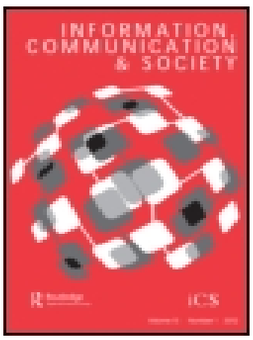

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Professionalization through attrition? An event history analysis of mortalities in citizen journalism

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ABSTRACT

Despite both scholarly and popular claims that citizen journalism (CJ) represents a growing democratizing force in the journalistic field, recent scholarship in the area has noted the decline of the organizational population of CJ. In this paper, we investigate how individual characteristics of sites and the dynamics of larger organizational population affect a CJ site's risk of experiencing a mortality. Drawing on the largest sample to date of US-based English-language CJ sites, this study examines the risk of site mortality through an event history framework. Findings indicate that the strongest predictor of a site's mortality is the age of the site, consistent with organizational population theory's 'liability of newness.' We also find that for-profit and community-based sites have lower rates of site mortality, indicating that adopting legitimate conventions of journalism may serve as a protective buffer to site death. The results offer mixed evidence on whether CJ has become more professionalized via attrition.

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Citizen journalists, long a pre-occupation for media scholars and journalists, are now an accepted part of the larger news ecosystem. Often heralded for their radical potential to provide news from civil society or provide the kind of news that profit-driven professional news outlets ignore, citizen journalists need not reproduce the types of structures or norms commonplace in professional journalism (Fanselow, 2009; Meadows, 2012; Reese, Rutigliano, Hyun, & Jeong, 2007; Rutigliano, 2008; Schaffer, 2007; Wall, 2015). Despite the optimistic claims of many scholars and pundits regarding the democratic potential of citizen journalism (CJ), recent research indicates a decline in CJ. Our previous research (Lindner & Larson, 2017) has shown that between 2000 and 2010, the population of US CJ web sites grew dramatically, reaching a peak of approximately 1300 sites. However, foundings of new CJ sites began to decline starting in 2006 and CJ mortalities grew dramatically after 2011. We have argued that the growth of social media as well as conventional dynamics of organizational populations helped explain the post-2010 decline in the population of CJ sites.

But not all CJ sites are equally likely to go dark. Our previous scholarship establishes the rise and subsequent decline in the CJ online population, and we expand upon this by asking, 'what site characteristics or population dynamics make sites more or less likely to

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survive?' In this paper, we explore mortalities of CJ web sites in order to better understand what it takes to survive in the digital news ecosystem and how US-based online CJ may have changed since its radical origins. By investigating which websites die and which survive the competitive media landscape, we can gain insights into how the field of CJ is changing. This change gives clues to what CJ may look like in the near future and what potential for democratizing media practice the CJ field holds.

Using an event history framework, we examine how site-level characteristics (e.g., for-profit model, having an editorial staff, focusing on politics, etc.) and population-level factors (e.g., density of sites in the organizational field, annual rate of journalist unemployment, etc.) shape an individual site's risk of experiencing a mortality. In doing so, we make two important contributions to our understanding of the phenomenon of CJ. First, we test the utility of theory from organizational population ecology at the individual site level for explaining its decline. Second, we examine how various site characteristics influence the stability of CJ sites, to gain a better understanding of how the nature of the CJ population changed from its heyday to the end of the observed period and, therefore, what it may mean for its contributions to both the journalistic field and democratic discourse.

We begin by reviewing the relevant literature on CJ and organizational population ecology. We then describe the data collection of a 'near-population' of CJ websites and the accompanying content analysis that produced the data used in this study. Next, we review the results of an event history analysis of CJ site mortality. Finally, we conclude by considering what these results mean for the population of CJ sites left behind after the overall population had declined.

Literature review

What is a CJ site mortality?

Demographers explore mortality rates in people and organizational researchers investigate mortalities in all manner of organizations including businesses, professional associations, unions, etc. In this study, we examine mortalities of CJ sites. In some ways, web sites are similar to other organizations in that they conduct activities, have hierarchies, and must perform some basic bureaucracy functions.

However, unlike other organizations, web sites can be founded and closed down rather capriciously because of the low costs of entry and exchange. Rarely does a shop go out of business but leave their doors open to the public. But many sites die off unceremoniously by simply ceasing to produce new content while leaving the existing content up for public consumption. For the purposes of this research, we consider a site to have experienced a mortality if: (a) it was no longer available (i.e., a dead link) or (b) if it had not produced new content in the prior six months.

