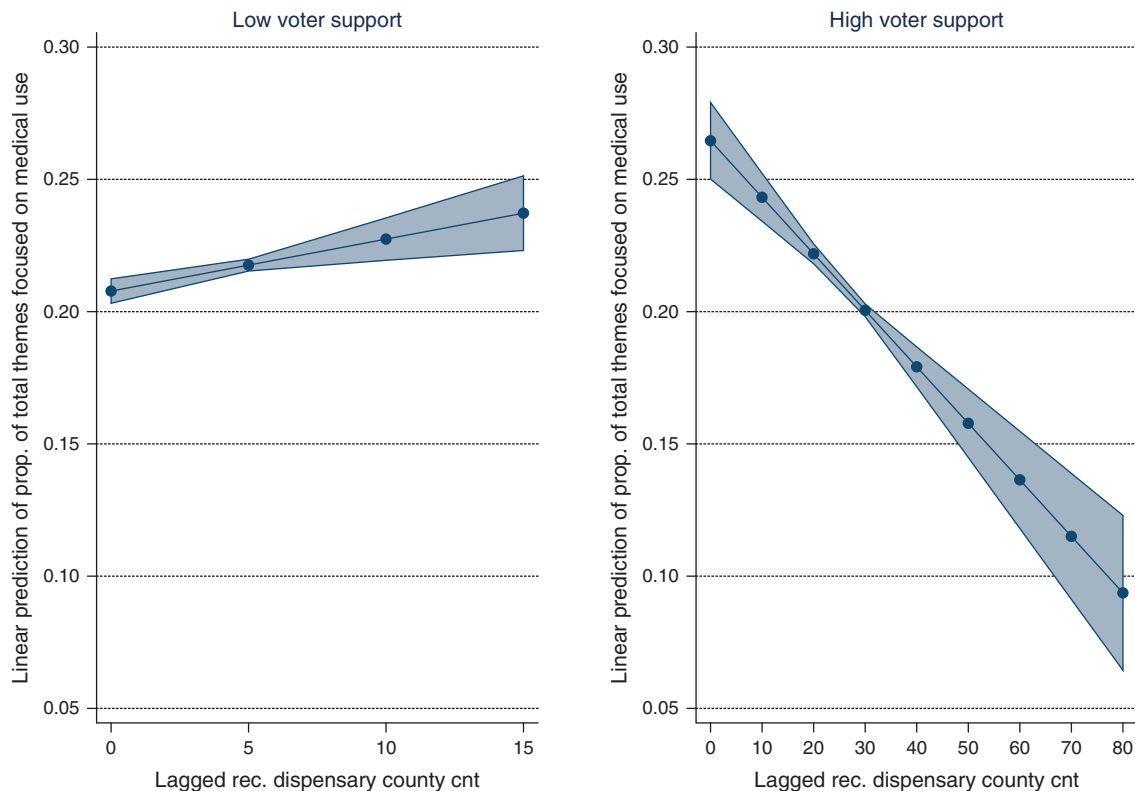
county-level recreational dispensary count increases from 0 to 15 (maximum count of recreational dispensaries in low-support counties), the expected proportion of a medical dispensary’s themes that focus on medical uses of cannabis increases from ~21% to ~24%. Overall, this suggests that as the recreational dispensary population grew over the time period studied, identity-based differences clearly emerged between the behavior of medical dispensaries in low- versus high-voter-support communities.

Models (1) and (2) also show that a dispensary’s reviewers’ product orientation affects its subsequent identity claims in different ways in low- versus high-voter-support communities. In support of H2A, we

find that, in counties with low voter support for recreational use, medical dispensaries increase their focus on medical use in self-descriptions as their existing clientele displays greater product orientation. In contrast, we see the opposite effect in high-voter-support counties (supporting H2B).

Model (3) estimates a fixed effects specification for the full sample of dispensaries. The main effect of lagged recreational dispensary count has a positive effect on medical dispensaries’ medical-use focus, while the interaction of recreational dispensary count with recreational voter support is negative. We see a parallel pattern for lagged reviewer product focus: the main effect is positive, while its interaction with

Figure 2. (Color online) Estimated Effect of Lagged Recreational Dispensary Density on Medical Dispensaries’ Medical-Use Focus in Low vs. High Voter Support Counties



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county voter support is negative. These patterns are consistent with the split sample models—in a community with low support for recreational legalization, the growth of nearby recreational dispensaries and increasing customer base focus on recreational uses of cannabis push medical dispensaries to emphasize their medical orientation. As voter support for recreational legalization increases, however, medical dispensaries de-emphasize their medical orientation with growing recreational competition and increasing recreational focus among existing customers.

