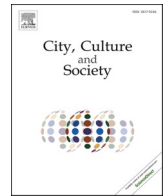




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# Street performers and donations in an online environment in the wake of COVID-19

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## ABSTRACT

The spread of coronavirus (COVID-19) has meant that street performers can no longer perform on the street. This has changed the landscape for the exchange for money between a street performer and their audience. The paper uses a unique data set from the online busking platform 'The Busking Project' (<https://busk.co>) to analyse whether sign up by performers to the platform and donation by individuals to street performers through the platform has changed since the World Health Organization declared COVID-19 to be a pandemic on March 11, 2020. The results show a lift both in street performers signing up to the platform and in individuals' donations to street performers after the announcement. The recovery of cities and the cultural economy from COVID-19 will not be immediate. As we move to a post COVID-19 world our results have implications for performers, for donors and for (local) governments as street performers return to the street.

## 1. Introduction

This paper concerns street performers, or buskers, of all genres around the world and uses data from one particular online platform, The Busking Project (<https://busk.co>), created in 2012 to support the global community of street performers. The spread of COVID-19 has had many impacts. For creatives it has introduced a layer of difficulties not just for street performers but for all performers' capacity to create a livelihood in these challenging times (Betzler et al., 2020; Pacella et al., 2021). We use daily time series data from November 2015, when the busk.co platform commenced the facility for donations to performers from the public (donors) to August 2020 to investigate some of the potential impacts of the first wave of COVID-19 on activity by street performers and their donors on this online platform.

Street performers have performed in public for centuries (Watt, 2019). Research has shown that they contribute positively to the vitality of the streetscape (Simpson, 2011, 2013, 2016; Bennett & Rogers, 2014; Doughty & Lagerqvist, 2016; Watt, 2020), that their interaction with the environment around them contributes to the experience of their audience (Hare, 1991; Ho & Au, 2018; Ho et al., 2020; Hudson, 2006) and that street performers contribute to economic value (Green, 2020; Oakes & Warnaby, 2011). An integral part of a street performance is the exchange of money where the audience donates to the performer (Kushner & Brooks, 2000). Street performers need to draw an audience, engage

them, and obtain donations. This is often through the incorporation of the "hat line" where the performers ask their audience for donations (Harrison-Pepper, 2010). Many street performers now move around locations and can generate a viable career by doing so (Ho & Au, 2018; Kaul, 2019; Watt, 2020) or street performance can extend into the creation of new commercial ventures such as Cirque du Soleil that was formed from street performers in Quebec (Leslie & Rantisi, 2010). The COVID-19 pandemic has had many impacts. However, for street performers a major impact has been their inability to perform to audiences on or to obtain donations from these audiences on the street.

The Busking Project (<https://busk.co>) has developed a platform community that engages with street performers (buskers) to build a profile to connect the performers with their fans online. The platform also facilitates remote donations by individuals (the donors) for the buskers via either payment apps, cards, or PayPal. Prior to COVID-19 there had been an increased use of digital platforms as a method to create income in the creative industries (Regner, 2021; Scherer & Winter 2015; Tossato et al., 2019). This is primarily for two reasons. First, as the digital age emerges consumers are carrying less cash and opting for digital transactions as their preferred option, and second, the technology is now available to facilitate this transaction. COVID-19 has also accelerated the move away from cash and coins, to a safer method of exchange (Caswell et al., 2020; Kakushadze & Liew, 2020; Kaur & Walia, 2021).

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This paper will use data over time from the busk.co online platform to investigate activity on this platform in the immediate wake of COVID-19 (the “first wave”). With the ability of buskers to perform to an outside audience restricted or removed do we see an increase in the number of new sign ups by performers to the platform? Additionally, has donation activity by donors to performers through the platform increased in the wake of COVID-19? The plan of the rest of this paper is as follows. In the next section we provide some background to our paper. We then present the data and methods that we use. This is followed by the results of our analysis. Finally, we discuss our findings, their implications and present some conclusions.

## 2. Background

Long gone are the days when artists relied solely on their talent to create a sustainable livelihood. The creation of livelihoods for contemporary artists is thought to be in line with a bohemian lifestyle (Eikhof & Haunschild, 2006; Ellmeier, 2003). Artists and creatives have increasingly become entrepreneurial in their practice more like small enterprises (Menger, 1999). Moreover, the spread of coronavirus has created additional problems as street performers lost audiences due to lockdowns and crowd restrictions forced performers to be more entrepreneurial in their practices. Cultural consumption and production are increasingly focusing on platforms for digital distribution and virtual audience engagement (Lazzaro & Noonan, 2021; Peukert, 2019). These platforms have expanded new business models that have increased the capacity for artists to create greater access to value creation, and they have also changed production and circulation in that cultural commodities are now contingent on these platforms (Hracs & Webster, 2021; Nieborg & Poell, 2018).