Citizen journalism

Forms of journalism, produced by citizens, have existed for as long as there has been a concept of 'news.' The 'citizen journalism' that emerged in the early 2000s (alongside the use of that term for it) was mostly digital (Lewis, Kaufhold, & Lasorsa, 2010). The

growth of this new online population of CJ sites was supported by new easy blogging platform and, later, smartphones with cameras and video capabilities, democratizing access to tools of journalistic production (Lindner & Larson, 2017). From social movements supported by mobilizing information provided by citizen journalists to communities where hyperlocal CJ sites enrich civic life, over the past 15 years, forms of CJ have made important contributions to journalism in the public interest. At the same time, professional journalists have come to recognize – sometimes with reluctance – that following CJ is an essential part of the task of newsgathering.

All organizational populations change over time, and CJ is no exception. The two principle mechanisms of organizational change are isomorphism and attrition. Isomorphism is the tendency of organizations within the same population to adopt similar structures and practices that have proved successful (Deephouse, 1996; DiMaggio, 1991). One way that CJ has changed over time is by borrowing practices from professional journalism. Research has shown that CJ sites that adopt the legitimating structures (e.g., an editorial staff) are more likely to engage in routine practices common in professional journalism (Lindner, 2016). Over time, CJ may have challenged some norms in professional journalism, but it has also come to look more like professional journalism via isomorphic processes.

The other way organization population change is through the more Darwinian process of attrition. Practices matter. Any revenue-generating organization without an accounting strategy is unlikely to last long. Thus, organizations that adopt better practices and structures are more likely to succeed and those that do not, experience organizational mortality (Hannan & Freeman, 1977). Over time then, organizational populations come to be more homogeneous because most of the surviving organizations tend to share the 'fittest' characteristics. Among non-profits, for example, past research has found that a reliance on voluntary staff as opposed to paid staff is associated with a greater risk of organizational closure (Hager, Galaskiewicz, & Larson, 2004).

To date, with the organizational population of CJ, we know little about which characteristics are most strongly associated with organizational survival and mortalities. Consequently, research on CJ has yet to document how the organizational population may have changed via attrition. Though some research has noted growing professionalization in CJ via isomorphic patterns, the current research allows us to examine whether organizational mortalities have contributed to an increasing professionalized population or one that more radically diverges from the professional paradigm of journalism.

While the label 'citizen journalism' would seem to refer to a singular phenomenon, existing research has shown that it is actually quite heterogeneous. Despite a reputation for being amateurs, multiple studies have shown that many – if not a majority – of citizen journalists have some background in professional journalism (Carpenter, Nah, & Chung, 2013; Lindner, Connell, & Meyer, 2015). Some research has conflated CJ with community journalism, while more recent analyses have shown hyperlocal, 'newspaper replacement' journalism to be merely one branch of the CJ (Wall, 2015). Others have defined CJ by its radical political potential and, though political sites are certainly part of CJ, what Wall (2015) calls 'The Resistance' is only one form of CJ. Moreover, some community sites are, in fact, political (Lindner et al., 2015).

Political CJ sites have tended to earn special attention from media theorists and activists enthusiastic about their capacity to mount a challenge *doxa* within professional

journalism (Lewis et al., 2010; Lindner & Larson, 2017). Freed from demands of the for-profit news paradigm and without industry gatekeepers to answer to, political CJ sites can use unofficial sources rather than official ones, challenge authority, and represent more diverse perspectives, so the story goes. Empirical findings have shown that the differences in content between some CJ sites and professional news sites are not a big as purported (Carpenter, 2008, 2010; Lindner, 2016). Still, the exact traits that make political CJ exciting to media observers may make it harder for them to survive. Without the legitimacy of journalistic norms and structures, political CJ sites may struggle for resources and audiences.

By contrast, many community sites are quite conventional, seeking to emulate the olden days when many small towns had local newspapers to cover civic events (Wall, 2015). Such sites often maintain a community calendar of events and report on stories of hyperlocal interest. Rather than challenging the prevailing practices in professional journalism, community CJ sites typically seek to provide the content that the pros fail to offer. By tapping into local readership and adopting legitimate practices within the journalistic field, community sites may be more likely to be able to sustain a CJ site.

While the topical focus of a site is important, so, too, are its organizational structures. In Deuze's (2003) typology of 'online journalisms,' he contrasts mainstream news sites, which concentrate on editorial content and have high degrees of moderation, with the more radical 'share and discussion' sites, which lack editorial control. These share and discussion sites 'facilitate the need for people to connect with other people worldwide, unhindered, in real time … [producing] a "just" communications infrastructure' (Deuze, 2003, p. 211). Structures like having non-staff contributors, single authors, and not having an editorial staff are a step away from the accepted conventions in journalism and a step toward more radical reconfigurations of journalism online. With less legitimacy, such models may put a site's survival at risk.