Of the control variables in Models (1)–(3), we see that greater lagged count of posted reviews has a negative effect on dispensaries' focus on medical use in their identity statements. One possibility for this negative coefficient is that as a dispensary's customer base increases, it tends to move to broaden its appeal by decreasing its earlier medical-use orientation. Lagged medical dispensary density has a positive impact on medical orientation in counties with high voter support for recreational legalization.⁸ While we did not have any a priori expectation of the direction of this effect, one possible explanation is that greater presence of medical dispensaries indicates the presence of a stronger medically focused cannabis community within a county. This may influence medical dispensaries' identity positioning in counties with strong support for recreational dispensaries by keeping them tied to their medical origins. Model (4) adds controls for a dispensary's lagged reviewers' focus on medical themes, proportion of medical dispensary reviewers that also review recreational dispensaries, and number of Weedmaps visits to dispensaries in the same county as the focal dispensary. None of these additional covariates significantly affect dispensary medical orientation.

Mixed effects specifications for the full sample are presented in Models (5) and (6). Model (5) includes dispensary characteristics and county-level measures that may be correlated with local support for recreational cannabis. Model (6) adds dispensary product and price controls. In both models, we continue to find support for Hypotheses 1A, 1B, 2A, and 2B. The main effect of voter support estimated in these mixed models is positive: dispensaries in localities with greater support for recreational cannabis tend to have greater emphasis on their medical orientation. The effect of recreational dispensary density, estimated as positive in these models, negatively interacts with the effect of voter support. Thus, we have results consistent with the split sample models: recreational-competitor density increases focus on medical dispensaries' medical-use identity in localities that disapprove of recreational legalization, but has the opposite effect in localities that support the recreational form. Several control variables are also correlated with dispensaries' focus on medical uses

of cannabis. Counties with greater representation of college-educated adults and in which residential instability is high have a lower medical identity orientation, indicating greater acceptance of recreational cannabis. Surprisingly, dispensaries in counties with a higher percentage of adults aged 18–24 years were also more likely to emphasize medicine.

To examine the robustness of our effects, we use logit models that estimate whether each medical dispensary increased its medical-use identity orientation from the first to last time period it appeared on Weedmaps during the period studied (July 2014–July 2015), clustering standard errors at the county level. We find results consistent with our main panel models. In counties with low voter support for recreational legalization, medical dispensaries responded to increases in recreational dispensary density by increasing the medical-use focus in their identity statements. In counties with high recreational voter support, we find the opposite pattern—medical dispensaries were significantly less likely to increase their medical-use focus as recreational dispensary competition increased.

We also reestimated our main models excluding several different dispensary subsets: those that (1) did not change their Weedmaps self-descriptions over the time period studied (7% of sample), (2) had fewer than five unique reviewers (11% of sample), and (3) were members of a larger organizational chain with a recreational dispensary (5% of sample). Finally, we estimated models including each medical dispensary's original focus on medical-use themes at the time it first entered the data set. Our hypothesized effects of local voter support for recreational legalization, competitive pressures, and customer orientation hold across these supplementary models.⁹

Exploratory Analyses

We find general support for our hypotheses regarding how the identity claims medical cannabis dispensaries advance in response to the emergence of recreational dispensaries vary in different types of local contexts. One issue that warrants greater consideration, however, is whether medical dispensaries' identity-based responses were merely symbolic versus connected to related changes in dispensary operations. Dispensaries' changing product portfolios provide insight into this issue. Medical patients often seek cannabis products that are labeled as high in cannabinoids (CBD) since these have been associated with a range of medical benefits (Whiting et al. 2015). We expect dispensaries that sell more such medically oriented cannabis products to emphasize their medical orientation in identity claims.

To test this, we first coded the products listed for the 596 dispensaries that posted menus on Weedmaps,

treating a product as high CBD if its name corresponded to Leafly.com’s list of high-CBD cannabis strains (Rahn 2016) or if it was explicitly labeled “high CBD” on the dispensary’s menu. We then consider the effect of a dispensary’s lagged self-description medical orientation (lagged proportion of total themes that focus on medicine) on its count of high-CBD products. Using fixed and random effects Poisson models estimating the count of high-CBD products sold by dispensaries, we find that a greater lagged medical identity focus has a positive effect on the count of medically focused products. We then estimate the effect of a dispensary’s lagged proportion of high CBD products (out of all products on its menu) on its medical identity orientation in fixed and random effects models. We find that a higher proportion of medical products has a positive effect on a dispensary’s medical identity focus; that is, dispensaries with greater representation of medical products in their menus tend to emphasize medical uses of cannabis more in their identity claims.