The rapid rise of crowdfunding and platforms in the cultural and creative industries that has fuelled the rise of a platform economy and the growth in gig workers have both reduced the dependency on a single employer and increased the ability for workers to be mobile (Kenney & Zysman, 2016; Lazzaro & Noonan, 2021). Additionally, online crowdfunding platforms such as Patreon and Kickstarter have increased the ways and means for artists to earn income (Lazzaro & Noonan, 2021; Regner, 2021). Platforms can also help understand clustering effects among creatives, where they migrate to and understand why certain creatives ‘flock’ to particular regions (Noonan et al., 2021) and these platforms are also playing a role in creating cultural and social life (Duffy et al., 2019).

The seminal work by (Menger, 1999) in cultural entrepreneurship highlighted the need for artists to be resourceful in mitigating risk through multiple job holdings, occupational versatility, diversification of jobs, and support from multiple sources be it family or social security. Though not all artists, particularly musicians, are comfortable in balancing these entrepreneurial expectations (Coulson, 2012; Haynes & Marshall, 2018a). Current practice has required artists to not only manage their talent but also to galvanise an audience to support their art, and increasingly this has been leveraging a relationship through social media with both good and bad outcomes (Everts & Haynes, 2021; Haynes & Marshall, 2018b; Turri et al., 2013). YouTube, Instagram, TikTok and pay-as-you-please platforms have also evolved the musician’s capacity to capture an audience (Peukert, 2019).

The term *artrepreneur* was created to describe the combination of the artist and the entrepreneur (Vecco, 2019, 2020). The concept assumes part of the role is in artistry and the other self-marketing and business creation often through digital engagement (Hoffmann et al., 2021; Vecco, 2020). An example of this emerged as a substitute to the record deal which is no longer a powerful anchoring point for a musician (Schwetter, 2019). Self-marketing and self-management are demanded skills for careers in the creative industries (Bridgstock, 2005). Platforms have created in some instances more personalised relationships that have allowed the artist to create a reputation through self-marketing (Turri et al., 2013). The work by (Gandini, 2016) has highlighted that

self-branding for an artist is a means to create a digital brand that created a ‘shared notion of reputation as value’. This self-branding is described as an investment in social relationships in the form of digital engagement that then translates into the cultural concept of value. Indeed (Thomson, 2006) describes human brands as having additional features that are formed through co-creation with individuals and community members.

The artist as a brand is associated with a signal of the art quality in the visual art markets (Angelini & Castellani, 2021). Equally, this can be applied in performance markets. The process of co-creation between the artist and the patrons creates a level of brand value, it is the human brand through their artistic identity, and the scene, where they build their reputation (Gandini, 2016). It is the choices of the stylistic choices and how they share their poetics that determine what the artist creates. The sharing of this creation on the internet and through social media is now the norm (Haynes & Marshall, 2018b). However (Meiseberg, 2014) finds self-marketing for musicians a difficult task to detangle from ability, and exposure can elevate an average artist. This self-marketing is now the model for anyone looking to expand their network, build a business or find a new gig (Scolere et al., 2018) not just creatives and entrepreneurs. Even for a street performer whose craft is created on the street, the relationship with fans can also be further enhanced using social media platforms that transforms relationships into value.

Artist’s such as Tone’s & I, Ed Sheeran<sup>1</sup>, and Tash Sultana<sup>2</sup> have harnessed the power of social media and streaming services such as Spotify to catapult their careers away from the streets into the global mainstream. Tones & I is a particularly successful street performer who enjoyed a similarly spectacular rise to success in 2019, becoming a global sensation becoming the highest streamed song by a female artist in 2020,<sup>3</sup> with other accolades that followed. Another famous performer: comedian Eddie Izzard began his career on a unicycle in Covent Garden in London. However, this is very much a road less travelled for street performers, many are not likely to achieve this level of fame or recognition. For most street performers there are a number of challenges in terms of their performances, and cultural and economic difficulties, with some regarded as cases for charity, not performance (Lemay & Bates, 2013). COVID-19 has introduced an additional layer of difficulties not only to street performers but to all performers’ capacity to create a livelihood in these challenging times (Betzler et al., 2020; Pacella et al., 2021).

In recent times, street performers have taken advantage of social media, especially Facebook and Instagram, and TikTok to distribute their acts and enhance their reputation. Agencies such as Busk, The Busking Project, The Street Music Map, and Change for Good are playing a pivotal role in supporting, creating, and maintaining street performer’s online presence and widening their reach to broader audiences beyond the street (Watt, 2020). The proliferation of busker’s festivals since the 1890s has added a further dimension to the ways tourism, festival management, and city renewal have commodified the centuries-old practice of busking not only for monetary gain but also for urban renewal (Simpson, 2011). The COVID-19 pandemic has also accelerated artist’s move toward virtual audience engagement through live performances and streaming on platforms such as Twitch and Instagram and paid-for performance gigs. For creative industries, using digital platforms as a method to create income is becoming the new normal (Elkins & Fry, 2021; Regner, 2021; Tossato et al., 2019). While Patreon and Kickstarter have also been used to support artists (Regner, 2021), other platforms such as the one in this study busk.co are more creative industry-specific and seek to provide the link to value creation and cultural entrepreneurship through connecting the artists and their fans.