Finally, under-recognized in the literature is that as many as 40% of CJ sites are for-profit, in contrast to the popular image of CJ as being borne of civic voluntarism (Lindner et al., 2015). To be sure, most for-profit CJ sites make very little money, but they still operate with at least some minimal profit motive (Carpenter et al., 2013). Few studies exist that make direct comparison of non-profit and for-profit organizations, in part, because the two organizational forms are rarely in a direct competition as is the case in CJ (Helmig, Ingerfurth, & Pinz, 2013). That said, there are several reasons being for-profit may contribute to a lower risk of site mortality. First, since for-profit sites have economic 'skin in the game,' there may be more substantial financial costs associated with a mortality (in addition to the social and ego costs that come with many site closings). Second, for-profit sites may have resources that allow them to draw larger audiences, thus sustaining the site. Third, for-profit CJ sites may have additional resources allowing them to weather tough times.

In this study, we explore whether these traits of CJ sites – community focus, political focus, organizational structures (multiauthor, non-staff contributors, and editorial staff), and for-profit status – affect a site's risk of experiencing a mortality or site closing. While we can only speculate about *why* for-profit sites, for example, are more likely to survive, this study is the first to examine the survival chances of individual sites within CJ. In doing so, we are able to observe either the persistence of a radical vision for journalism or growing professionalization through attrition.

Organizational population ecology

Characteristics of individual sites are important for understanding whether that site is likely to close or survive, but so are features of the larger organizational population. For the current research, we use three key concepts from organizational theory: density dependence, density delay, and the liability of newness. Below, we briefly discuss each of these concepts and how they can be applied to the current research questions. To be clear, we do not aim to contribute to organizational population theory; rather, we aim to use it to illuminate the dynamics of CJ.

Hannan and Freeman (1977) have proposed that nearly all organizational populations follow a curvilinear pattern of growth, with initial increases in organizational density followed by subsequent declines. As a population of organizations grows, that industry gains increasing legitimacy, lowering the risk of entry for new organizations. At some point, however, 'competitive processes in an environment with a finite carrying capacity' lead to substantial organizational mortalities (Delacroix, Swaminathan, & Solt, 1989, p. 246). This 'legitimation-and-competition' effect is also known as 'density dependence.' We would expect that initial growth in CJ sites would be associated with low risk of mortality, while subsequent growth would increase a site's risk of mortality. To capture these potential effects, we examine the effect of CJ site density in a given year (as well as a squared term to capture the non-linear pattern) and the number of new foundings in a given year.

Continuing in this line of logic, several researchers have suggested that density at the time of founding as well as contemporaneous density may have an effect on organizational mortality (Barron, West, & Hannan, 1994; Carroll & Hannan, 1989). In proposing the concept of density delay, Carroll and Hannan (1989) propose three reasons why density at founding might lead to a higher probability of mortality. First, they claim 'intense competition at time of founding (due to high density) creates conditions of resource scarcity' (p. 415). Without essential resources, organizations have difficulty moving to 'full-scale operations' and are more likely to imprint dysfunctional structures. Second, at times of high density, the newly founded organizations are forced to market to a narrow niche to avoid head-to-head competition with older, more stable organizations. In marketing to a narrower segment, they are less likely to survive than organizations marketing to wider audiences. Finally, as a third reason, they suggest that being founded in time of high density is a 'trial by fire.' Frail organizations that might find a way to survive in more favorable circumstances are weakened by the intense competition associated with high density. With reference to CJ sites, we would expect that higher density at founding would be associated with a higher risk of mortality.

A final organizational concept, the liability of newness, stems from Stinchcombe's (1965) observation that newer organizations are more likely to fail than older organizations. Using this idea, Hannan and Freeman (1977) argued that organizations with greater reliability and accountability were more likely to expand and become successful. Reliability and accountability are developed through many repetitions of the same function. Older organizations that have more experience are more likely to be highly reliable and, therefore, successful than younger organizations. For this reason, we include a measure of CJ site age in our model.