These results suggest a possible coevolutionary dynamic: a dispensary’s product mix influences how it frames its identity claims, just as a dispensary’s identity claims affects its product inventory decisions. Together with our earlier validity checks (which found that dispensaries that charge higher prices focus less on price in their identity claims, while those that have more extensive product inventories focus more on products in their claims), this indicates that dispensaries’ identity claims are not purely symbolic, but rather connected to underlying organizational features.

We also, in a second exploratory analysis, consider how Colorado’s and Washington’s distinct sociopolitical contexts shape how medical dispensaries interact with the different audiences they rely on for support and resources. Field theorists suggest that incumbent actors’ social positions within their sociopolitical structure will shape how they respond to new challengers to their market (Fligstein and McAdam 2011, Waldron et al. 2012). In unsettled times, organizations who hold considerable standing are expected to engage in actions that protect and maintain the existing structural arrangements that favor them. McDonnell and King (2013) further find that organizations with higher reputational standing are more likely to increase prosocial claims that reaffirm their positive public images in response to social movement boycotts relative to organizations lower in the market hierarchy. We accordingly expect medical dispensaries’ positioning decisions will be more responsive to concerns with maintaining legitimacy within their voting communities when they enjoy greater standing within their state’s political infrastructure.

Here, we observe major differences for medical dispensaries operating in Colorado versus Washington.

By 2012, Colorado had a well-developed infrastructure overseeing the licensing and regulation of medical cannabis dispensaries; medical dispensaries operated in the clear as legally sanctioned businesses. Crombie (2013) reports that many medical dispensaries were “happy to follow Colorado’s strict standards, seeing compliance as a mark of legitimacy”; that is, they enjoyed not only legal standing but also legitimacy in the eyes of their legislators and voting community.

In contrast, Washington’s medical dispensaries have never been formally licensed or regulated by the state. When Washington’s initial medical cannabis law was passed in 1998, it allowed for the consumption of cannabis for medical use but was silent with regard to the legality of medical-use dispensaries (Pacula and Sevigny 2014). Since policing dispensaries was a low priority for the state, Washington’s unregulated medical dispensaries proliferated over the years (Jacobs 2014). The 2012 state ballot focused only on the recreational-use sector, remaining silent on the regulation of medical dispensaries (Gray 2013). Medical dispensaries thus perceived recreational-use legalization as a threat to their survival, fearing the creation of a legal recreational market would lead regulators to close medical dispensaries operating in the unregulated “grey” market (Toon 2014).

Table 3 presents models exploring the relative influence of community voter support on medical dispensaries’ identity claims in Washington relative to Colorado. We conduct these analyses at the county level, using random effects models to estimate the impact of lagged recreational localized density on the average

Table 3. County-Level Analyses of Medical Dispensaries’ Identity Statements

Variables	(1) All	(2) Colorado	(3) Washington
<i>Lag. recreational dispensary county count</i>	0.027** (0.01)	0.090*** (0.02)	−0.034 (0.02)
<i>Lag. medical dispensary county count</i>	−0.001** (0.00)	−0.000 (0.00)	−0.003*** (0.00)
<i>County recreational voter support</i>	0.633* (0.33)	1.001*** (0.35)	1.326 (0.83)
<i>Rec. voter support × Rec. disp. count</i>	−0.039** (0.02)	−0.138*** (0.03)	0.063 (0.04)
<i>Lagged local interest, ln</i>	−0.026*** (0.01)	−0.009 (0.02)	−0.018* (0.01)
<i>Time trend</i>	0.000 (0.00)	−0.000 (0.00)	0.001 (0.00)
Constant	0.238 (0.20)	−0.249 (0.35)	−0.166 (0.44)
Observations	864	447	417
Number of county_id	42	21	21

Note. Standard errors are in parentheses.
 * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

focus on medical uses of cannabis in medical dispensaries' self-descriptions within each county. Model (1) includes counties in both Colorado and Washington and shows that the effect of lagged county-level recreational dispensary density on medical dispensaries' medical-use focus is positive ($p < 0.01$), while its interaction with local voter support for recreational legalization is negative ($p < 0.01$). Models (2) and (3) estimate models separately for Colorado and Washington. The effect of lagged recreational dispensary density and its interaction with local voter support for recreational legalization continues to hold in Colorado, while the effects for both in Washington are statistically insignificant. Supplementary analyses conducted at the dispensary level reveal similar across-state patterns.