<sup>1</sup> Busking in 2008 in London as a 16-year-old.

<sup>2</sup> Busking from 2009 to 2015 in Bourke St Mall Melbourne.

<sup>3</sup> See Spotify newsroom <https://newsroom.spotify.com/2020-12-01/trends-that-shaped-streaming-in-2020/>.

Cultural entrepreneurship, the move towards digital platforms and the emergence of the artist as a brand are likely to have been impacted – or accelerated – by the spread of COVID-19. This paper uses data from one particular online platform, The Busking Project (<https://busk.co>), to investigate some of the potential impacts of COVID-19 on activity on their online platform. We pose two research questions. With the ability of buskers to perform to an outside audience restricted or removed do we see an increase in the number of new sign ups by performers to the platform? Additionally, has donation activity by donors to performers through the platform increased in the wake of COVID-19 on activity?

The Busking Project is a not-for-profit organisation created in 2012 and is one of the most effective lobby groups within the busking community. The project aims to “promote, celebrate, and defend buskers with tech, advocacy, research and opportunities” (Watt, 2020). As of September 2021, the website boasts over 9300 buskers, 4900 fans in 127 countries.<sup>4</sup> Street performers can sign up directly, or with Facebook, to create a profile adding images and videos, as well as including links to other social networks on their page. The website provides users with access to all the buskers’ profiles and a map to find performers near them in their city. The site is sorted by an algorithm that profiles artists with the greatest number of fans first. This brings performers with large fan bases (number of “likes” on their profile) to the attention of visitors to the site first. This may, in part, underpin the finding in other research with individual, not time series, data from this platform (Elkins & Fry, 2021) that the number of fans plays a role in both determining the likelihood of a performer receiving a donation and, given that one is received, on the value of the donation.

There are several ways and means for buskers to service digital payments, such as “DipJar” (<https://www.dipjar.com/>) which provides tips that are fixed and have a set value before the performance and payment methods through devices such as “Square” a credit card reader and “VENMO” which is a social payment application. Other sites such as The Hat (<https://thehatapp.com/home/>) allow artists to find new venues and open mics to perform and to engage with audiences through “pay-what-you-want” gigs and open mics. Thus, whilst the busk.co platform is one of many methods that street performers can engage in cashless donations, what is unique to the site is the linking of social media, hiring for gigs, an ability to sell music and cashless payments (donations) in a single platform that in essence provides a framework for a gig economy.

In 2015 the Busking Project launched the facility for cashless/mobile payments for buskers to be paid through Android, Apple Pay, PayPal, debit/credit cards, NCP, and Stripe into a performer’s bank account. The site itself takes a fee ranging from 2% to 8% which enables payment through Stripe and PayPal, but this is not commission by the Busking Project rather recovery of the fees charged by services such as PayPal. As the site is international the fee structure changes according to the localised payment fees on Stripe and PayPal, which is why the percentage taken varies from 2% to 8% (see <https://busk.co> for more details on payment structure).

### 3. Data and methodology

Our data comes from The Busking Project (<https://busk.co>) and concerns the activity of and donations to 3753 performers on this online platform over the period November 26, 2015 to August 27, 2020. These performers are defined by The Busking Project as “active” (creating and/or updating their profile, obtaining likes or fans, or receiving donations) on the busk.co platform. The period covered by our data starts from when donations through the platform commenced and 465 of the performers in our data set had already signed up to the platform prior to that date. Unfortunately, this yields a relatively small number of days post the onset of COVID-19 and thus our analysis only concerns the

potential immediate impacts on this platform of the first wave of COVID-19. The site provides the ability for performers to set up online profiles and for donations by the public to the performers. We will look specifically at movements over time in new performers joining the platform from November 26, 2015 and at donations – not sales of albums or employment (gig) offers – over our period by the public to performers active on the platform. This is in contrast to the analysis in (Elkins & Fry, 2021) that is concerned with an in depth analysis at an individual performer level. The platform is global and thus donations may be made in any currency. All donations have been converted into US dollars using the appropriate exchange rate on the date of the donation. To remove any movements due to overall inflation these are further converted into real values using the consumer price index for the USA with 2019 = 100.

Our focus in this paper is on potential changes over time on platform outcomes (new performer sign up to the platform, the number and value of donations to performers by the public) and how those may have responded to COVID-19. Figs. 1 and 2 show this activity at the weekly level on the busk.co platform over the period (November 26, 2015 to August 27, 2020).

Both total donation activity (number and value) through the platform grew over our sample period with a marked shift occurring in March 2020. Whilst there is a steady growth in new performers joining the platform over the whole period there does not appear to be a clear change from March 2020.