In our model, we also control for one more environmental factor related to the larger journalistic field: the rate of journalist unemployment (2000–2012). The years from 2000

to 2012 were a turbulent time for journalism as the Internet brought waves of new challenges to the newsrooms of legacy media organizations. With free news online contributing to both losses in subscribers and a decline in ad rates, news organizations responded by seeking new revenue streams (e.g., sponsored content, white label productions, premium content, etc.) and cost-cutting tactics (e.g., cooperative newsgathering agreements, centralized copyediting centers, etc.) (Curran, 2010; Hochberg, 2013; Potter & Matsa, 2014). Even as news organizations reduced their staffing needs, they also laid off large numbers of journalists in order to minimize profit losses. The Bureau of Labor Statistics reports a loss of 15,530 jobs in journalism, roughly a 25% decline, in the 10 years from 2002 to 2012 (U.S. Bureau of Labor Statistics, 2012). We use the annual rate of journalist unemployment as a proxy measure of the strength of professional journalism as a whole. We do not assume that professional and CJ are locked in a zero-sum game. However, it may be the case that weakness within professional journalism created opportunities for CJ as the audience and potentially journalistic talent flowed to CJ sites. For this reason, we anticipate a lower risk of mortality in years with higher journalist unemployment.

In sum, our study investigates how site-level traits and conditions of the larger organizational environment affected the risk that a CJ site would experience a mortality. These findings contribute to our understanding of which practices and structures are associated with success in CJ, but also how the population may have changed in nature over time.

Methods

The data used in this study are taken from a content analysis using the largest sample of US-based, English-language CJ web sites to date. It has been used in a number of previous studies including Lindner (2016), Lindner et al. (2015), and Lindner and Larson (2017). In this section, we describe the data collection, methods, and analytical strategy in brief. However, a much more complete description of the data collection can be found in Lindner and Larson (2017). For descriptive statistics on all measures, see Table 1.

Data

The data for the current study were drawn from a quantitative content analysis of a near-population of English-language, CJ web sites in the United States. Via online searches and

Table 1. Descriptive statistics of CJ population.

Variable	Description	Mean	SD	Minimum	Maximum
Editorial staff	Indicator of an editorial staff (1 = yes)	0.48	0.50	0	1
For-profit	Indicator of a for-profit site (1 = yes)	0.40	0.49	0	1
Non-staff contributors	Indicator for non-staff contributors (1 = yes)	0.26	0.44	0	1
Political topic	Indicator for site that covers politics (1 = yes)	0.39	0.49	0	1
Community site	Indicator for site that has community focus (1 = yes)	0.45	0.50	0	1
Multiauthor	Indicator for site that has more than 1 author	0.62	0.49	0	1
Journalist unemployment	Yearly journalist unemployment rate (BLS)	11.82	2.30	7.9	14.9
Site age	Age of site in years	4.439	2.80	1	13
Yearly foundings	Total foundings in the current year	119.43	60.28	20	268
Founding density	Total foundings in the year of site founding	886.38	421.09	81	1410
Current density	Total site density in the current year	1170.89	319.91	81	1410

database combing, a team collected an exhaustive list of English-language, CJ web sites in the United States. We utilized a snowballing sampling method to pull in self-identified CJ web sites, following links on those sites to expand our sample. Sites included in our sample (1) had to explicitly describe self-describe (typically in the title or the 'About' page) as being engaged in CJ or be identified as CJ by another source; (2) had to be based in the United States and available in English and (3) could not be connected to any professional news organization. These efforts produced a sample of 1036 currently active web sites, 238 inactive but accessible web sites, and 555 dead links. We believe we have captured nearly all existing CJ web sites (a 'near-population'), though these data are not without inherent complications. Like nearly all Internet research, we face the survivorship bias, in that it is impossible for us to know about a site that once existed if it was not listed or linked by any current databases or CJ web sites.

The CJ sites were coded on the relevant measures in several ways. First, we used information from a database on CJ and 'community news' sites collected by the Knight Community News Network (KNCC) (http://kcnn.org/citi-media-site/). Next, we hired independent workers on Amazon's Mechanical Turk (MT) to code several variables. As a reliability check, these MT researchers hand-coded 327 of the active sites. By combining data from the KNCC survey, MT, and the researchers' hand-coding and by engaging in multiple layers of data verification and reliability testing, we have a high degree of confidence that our data accurately represent the population of CJ sites fitting our sample profile. We have missing data on either starting or ending dates and site-level characteristics, bringing our complete-case sample to 514 sites.[1] We analyze the data in site-year format, by splitting each site case into yearly sub-episodes to analyze the effects of year-to-year time-varying covariates, resulting in a 'spell' sample size of 3,272 after listwise deletion for missing data.

