

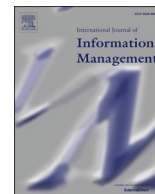


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# Digital platforms and transformational entrepreneurship during the COVID-19 crisis

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## ABSTRACT

There has been an increased usage and popularity of digital platforms during the COVID-19 crisis. This has resulted in many new types of digital platforms emerging that are tied to specific localities and based on emergent needs. This article presents the results of a study on the ClickforVic digital platform that was started during the first 2020 lockdown in Melbourne, Australia as a way for country farmers to connect with urban consumers. The study is premised on transformational entrepreneurship theory that enables a focus on the societal changes that have resulted from the COVID-19 pandemic. A semi-structured in-depth interview approach was utilised to understand how farm entrepreneurs perceived the digital platform and how this contributed to transformational entrepreneurship outcomes. The study is amongst the first to incorporate a digital platform, farm entrepreneurship, transformational entrepreneurship and COVID-19 perspective. The findings suggest that farm entrepreneurs are driven by financial, social and community goals during a crisis that influences their usage of digital platforms. As a consequence, the findings contribute to managerial practice and policy debate by highlighting the way digital platforms can be used in times of crisis to produce transformational entrepreneurship outcomes.

## 1. Introduction

The use of digital technologies has exponentially increased during the COVID-19 pandemic due to working from home and social distancing requirements. This has meant entrepreneurs have increased their digital competencies in order to compete in the global marketplace. [Hsieh and Wu \(2019\)](#) suggest that in the digital era increasing amounts of entrepreneurial activity is utilising platform strategies for competitive reasons. Well known digital platforms include Airbnb, Amazon, Facebook, Google and Uber ([Gawer, 2021](#)). Whilst these global digital platforms are commonly used in society, there are also other types of digital platforms that are started by government agencies for societal reasons ([Nooren, van Gorp, van Eijk, & Fathaigh, 2018](#)). These types of digital platforms create a new audience focused on obtaining reliable and real time information ([Nelson & Lei, 2018](#)).

Digital platforms are game changes as they make it easier to access products and services that subsequently result in transformational entrepreneurship. [Gawer \(2021\)](#) states “digital platform firms use digital technologies and connectivity to exploit and control digitized resources that reside beyond the scope of the firm, creating value by facilitating connections across multiple sides, subject to cross-side

network effects”. The main benefit of digital platforms is in their ability to reduce transaction costs and make it easier to conduct transactions ([Ben Arfi & Hikkerova, 2021](#)). This means there can also be a reliance on customer forms of entrepreneurship on digital platforms that provide more user-focused innovation ([Park, Kim, Jeong, & Minshall, 2021](#)). Digital platforms are a form of transformational entrepreneurship as they produce radical change in society.

Transformational entrepreneurship has developed due to a need by society to address global issues such as climate change and inequality in society. [Jones and Maas \(2019\)](#) suggest that transformational entrepreneurship is a useful way to bridge societal goals with entrepreneurial activities. This means transformational entrepreneurship is a distinct type of entrepreneurship due to its focus on social problems and often occurs through learning or education programs. [Dobson, Maas, Jones, and Lockyer \(2018\)](#) utilised a transformational incubation programme to understand how entrepreneurs gain knowledge through experiential learning. Furthermore, [Le Grange \(2020\)](#) suggests that transformational entrepreneurship provides a way to incorporate personal goals into entrepreneurial activities that result in social change.

This article focuses on the use of a new digital platform called ‘ClickforVic’ ([www.visitvictoria.com/clickforvic](http://www.visitvictoria.com/clickforvic), last visited 10th April

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2022) that was developed during the 2020 lockdown COVID-19 crisis, which is an important but unexplored topic. At the moment there are few studies that focus on digital platforms during crisis times that take a farm or rural approach. Thus, this article fills a gap in the academic literature by focusing on why digital platforms led to transformational change amongst farm and rural entrepreneurs during the COVID-19 crisis. This is an important contribution as never before were state and local border restrictions enacted within Australia. Since the time of federation and during both World War I and World War II the states were open to people from other states. During the COVID-19 crisis the state borders closed and state premiers enacted their own rules and regulations regarding commerce. This differed to pre COVID-19 times when the federal Australian government influenced business decisions.

The ClickforVic platform was designed for people in the urban region of Melbourne that had the world's longest lockdown to connect with regional food producers. There was a partition between the Melbourne city area and the surrounding country area that had checkpoints. This meant people in Melbourne were restricted to a 5 kilometre radius during the second lockdown in 2020 that lasted approximately 111 days and the subsequent lockdowns in 2021 that included shorter periods. Never before had a city in Australia had mobility restrictions of this kind even in previous war times. This substantially affected farmers who were used to the people from Melbourne city travelling to regional areas. Furthermore, this problem was exacerbated due to the state border closure between Victoria and other states including New South Wales and South Australia that prevented people coming into Victoria. Thus, this study presents a unique way to understand farm entrepreneurship and the use of digital platforms during times of crisis.