A key issue for our research is dating the onset of COVID-19. From the start of 2020 COVID-19 spread from China across the globe. By early March serious stock shortages for consumer staples were appearing and governments began to impose restrictions on movements. On March 11 the World Health Organisation had declared COVID-19 to be a global pandemic. Whilst some countries intervened earlier than this announcement, policy interventions mostly occurred in the wake of this announcement (Keane & Neal, 2021). Since the busk.co platform is global and as we do not have sufficient data to investigate differences over geographic regions over time, we will take March 11, 2020, as the date for the recognition (onset) of COVID-19 as a global issue.

For donations received through the platform as we know the date of the donation, we can classify these individual donations into two groups relating to whether the donation is received before or after the announcement by the World Health Organisation (WHO) that COVID-19 was a pandemic on March 11, 2020. Over the period for our subsequent analysis we will use data at the daily level yielding 1737 daily observations. For each day we have the number of new sign ups to the platform and the total number of donations made to performers with profiles on the platform. For days with donations, we know the total value of those donations and the average value of donations on the day. Table 1 contains some descriptive statistics relating to the daily data. We partition the sample into two parts. The 1567 days prior to the announcement by the World Health Organisation that COVID-19 was a pandemic on March 11, 2020 and the period after that announcement (170 days). The table also presents the statistics for the full sample.

There are clear differences pre and post the announcement with the range (maximum – minimum), mean and standard deviation of all three of our donation variables (number of daily donations, total and average value of daily donations) increasing after the announcement. For example, Such a pattern is not apparent for the number of performers joining the platform.

The descriptive statistics of the daily data suggest that the measures of platform activity may have increased in the wake of the World Health Organisation pandemic announcement. To further understand the impact of the pandemic announcement we adopt a regression discontinuity framework (Imbens & Lemieux, 2008; Lee & Lemieux, 2010; Stevens, 2016). The World Health Organisation pandemic announcement fits this framework since the announcement is exogenous to the online platform and its participants but applies to all participants (performers and donors) of the platform. Thus, the pandemic announcement is equivalent to a “sharp” regression discontinuity design. Regression

<sup>4</sup> <https://busk.co>/accessed on 28 September 2021.

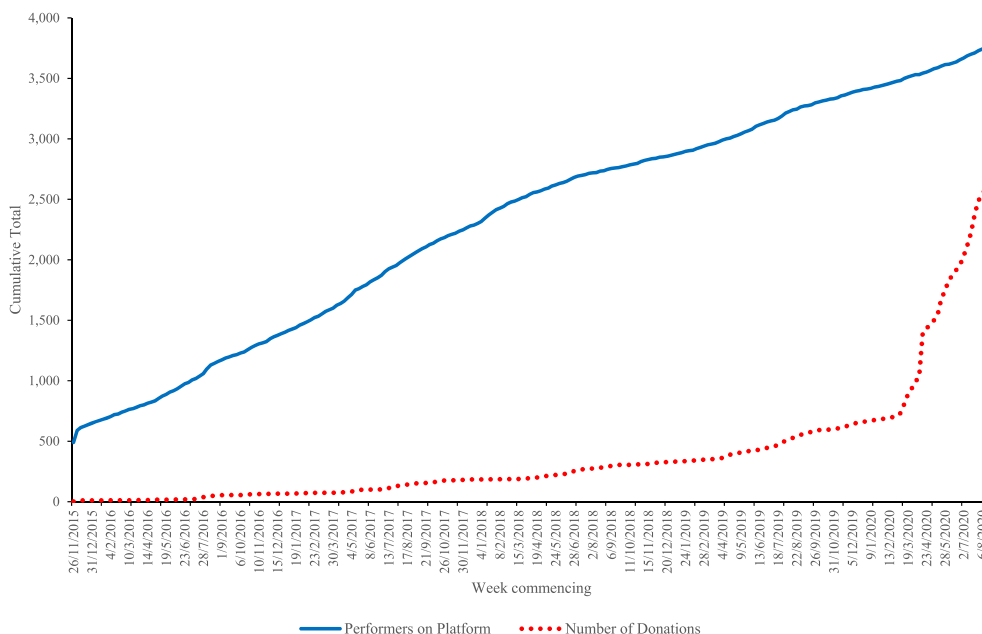


Fig. 1. Cumulative numbers of performers on and donations through busk.co.