Dependent measure

Our dependent measure is the hazard of site mortality, which is a function of the *probability of mortality* and *duration*, and can be interpreted as the conditional probability a site experiences a mortality in an interval given it has survived until that interval. Duration is coded in yearly episodes, and mortality is an indicator variable (1 = yes, 0 = no) of site mortality. As stated above, we consider a site to have experienced a mortality if: (a) it was no longer available (i.e., a dead link) or (b) if it had not produced new content in the prior six months as of June 2013.

Independent measures

Our first block of explanatory variables consists of site-level characteristics. We include time-constant indicator variables[2] (1 = yes, 0 = no) from the CJ population collection for a number of site attributes. Each measure was coded based on the explicit presence of any of the site attributes mentioned on the CJ website (for more detail on measurement and coding procedures, see Lindner et al., 2015). We measure the presence of an editorial staff, whether the site had a for-profit organization, the presence of non-staff contributors, whether the site was coded as a political site, whether the site had a community-based/hyperlocal orientation, and the presence of multiple authors. As stated above, our goal

is to explore how these site characteristics either increase risk or provide a buffer to site mortality.

We also include measures at both the site and year level to examine the organization population dynamics. These measures are time-varying covariates as they change over course of the observation period. First, we include a measure of site age, calculated as the founding year subtracted from the historical year of the episode, to test the possibility of 'liability of newness' in which newer sites are more likely to experience a mortality. To test the 'density dependence' hypotheses, we include a measure of the density of the current year, as well as a quadratic term to capture any non-linear effects. We do the same for density at founding, which will indicate whether 'density delay' has played a role in the shaping of the CJ field. Finally, we include a measure of the journalism unemployment rate, included from U.S. Bureau of Labor Statistics Data (2012), as a proxy control for the economic state of the journalistic field.

Analytical strategy

First, we present nonparametric estimates of the survival and hazard distributions of CJ site mortality. The survival distribution gives a description of the survival likelihoods at each time interval in the observation period and allows us to see how sites are surviving across the observation period. The survival distribution is estimated via the Kaplan–Meier product limit method. Let t_j, represent the times at which a site mortality occurs. n_j is the number of sites at risk of mortality just before time t_j and d_j the number of site mortalities at time t_j. The Kaplan–Meier estimate of the survivor function is then

$$\hat{S}(t) = \prod_{j|t_j \leq t} \left(\frac{n_j - d_j}{n_j} \right),$$

which represents the conditional probability of surviving to a particular site duration (Kaplan and Meier 1958).

We also estimate the hazard distribution, which describes the hazard of mortality across each time interval. This allows us to see how the hazard of mortality is changing over time. The hazard distribution is estimated as a weighted kernel density of the estimated hazard changes, $\Delta\hat{H}(t_j) = \Delta\hat{H}(t_j) - \Delta\hat{H}(t_{j-1})$:

$$\hat{h}(t_j) = b^{-1} \sum_{j=1}^{D} K_t \left(\frac{t - t_j}{b} \right) \Delta\hat{H}(t_j).$$

The above equation approximates the hazard from discrete time intervals by calculating the weighted hazard estimate at small, overlapping intervals and summed over the number of mortalities, D, to obtain an estimate that approximates a smoothed distribution (see Muller and Wang 1994).

We then specify an event history model predicting the timing of site mortality. Broadly, event history models describe the timing of units experiencing an event of interest (in this case, site death) as a function of covariates. A model of CJ site mortality must be sensitive both to the duration of time the site is active and changes in the site livelihood. Accordingly, for this project, event history analysis has several advantages over a cross-sectional

logistic regression design. First, it allows us to analyze the time until site death in addition to just the existence of a site death. In a cross-sectional framework, sites that died a year after founding would be treated identically, all else equal, to those that experienced a more delayed mortality. In other words, there may be differences between sites that 'die soon' and those that 'die late.' Secondly, it explicitly allows us to account for changes in explanatory parameters in the form of time-varying covariates, which allow us to estimate the dynamic impact of changes in organization population on site mortality. Third, it provides more accurate estimates of explanatory parameters, as the temporal order of the explanatory and outcome variables is accounted for. Finally, it appropriately treats those sites that did not experience a mortality (i.e., are still active) as censored cases. Because we have data in which the hazard of mortality *increases* over time (see Figure 2), we specify a parametric proportional hazards Weibull regression (Box-Steffensmeier and Jones 2004),

$$h(t) = \exp(X\beta)pt^{p-1}$$

which models the proportional hazards as a power of time, p, allowing the baseline hazard rate to vary as a function of time (this is in juxtaposition to an exponential parametric model, which is a special case of the Weibull model when $p = 1$, or when the hazard rate is *constant* over time), and a set of covariates with regression weights ($X\beta$), which act multiplicatively on the hazard (also known as hazard ratios). The descriptive statistics for all variables included in the model are included in Table 1.