Overall, these results suggest that medical dispensaries in Colorado were more responsive to the influence of their local voting communities than their Washington counterparts. As in the case of the reputable organizations studied by McDonnell and King (2013), Colorado's medical dispensaries displayed greater concern with maintaining legitimacy and protecting the positive public image of the medical dispensary form. While only exploratory, our results suggest that the sociopolitical structure of the markets in which category incumbents and challengers compete will shape the strength of segregating versus blending mechanisms within the different markets and how their competitive interactions unfold (Fligstein and McAdam 2011, Waldron et al. 2012). Future research designed to isolate how the audience-based identity processes observed here play out in different sociopolitical contexts is needed to push understanding forward.

Discussion

Fligstein and Dauter (2007, p. 119) propose that "[a] fruitful dialogue is needed between those who favor a more cultural approach to consumers that focuses on the moral and social uses of products and those who favor an approach that stresses solving the problems of competition for producers." Our study uses insights from both approaches to develop an integrative framework of category coevolution. Our hypotheses center on the premise that how incumbent category producers respond to the emergence of a new competitor category will be influenced in no small part by the desire to maintain value congruence with the audiences that it relies on for support.

Ours is hardly the first study to move in this direction. Theories of market partitioning have increasingly focused on the role social movements play in creating oppositional identities (Carroll and Swaminathan 2000, Greve et al. 2006). Similarly, research has shown market change is often driven by diffuse cultural changes promoted by institutional entrepreneurs

and social movements (Davis et al. 2005, Schneiberg et al. 2008, Hiatt et al. 2009, Sine and Lee 2009). Researchers further suggest the success of new category entrepreneurs is contingent on their ability to appeal to cultural codes that resonate with the broader market community (Fourcade and Healy 2007, Weber et al. 2008).

Our study adds to this thriving literature by explicitly considering variance in different audiences' beliefs about the legitimacy of products and its implications for market producers seeking to connect with and appeal to current/potential consumers. In cases where there is tension between different audiences' demands (e.g., low voting-community support for recreational legalization versus increasing customer demand for recreational cannabis), we found that incumbent category members generally adopt a risk-averse stance. In response to increasing recreational dispensary density, medical dispensaries position themselves in ways that maintain congruence with the voting communities within which they are embedded by emphasizing their medical orientation. Even more, medical dispensaries in communities with low support for recreational use emphasize their medical focus more when their existing clientele displays greater recreational orientation. Exploratory comparisons suggest that in Colorado, where the incumbent category enjoyed greater sociopolitical standing relative to Washington, medical dispensaries appear more responsive to their local voting communities. As recreational dispensary density increased in Colorado's low-voter-support communities, medical dispensaries increased their identity claim of medical orientation more than their Washington counterparts in the same voter-community conditions.

Our research also contributes to work on the coevolution of categories (Popielarz and Neal 2007). Existing research points to several factors shaping how new category members situate themselves vis-à-vis incumbent categories. According to resource partitioning theory, new category entrants often proliferate in specialized, peripheral niches when resources and scale-based advantages are concentrated in a market's center (Boone et al. 2002, Negro et al. 2014). Alternatively, new categories may target overlapping regions of resource space when supported by collective social movements that attack the foundations undergirding incumbent categories (Rao et al. 2003, Weber et al. 2008, Sine and Lee 2009). Such contextual factors shape the initial positioning of emerging categories and, as a result, the coevolution of "old" and "new" within a market. Yet, the nature of this coevolution is also shaped—perhaps to an even greater extent—by the actions taken by incumbent category members in response to the new category. Our research suggests that understanding how incumbents will position

themselves vis-à-vis new competitor forms requires not only a focus on competitive dynamics among producers, but also on how different positioning decisions align or misalign producers with the values espoused by powerful audiences.

Our research also contributes to research on organizational identity, which has focused considerable attention on how entrepreneurs entering new market categories build a compelling shared identity (Lounsbury and Glynn 2001, Navis and Glynn 2010, Kennedy 2008, King et al. 2011). We highlight the importance of local cultural resources on incumbent category members' identity-based moves in response to new category emergence. Our framework points to conflict in different audiences' beliefs regarding the legitimacy of market offerings as a key facet of organizations' local contexts. In contexts where there was no conflict (i.e., both local voters and a dispensary's customer base supported recreational uses of cannabis), medical dispensaries hybridized their identities in ways that allowed them to broaden their appeal to recreational customers; that is, they were able to blend elements from the medical and recreational categories in their identity statements without fear of losing legitimacy in the eyes of key audiences (Battilana and Dorado 2010). In contrast, when value-based conflict existed (i.e., local voters signaled disapproval of recreational-use cannabis while customers expressed increasing recreational orientations), dispensaries were compelled to make a choice of which audience to strengthen versus weaken their identification with (Pratt and Foreman 2000, Kraatz and Block 2008). Our research contributes to understanding of how local conditions shape the way in which organizations shift their identities in response to new category threats, and thus paves the way for a broader understanding of institutional change mechanisms (Washington and Ventresca 2004, Marquis and Battilana 2009).