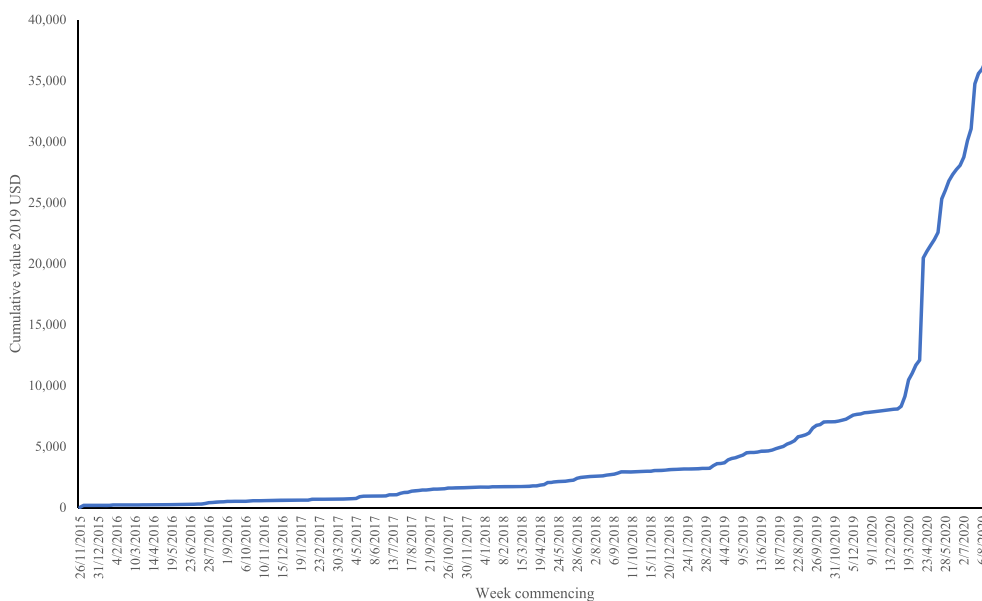


Fig. 2. Cumulative total value (2019, USD) of donations through busk.co.

discontinuity methods use a running, or assignment, variable which allows the researcher to determine whether an observation is in the group of interest or not. When this running variable is time, as it is for the pandemic announcement (the date of the announcement places an observation into one of two groups – pre or post the announcement), such methods are known as regression discontinuity in time (Hausman & Rapson, 2018).

We take two approaches to model the impact of the World Health Organisation pandemic announcement. First, we use a regression approach that regresses each outcome variable on a constant, a time trend, day of the week and month of the year fixed effects as control variables. The regression is estimated on the sample of daily observations prior to the announcement. We then use that regression to predict the outcome variable within the estimation sample (the fitted value) and for the post announcement data (predicted values). A second regression is then conducted using the difference between the observed and the

predicted values of the outcome variable over the full sample of days both pre and post the announcement. This effectively removes underlying monthly, daily and trend effects from the outcome variables. The second step regression includes just a constant and a step function that takes the value of zero until 11 March (the pandemic announcement date) and one thereafter. The coefficient on that step function measures the impact of the pandemic announcement. In our case we have a very long pre-announcement period (1567 days). It is clear from Figs. 1 and 2 above that, especially for donation activity, the very early period may be different to the later pre-announcement period. This might impact upon our first step estimation and prediction. Thus, to investigate the sensitivity of our results to the length of the pre-announcement period we will also estimate the impact of the announcement using a 340-day sample (170 days before and after the announcement). Our second approach is a robust estimation procedure, implemented with the `rdrubust` command in Stata, (Calonic et al., 2014, 2017). This is a semi-parametric

**Table 1**  
Daily data – descriptive statistics.

	Mean	s.d.	Minimum	Maximum
<b>Pre-WHO announcement - 1567 days</b>				
Number of new sign ups	1.9221	2.0004	0	36
Number of donations	0.2444	0.9898	0	14
Total value of donations	4.8450	16.15	0	218.70
Average value of donations	2.91	9.68	0	170.50
<b>Post WHO announcement - 170 days</b>				
Number of new sign ups	1.6325	1.3232	0	5
Number of donations	11.1412	21.4071	0	245
Total value of donations	166.25	532.88	0	6273.39
Average value of donations	11.40	15.34	0	181.81
<b>Overall - 1737 days</b>				
Number of new sign ups	1.8929	1.9463	0	36
Number of donations	1.4709	7.4600	0	245
Total value of donations	21.64	175.73	0	6273.39
Average value of donations	3.74	10.67	0	181.81

approach that relies on flexible local polynomial regression estimation procedures either side of the discontinuity to estimate the impact of the pandemic announcement. We use this procedure as an alternative to the regression analysis for both the full and the shorter sample to assess if the estimated impacts may be sensitive to the choice of estimation technique.

We also conduct an ANOVA on the data at the performer level to determine the impact of the World Health Organisation pandemic announcement. This enables us to further understand if performer level factors may influence how platform activity has changed. For each donation we know the date of the donation and for each performer we know when they signed up to the platform. Thus, we can classify our data by donation date and sign-up date, both split into pre and post the World Health Organisation announcement. For performers who join before the announcement they may receive donations before and/or after the announcement date. However, for those who join after the announcement they cannot receive donations before the announcement. This yields three groups – donations only before the announcement, donations only after the announcement and donations both before and after the announcement. We use analysis of variance (ANOVA) techniques to test whether, on average, donation activity (value or number) is the same across these groups. Table 2 contains the sample sizes for the groups and overall, for the performers.

Of the 263 performers who receive donations 27 signed up before the announcement and receive a total of 535 donations across both before and after the announcement. Such small sample sizes preclude a more detailed study of donation behaviour at the performer level pre and post the World Health Organisation pandemic announcement.