Results

Nonparametric estimation

Figure 1 shows the cumulative proportion of sites who still were considered active (for the definition of site activity, see above) by yearly intervals, along with a 95% confidence interval. The line plots the proportion of sites that survived at the end of the current interval. The change in survival probability is fairly consistent across the course of site duration, indicative of an incrementally increasing risk of mortality. After 5 years of site activity, roughly 87% of sites did not experience a site mortality. After 10 years, approximately 74% of sites remained active. Overall, at the end of the study period, slightly more than 75% of the sites had yet to experience a mortality. Overall, the majority of CJ sites were still active as of the end of the study period, indicating that site mortality is a relatively rare event.

Figure 2 displays the smoothed hazard distribution of CJ site mortality along with 95% confidence intervals. The hazard of mortality increases sharply in durations from 6 to 11 years, then tapers off at higher site durations. This indicates that the risk of site mortality increases to a certain point, then tapers off, with sites having survived past about 10 years of site activity not likely to experience a mortality. As seen in Figure 1, the overall hazard of site mortality is small, as only about 4% of sites died off at the peak of mortality.

Parametric estimation

Table 2 presents two specifications of multivariate Weibull regression models predicting the timing of site mortality. Model 1 includes only the block of site-level characteristics as explanatory variables. Sites that were explicitly for-profit were significantly less likely

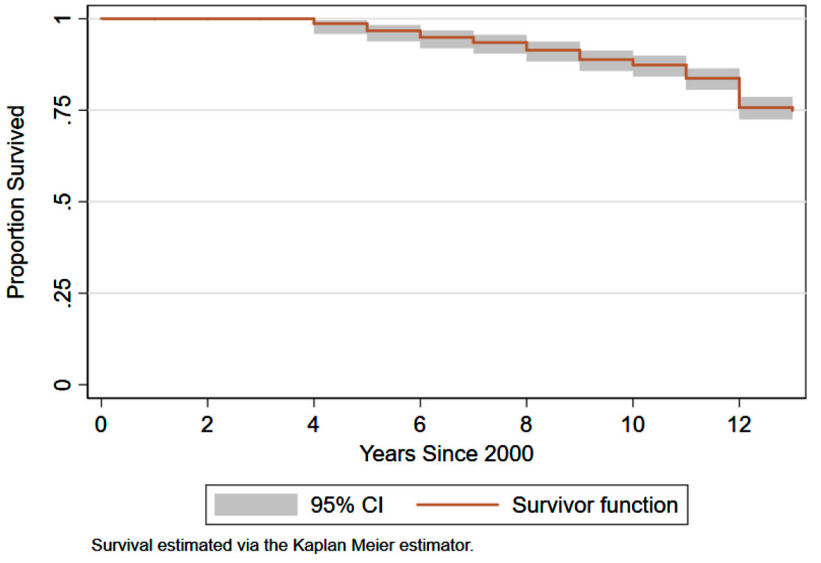

Figure 1. Survival distribution of online CJ.

to experience a mortality, with for-profit sites experiencing a mortality rate approximately 60% less than that of non-profit sites. Additionally, sites that were described as community sites also provided a protective buffer to site death; sites that were community-focused had a hazard about 57% less than that of other non-community sites at a statistically significant level. Sites with editorial staffs, non-staff contributors, and multiple authors are also associated with lower hazards of site mortality, but these effects do not reach conventional levels of statistical significance. Similarly, the political effect did not reach statistical significance, but is associated with a high hazard of site mortality.