We developed our conceptual framework to explain medical dispensaries' identity moves in an empirically remarkable context—the early stages of a shift from state tolerance of purely medical to nonmedical markets for cannabis. Yet, we believe similar dynamics can be found in a broad range of markets where cultural change drives changing market dynamics, including beef and dairy markets (Weber et al. 2008), sectors for energy and independent power (Sine et al. 2005, Sine and Lee 2009), and education (King et al. 2011). Markets are composed of groups with different interests, and cultural change invariably occurs at different rates among these different audiences. As a result, one often witnesses multiple, diverging logics pervading a market concurrently (Lounsbury 2007). Organizations in such contexts must carefully manage their identities, signaling to audiences where they stand amid the shifting cultural landscape. Our study suggests that

systematic analysis that blends fine-grained understanding of the social context within which identity narratives are advanced with automated approaches to quantifying the evolution of markets can be a fruitful approach for advancing the cultural analysis of markets (Bail 2014).

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Endnotes

¹ While there is likely to be some degree of overlap in membership between these two audiences, the empirical context allows us to measure general values expressed by each audience across localities.

² In Washington during the period under investigation, medical dispensaries were not licensed through the state, and were therefore not subject to the state's regulations or cannabis taxes.

³ In Washington, for example, the state ballot initiative legalizing recreational-use cannabis stated that "You cannot set up a store within 1,000 feet of any elementary or secondary school, playground, recreation center or facility, child care center, public park, public transit center, library, or game arcade that allows minors to enter" (Washington State Liquor and Cannabis Board 2016). Yet, recent legislation made this regulation more flexible, allowing "local governments to pass an ordinance to allow for a reduction in the 1,000-foot buffer requirements to 100 feet around all entities except elementary and secondary schools and public playgrounds" (see http://lcb.wa.gov/mjlicense/distance_from_restricted_entities).

⁴ In our July 2014 searches, the website Leafly listed 1,051 dispensaries, THC Finder listed 3,365, and PotLocator listed ~2,500. In comparison, Weedmaps listed 4,423 dispensaries nationally. Our sample focuses on Colorado and Washington only (1,162 dispensaries listed on Weedmaps). In Colorado, we compared the dispensaries listed on Weedmaps to those with active licenses issued through the state's Department of Revenue. Of the 562 medical dispensaries with active licenses during our study period, 426 (76%) were listed on Weedmaps. Out of the remaining 136 dispensaries with active licenses at some point during the period July 2014 to July 2015, two-thirds (90) were no longer licensed as of July, 2015, suggesting that a substantial proportion of licensed dispensaries not listed in our database may have never been operational or were in the process of closure. This comparison suggests our data set provides a reasonable approximation of dispensaries in active operation in Colorado. A similar comparison was not possible in Washington, where medical dispensaries were not licensed or regulated.

⁵ We also use data from 185 recreational dispensaries operating in Colorado and Washington during the time period to construct key independent and control variables. Twenty-seven Colorado-based medical dispensaries in our data set converted to recreational-use

dispensaries during the study period. After converting, these dispensaries were dropped from analyses focusing on medical dispensaries only.

⁶Data were collected from <http://data.denverpost.com/election/results/amendment/2012/64-legalize-marijuana/> and http://results.vote.wa.gov/results/20121106/Initiative-Measure-No-502-Concerns-marijuana_ByCounty.html (accessed November 17, 2014).

⁷It is difficult to determine how representative the reviews on Weedmaps are of dispensaries' customer bases. One way to explore this issue is to look at the correlation between Weedmaps webpage visits (the number of times the dispensary's Weedmaps profile was loaded—the Weedmaps server automatically logs this) and the number of reviews the dispensary gets. If reviews provide a representative snapshot of a customer's user base, this should be reflected in a strong, positive correlation between webpage visits and number of reviews. This correlation for the dispensaries in our main sample is 0.55, suggesting a fairly strong but not perfect correlation between reviews posted and website visits.

⁸County-level medical dispensary density is correlated at 0.69 with county-level recreational dispensary density. Our results are consistent with and without the addition of this control.

⁹All supplementary models mentioned in this paper are available upon request.

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