**4. Results**

We begin by presenting the results of our regression discontinuity analysis. Table 3 contains the estimated impact of the announcement step variable in the regression on the four outcome variables (new sign-ups, number of donations, total donation amount and average donation amount) using both the regression and the robust approaches. Results are presented for both the full and a smaller sample.

For the full sample we see that all estimated impacts are positive and statistically significant at the 1% or 5% level with robust estimation

**Table 2**  
Sample sizes for analysis of variance – Pre and Post WHO announcement.

Performers	Joined Pre-WHO	Joined Post-WHO	Total
Received no donations	3278	212	3490
Donations only Pre-WHO	140	–	140
Donations only Post-WHO	32	64	96
Donations Pre and Post WHO	27	–	27
Total with Donations	199	64	263

**Table 3**  
Regression discontinuity in time results for the COVID-19 pandemic announcement.

	Impact	s.e.		95% Confidence Interval	
<b>Number of new sign ups</b>					
<i>Full sample</i>					
Regression	0.364	0.112	***	0.146	0.584
Robust	0.197	0.318		–0.427	0.822
<i>340-day sample</i>					
Regression	1.077	0.136	***	0.810	1.343
Robust	0.056	0.406		–0.740	0.852
<b>Number of donations</b>					
<i>Full sample</i>					
Regression	10.106	1.636	***	6.897	13.315
Robust	8.930	2.253	***	4.514	13.345
<i>340-day sample</i>					
Regression	9.287	1.336	***	6.609	13.045
Robust	5.549	2.400	**	0.843	10.254
<b>Total value of donations</b>					
<i>Full sample</i>					
Regression	153.601	40.771	***	73.635	233.567
Robust	120.930	41.55	***	39.497	202.369
<i>340-day sample</i>					
Regression	195.751	40.881	***	115.337	276.164
Robust	41.985	23.053	*	–3.197	87.168
<b>Average value of donations</b>					
<i>Full sample</i>					
Regression	4.014	1.192	***	1.676	6.352
Robust	3.562	1.652	**	0.325	6.800
<i>340-day sample</i>					
Regression	27.351	1.810	***	23.791	30.912
Robust	–1.534	2.195		–5.837	2.766

Confidence intervals and significance levels based on robust standard errors (s.e.) are presented.

\*\*\*, \*\*, and \* denote significance at 1%, 5% and 10% respectively.

yielding lower estimated impacts than the regression approach. The exception being number of new sign ups where the impact in robust estimation is not significant. Since the robust estimation results and those from our regression over the full sample are similar, we can be reasonably certain that platform activity did change in the wake of the World Health Organisation pandemic announcement.

We have also estimated the impacts using both techniques on a smaller sample (340 days; 170 either side of the announcement) to see if our findings may be sensitive to sample size. The results of these estimations are also presented in Table 3. The robust technique on the shorter sample only finds significant impacts for number of donations (5% level) and total value of donations (10% level). It is not surprising that this robust technique is more sensitive to the smaller sample since it requires the estimation of local polynomial regression estimation procedures either side of the announcement. The regression technique for the number and total value of donations yields similar, statistically significant, impacts to those from the full sample. For the number of new sign ups and the average donation value the shorter sample regression analysis yields larger impacts of the announcement. This may be because the underlying month, day and trend that are estimated from the sample prior to the announcement are changing over the pre-announcement period. Fig. 1 above indicates that growth in new sign ups was potentially higher in the earlier part of the pre-announcement period and, thus, reducing the pre-announcement sample yields different impacts.

Overall, this analysis shows post announcement the daily number of new sign ups to this platform by performers are higher. COVID-19 led to performers of all types and in all locations being less able to perform in public – “on the street” – and receive donations. Using the estimated impact from the regression approach on the shorter sample, 1.077 performers per day sign up to the platform over and above what would have been predicted from the pre-announcement period. In total for the 170 days post-announcement the impact is an extra 183 performers. Over the post-announcement period 276 performers joined the platform and so the majority of those can be attributed to the impact of the

announcement (discontinuity). Our regression discontinuity results also show that the number and total value of daily donations to performers by the public exhibit large increases. Donors are giving more donations to performers and of a greater total value after the World Health Organisation pandemic announcement. Interestingly, not only do total donations increase but also so does the average daily donation value.

Whilst we identify more performers joining the Busking Project our data also allows us to describe the characteristics of the online profiles of those joining the online platform before and after the announcement. For each performer we have information on what is the major genre of their act (Circus, Theatre, Musician or ‘Other genre’), when and where they signed up to the platform (Rest of Europe, United Kingdom, USA and Canada, or ‘Rest of World’) and details concerning their online profile on the platform. Profile characteristics include biography length (in characters), media (images and/or videos) present on the profile, the number of URLs listed and the number of fans that they have on the platform. The data on our performers, their online profile, and the number donations to them during the period is summarised in Table 4.