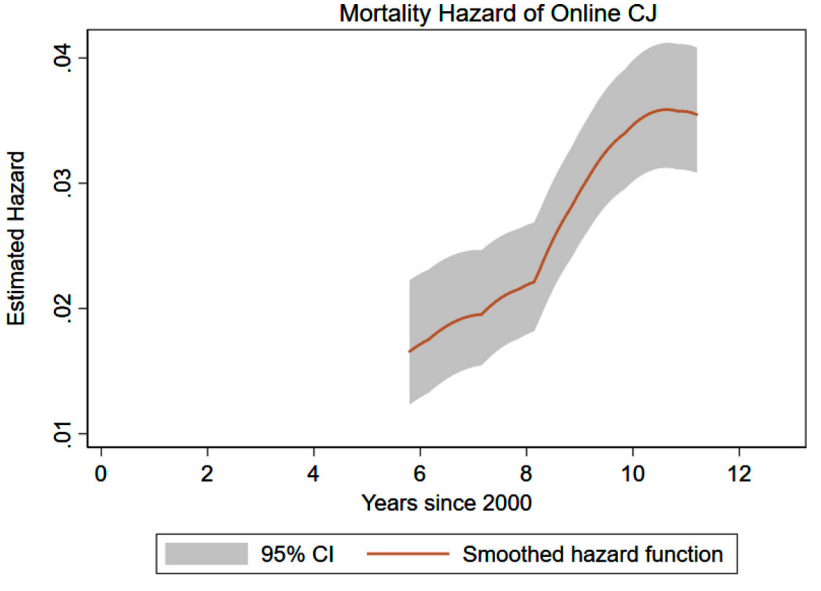

Figure 2. Mortality hazard of online CJ.

Table 2. Weibull event history models of CJ site mortality.

	(1)		(2)	
	Hazard ratio	SE	Hazard ratio	SE
Editorial staff	0.693	(0.245)	0.607	(0.209)
For-profit	0.392**	(0.117)	0.440**	(0.133)
Non-staff contributors	0.737	(0.283)	0.769	(0.298)
Political topic	1.363	(0.323)	1.279	(0.318)
Community focus	0.429**	(0.114)	0.552*	(0.152)
Multiple authors	0.616	(0.191)	0.659	(0.202)
Journalist unemployment			1.389***	(0.121)
Site age			0.231***	(0.0590)
Density at founding			0.996**	(0.00150)
Density at founding^2			1.001**	(0.00000123)
Density of year			0.980***	(0.00275)
Density of year^2			1.000	(0.00000215)
Constant[a]	0.0001	(.0001)	0.0001	(.0001)
Time dep. parameter (p)	3.719***	(0.493)	41.49***	(4.155)
Observations	3272		3272	
−2LR	−149.9		−83.96	
LR χ^2 (6)	65.74***		197.6***	

Notes: Exponentiated coefficients. *$p < .05$, **$p < .01$, ***$p < .001$.
[a]Rounded to the nearest ten-thousandth.

Model 2 adds to the baseline site-level model the effects of time-varying year covariates. Importantly, both for-profit and community focus retain their statistically significant effects, albeit with slight attenuation in effect magnitude, indicating that for-profit and community sites were more likely to survive the rise and decline of CJ net of organizational dynamics and other factors. Our Bureau of Labor Statistics (BLS) measure of journalist unemployment is significantly associated with the rate of CJ site mortality, with a 1% increase in the unemployment rate tied to a roughly 39% increase in mortality risk. This suggests that the economic downturn in the journalistic field may have impacted CJ websites in addition to mainstream news outlets. The most robust predictor of site mortality is the age of the site, in line with our hypotheses about the 'liability of newness'. A one-year increase in site age decreases the hazard of mortality by about 77%, indicating that new sites are especially likely to die off, and that experience and time in the field serve as a strong buffer to site risk. Consistent with *both* theoretical predictions of 'density delay,' increases at low levels of founding density decrease the hazard of site mortality, but increases at higher levels of founding density increase the hazard of site death. This suggests that as sites enter the CJ field they may benefit from the 'trial by fire' competitiveness indicative of new, inexperienced entrants, but that density proves detrimental to site survival at higher levels. We find partial evidence for the effect of density dependence. Indicative of the 'legitimizing' impact of organizational population growth, density of the current year decreases the mortality hazard of sites. However, we do not see evidence for a 'carrying capacity' as our non-linear term of the density of year is statistically non-significant, therefore suggesting a negative linear relationship.

Discussion

Academic and journalistic writing, to date, have often characterized CJ as a democratizing, even radical, voluntaristic alternative to mainstream news journalism and its increasingly neoliberal outfit. However, our empirical look into the factors associated

with site mortality (and inversely, survival) contradicts this narrative. At the site level, we find that journalistic convention, rather than challenges to *doxa* within the field, has its benefits: sites that were for-profit and community-focused were most likely to survive the first round of online CJ site 'busts.' As previously noted, community CJ sites tend toward the journalistically conventional and for-profit may have had greater resources that allowed to weather growing competition from other outlets. These characteristics are also mainstays of professional journalist practice and norms, and it appears that adherence to some structures common in professional journalistic served as a protective buffer to site risk. Existing research has shown that for-profits CJ sites' content more frequently adopts a range of professional routine reporting practices (Lindner et al., 2015).