The most marked difference between the two sets of performers is that those joining after the announcement do receive more donations. It does also seem that those who joined after had slighter longer biographies. Otherwise, there are very few differences between performers who signed up to the platform before and after the announcement in terms of their online profile. It does, however, appear that proportionately more musicians and more performers from the United Kingdom joined after the announcement. Our data corresponds

**Table 4**  
Characteristics of Performers Pre and Post WHO announcement.

	Joined online platform		Total
	Pre-WHO	Post-WHO	
<b>Number of Performers</b>	3477	276	3753
<b>Categorical Variables - % of Total Donations</b>			
0	94.277	76.812	92.992
1 to 10	4.918	15.580	5.702
11 to 20	0.489	3.261	0.693
21 to 30	0.086	1.812	0.213
31+	0.230	2.536	0.400
Total % non-zero	5.723	23.188	7.008
<b>Genre</b>			
All other genres	10.526	3.261	9.992
Circus	9.865	7.246	9.672
Theatre	10.325	5.797	9.992
Musician	69.284	83.696	70.344
<b>Location</b>			
Rest of World	15.674	15.580	15.667
Rest of Europe	23.037	17.754	22.649
United Kingdom	19.701	28.623	20.357
USA and Canada	41.588	38.043	41.327
<b>Images on Profile</b>			
No	63.445	64.855	63.549
Yes	36.555	35.145	36.451
<b>Videos on Profile</b>			
No	66.695	63.043	66.427
Yes	33.305	36.957	33.573
<b>Any Media on Profile</b>			
No	51.625	52.536	51.692
Yes	48.375	47.464	48.308
<b>URLs on Profile</b>			
No	42.594	43.841	42.686
Yes	57.406	56.159	57.314
<b>Albums on Profile</b>			
No	97.642	97.826	97.655
Yes	2.358	2.174	2.345
<b>Gigs requested of them</b>			
No	94.334	96.014	94.458
Yes	5.666	3.986	5.542
<b>Continuous Variables - Means</b>			<b>t-test value</b>
Number of fans	3.157	3.174	0.052
Biography length	258.807	295.667	1.930

to the first wave of COVID-19 and the United Kingdom was particularly heavily impacted. Thus, this location effect is perhaps not surprising. Musicians form the majority of performers on the online platform and, potentially more generally amongst street performers, and thus an increase of this type of performer may be expected.

The descriptive analysis presented in Table 4 shows very few relevant differences between those performers joining before or after the World Health Organisation pandemic announcement. This finding potentially reflects the perceived benefit by performers of them being on the platform when they can no longer perform and receive donations on the street. The descriptive analysis does, however, indicate an increase in donation activity. To further investigate potential differences in donations given by the public to performers through the online platform we use analysis of variance (ANOVA) techniques for the data on performers and the donations that they receive. In our data 263 performers received a total of 2555 donations. Donations may be made through the online platform before or after the announcement and may be given to performers who themselves joined the platform before or after the announcement. The ANOVA technique is used to test whether, on average, donation activity is the same across the three potential groups of performers receiving donations (donations only pre-announcement, donations only post-announcement and donations in both periods). Table 5 presents the results from this test for total donation value, average donation value and number of donations for performers.

The tests reject the hypothesis that total donation activity (number and value) is the same. However average donations do not significantly differ across the three groups of performers. Compared to performers only receiving donations before the announcement, donation activity is higher for those performers who receive donations both before and after the announcement and for those performers who only received donations after the announcement. For example, the 32 performers only receiving donations prior to the announcement received on average 2.9 donations, the 64 performers receiving donations only after the announcement received an average of 16.8 donations and the 27 performers receiving donations in both periods an average of 19.8 donations.

These ANOVA results broadly support the regression discontinuity results on donation activity presented earlier. It is clear the pandemic announcement did lead to changes in donations by the public through this online platform. However, it appears that the ANOVA test results are primarily driven by donations occurring only after the pandemic announcement. This finding is also consistent with that in (Elkins & Fry, 2021) who find that performers joining the busk.co platform after the pandemic announcement had a higher likelihood of receiving a donation (an odds ratio of 1.56).

**Table 5**  
Analysis of Variance results for performer donations.

	Average	95% Confidence Interval	
<b>Number of Donations</b>			
Only Pre-WHO announcement	2.90	2.23	3.57
Only Post WHO announcement	16.81	7.08	26.54
Both Pre and Post announcement	19.81	10.64	28.99
F-test value and significance	10.45 ***		
<b>Total Value of Donations</b>			
Only Pre-WHO announcement	29.32	18.83	39.80
Only Post WHO announcement	260.3	42.18	478.42
Both Pre and Post announcement	250.43	142.1	358.78
F-test value and significance	10.13 ***		
<b>Average Value of Donations</b>			
Only Pre-WHO announcement	10.37	7.38	13.35
Only Post WHO announcement	12.73	9.61	15.85
Both Pre and Post announcement	23.61	3.72	43.48
F-test value and significance	1.29		

Confidence intervals and tests based on robust standard errors are presented. \*\*\* \*\*, and \* denote significance at 1%, 5% and 10% respectively.

## 5. Discussion and conclusions

COVID-19 has had many dramatic impacts, none more so than on street performers with their ability to perform to an outside audience and obtaining donations from that audience restricted or removed. Our results suggest that a further impact of the first wave of COVID-19 is increased activity by street performers and their donors on the online platform (<https://busk.co>) considered in this research. Whether this was either accelerating a move towards cultural entrepreneurship and the emergence of the artpreneur that was happening before the onset of COVID-19 or is particular to this platform is not clear. Previous research using individual level, not time series data, from this platform (Elkins & Fry, 2021) found that artists who received donation(s) were more likely to have joined after the World Health Organisation pandemic announcement. Interestingly, that research also found that the offering of additional services such as albums for sale or availability for gigs did not influence either the likelihood of donation nor the amount of any donations made. This suggests that it is the pandemic announcement that has had an impact on the growth in performers and donation activity by the public on this platform.

The results presented here from both regression discontinuity and analysis of variance techniques show clear changes over time in activity on the online platform. We see an increase in the number of new sign ups by performers to the busk.co platform after the World Health Organisation pandemic announcement on March 11, 2020. That is there is an increased uptake of an online platform that allows street performers to build a profile to connect them to an audience and their fans online. We do not know what else these performers may be doing in response to COVID-19. They may be performing more in private, on other platforms, such as Twitch or The Hat, or engaging with the public more generally on social media. However, by joining the busk.co platform these performers not only can engage with their audience but also give their audience and fans the opportunity to donate to them through the platform. We find evidence of increased donation activity (number of daily donations, their total value, and the average value of daily donations) by the public through the online platform to performers on the platform in the wake of the announcement. These changes may reflect several things such as an increased sense of social cohesion during a crisis, a sense of boredom during lockdown or a desire to donate part of any income subsidies given during this period. They are also potentially consistent with an observation that COVID-19 has accelerated a move away from cash and coins to a safer method of exchange.

Street performers increasingly joined this online platform in the wake of the World Health Organisation pandemic announcement. However, performers that joined post the announcement are not substantially different to those who joined before. Although, performers from the United Kingdom, an area hit hardest in the “first wave” of COVID-19, may have disproportionately joined. Given that one policy response to COVID-19 by governments around the world was to impose lockdowns (Keane & Neal, 2021) the inability of performers to perform on the streets may well explain the increased uptake of an online platform that allows performers to build a profile to connect them to an audience and their fans online. Additionally, performers on the platform also give their audience and fans the opportunity to donate to them through the platform. Given that policy responses to support those whose income or business typically did not extend to the creative industries (Betzler et al., 2020; Comunian & England, 2020) this ability to obtain online donations may be a motivating factor in the increased uptake. We also find that donation activity by donors also increased. This increase may be associated with the size (number of performers) of the platform increasing or with increased levels of entrepreneurial activity by performers on the platform. Alternatively, it might also indicate a desire by donors to support performers who are doing it tough without the ability to perform “on the street” for donations.

The recovery from lockdowns will not be immediate (Pratt, 2020) and will require changes to how we think about policy and science

(Hardin, 2021; Kob, 2020). We will see many adjustments to how we live our lives and plan our spaces (Bolleter et al., 2021). As we move to a post COVID-19 world our results may have implications for performers, for donors and for (local) governments as street performers return to the street. For performers online platforms, such as busk.co, provide an additional opportunity to build connections, to interact with their audience and to receive donations. Thus, despite issues identified with their use (Dalla Chiesa & Dekker, 2021), performers can supplement their live on the street performance with a presence on such online platforms. Donors have shown a willingness to donate online and, in doing so, avoid cash transactions (throwing money into a “physical hat”).

We find that the pandemic announcement in 2020 did indeed show a sharp move towards digital payments on this platform, which has implications for how to potentially reinvigorate urban spaces left silent from the pandemic. As performers return to the streets it is possible that potential donors and performers will require an additional “digital hat” for donations. This would capitalise on the apparent move away from cash payments during the pandemic (Caswell et al., 2020; Kakushadze & Liew, 2020; Kaur & Walia, 2021) and provide both “Easy” and “Timely” ways to enhance donation behaviour (Halpern, 2016). Moreover, as street performance is often regulated and access to public spaces controlled by local government (McNamara & Quilter, 2016; Quilter & McNamara, 2015; Simpson, 2011), changes to such permits to allow or to require the “digital hat” may need to be considered. This would allow for cashless transactions that may suit both performers and donors.

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## CRedit authorship contribution statement

**Meg Elkins:** Conceptualization, Investigation, Writing – original draft, Project administration. **Tim R.L. Fry:** Conceptualization, Investigation, Data curation, Methodology, Formal analysis, Writing – original draft, Project administration.

## Declaration of competing interest

None.

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