Other measures of traits that might mark a CJ site as distinct from the dominant paradigm of news production professional journalism appear not to have affected a site's mortality risk. The presence or lack of an editorial staff, multiple authors, and non-staff contributors had no significant effect. If having an editorial staff or only staff contributors is a common practice in CJ today, it is likely due to isomorphic processes (site adopting legitimate practices) rather than attrition (sites dying off because they could not survive without the practices).

Thus, the CJ population that existed in 2013 was one that was more community-oriented and more for-profit than the fledging group of sites in 2000, partially because the sites that met those criteria were more likely to survive. While that may suggest a move toward some forms of professionalization within the field, some of the characteristics typical of 'online journalisms' (e.g., non-staff contributors and lack of moderation) do not appear to have hurt the field. Likewise, being a political site – part of what Wall (2015) calls 'The Resistance' – was neither help nor a harm to a site's risk of mortality.

Contrary to our expectations that professional journalism's loss might be CJ gain, we found that higher levels of journalism employment rates are tied to higher mortality risks for CJ sites. We must exercise caution in interpreting this result, but, as subfields of the same larger journalistic field, it is likely that both professional newsrooms and CJ sites respond to the same broader economic conditions. Declines in online advertising rates would hurt both CJ sites and legacy news outlet alike.

Our findings also show that established patterns in organizational population ecology apply to the CJ site population. CJ sites were extremely liable to newness, with newer sites having much higher risks for mortality than already established sites. We also find some support for density dependence as applied to CJ. As expected, initial growth in density reduced the risk of a mortality as expected. However, subsequent increases in density were not significantly associated with a higher mortality risk. These foundings may indicate that a growing population of CJ sites lent legitimacy to the population. However, competition never reached an excessive level. This finding may be because CJ sites, especially hyperlocal community ones, are rarely in direct competition with each other.

We found partial support for the theory of density delay in relation to CJ sites. Increases in founding density at extremely high levels of density at founding were, indeed, associated with a higher risk of mortality. However, there is a slight benefit to site survivability when founding density increases at low levels of density. Therefore, sites entering at times of

lower founding density can benefit from a 'trial by fire' experience provided by other concurrent foundings. This suggests that the impact of founding density is contingent on the state of the field when a site opens up shop.

It should be noted that there are a number of limitations to the current study. The foremost is causal identification as we have a limited number of predictors for use in covariate adjustment. However, we have taken steps to only make associational claims and do not present anything here as causative. Second, we do not know why the associational effects presented and discussed above have the effects they do. In other words, the mechanisms for how being for-profit translates into a diminished risk for site mortality is beyond the scope of our data. While we may speculate as to the mediating mechanisms that found our associations, further research, particularly in-depth qualitative research, is needed to uncover the potential cogs within each association. Finally, due to the inherent difficulties of coding sites that no longer exist, we had substantial of missing data several measures, lowering our sample size for these analyses.

Conclusion

The popular vision of CJ as eager volunteers mounting a radical challenge to professional journalism and offering a rich new political coverage for democratic societies was always an inaccurate one. Past research has shown that CJ is a more professionalized phenomenon with contributors with professional training in journalism as well as organizational structures and journalistic routines common in professional journalism. Our findings in this study show that some transformation of CJ into a more conventional organization population occurred through attrition as non-profit and non-community-focused CJ sites were more likely to experience a mortality. However, we also find that many of the less conventional traits sometimes found in CJ – not having an editorial staff, having non-staff contributors – posed no special risk. Moreover, political CJ sites were no more likely to experience a mortality. If professionalization occurred along these dimensions within CJ, it was likely through isomorphic processes, not via attrition. This study is also the first to apply organizational population ecology theory to the population of CJ sites. Our findings are generally in line with how most populations grow, contract, and settle. Taken together, our findings suggest that the for-profit and hyperlocal community paradigm have come to dominant in CJ, as other types of CJ sites died off. The potential for CJ to serve as a more equitable and democratic space exists, but CJ sites are also producers of more conventional journalism than many imagine.

Notes

1. In analyses not shown here, we performed Multiple Imputation via Chained Equations to impute missing data on site-level covariates. These results from models run and aggregated across the multiply imputed datasets did not alter our substantive conclusions, and therefore, we present a more parsimonious model using the original data. Results of these models are available upon request from the author.
2. While it is possible that these variables do, in fact, change over time (e.g., the addition of an editorial board), our site-level measures are not fine-grained enough to detect these changes as our observations were made at one point in time.

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No potential conflict of interest was reported by the authors.

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