Transport and food digital platforms are well known but less recognised are government digital platforms are designed for a specific event or purpose. Despite the popularity of digital platforms, the literature has not yet grappled sufficiently with how the COVID-19 crisis influenced their usage particularly digital platforms that are developed by the government. This gap may be due to the COVID-19 crisis being a recent event and the focus on global digital platforms instead of less well-known local digital platforms. Thus, the theoretical contribution of this article is to combine the literature on digital platforms and transformational entrepreneurship by focusing on the ramifications of the COVID-19 crisis. This has not been done before so the findings of this article provide a way to add to the existing literature on digital platforms but also to extend it by taking into account a crisis situation.

This article is structured as follows. Firstly, I review the literature on transformational entrepreneurship and digital platforms, which provides the theoretical framework for the study. Next the methodology is explained in terms of the steps taken to acquire and analyse the data. The findings are then reported followed by a discussion of the results. Finally, theoretical and managerial implications are stated together with limitations and future research suggestions.

## 2. Theoretical framework

### 2.1. Transformational entrepreneurship

Entrepreneurship tends to refer to positive change that occurs in a business setting. This means the alterations need to involve some form of innovation that happens in a proactive way. The innovation can be of an incremental nature in terms of a small change or radical in the form of a major alteration. Transformational entrepreneurship can be difficult to describe as it depends on the context in terms of how it is defined. [Dicuonzo, Donofrio, Fusco, and Ranaldo \(2022\)](#) suggest that transformational entrepreneurship is “the ability of entrepreneurs to face global challenges, such as the economic crisis, to improve the well-being of the community”. It is often used to describe social change that occurs through entrepreneurial and innovation activities that makes a difference to society. [Hernández, Moreno, and Hernández \(2018\)](#) utilise transformational social entrepreneurship theory as a way to understand

the business activities of handicraft entrepreneurs in developing countries. Other researchers such as [Omri \(2018\)](#) have utilised transformational entrepreneurship as a way to understand the linkage between entrepreneurial creativity and religious capital.

Unlike traditional forms of entrepreneurship that take a general approach to business creation, transformational entrepreneurship goes a step further by suggesting that entrepreneurship can be linked to societal problems ([Maas, Jones, & Lockyer, 2019](#)). This means that it involves creating innovative solutions to social needs that are currently not being addressed through business interaction. Thus, recently there has been an increased interest in transformational entrepreneurship as a distinct type of entrepreneurial activity that can be utilised to understand digital transformations ([Ratten & Jones, 2018a](#)). This is due to the entrepreneurial activity of digital platform providers that are responding to COVID-19 related needs.

### 2.2. Digital platforms

Digital platforms have enabled entities to co-create material with their partners and have disrupted the way transactions previously took place by supporting a coordination mechanism through the use of digital technology. [Ahmed, Bhatti, Gölgeci, and Arslan \(2022\)](#) states that digital platforms are “a way to develop the information technology infrastructure, and they include social media, mobile computing, and e-commerce platforms”. They help business create a smoother flow by integrating outside information sources. Digital platforms can occur in a variety of contexts including for payments, accommodation and health care with many having associated applications. [Bonina, Koskinen, Eaton, & Gawer, 2021](#) states that digital platforms have three main characteristics: “they are technologically mediated, enable interaction between user groups and allow those user groups to carry out defined tasks”. This means that digital platforms facilitate interaction amongst participants by offering digital content ([Zaheer, Breyer, & Dumay, 2019](#)). The content normally is of a modular form in terms of having different usages.

Digital platforms are attractive to entrepreneurs as they facilitate the concurrent development of related services ([Ben Arfi & Hikkerova, 2021](#)). [Modgil, Dwivedi, Rana, Gupta, and Kamble \(2022\)](#) define a digital platform as a “shared space to host services and an architecture that provides complementary offerings along with digital artifacts”. This means entrepreneurs can utilise digital platforms for all services from the making of a product to the selling and marketing of it online ([Chandna, 2022](#)). [Cusumano, Gawer, and Yoffie \(2021\)](#) suggests that digital platforms can be based on transactions or innovation. Transactional digital platforms are based on connecting buyers with sellers in an online format, which means they are a form of internet-based communication that benefits from online interaction ([De Reuver, Sørensen, & Basole, 2018](#)). Transactional platforms benefit from more people posting and buying products or services online. Social media platforms such as Facebook are building their digital platform based on network interaction that involve data analytics which is utilised for digital marketing purposes and to better target consumers. Other digital platforms such as Etsy offer online transaction services for those interested in cultural or handmade products. This has meant a growth in digital platforms for a specific purpose such as Gojek or Uber that were originally developed as a ride hailing app that then branched out to offer other services such as banking and grocery shopping. Innovative digital platforms include Airbnb and Amazon that started selling products for one main market then branched out to other endeavours.

Digital platforms utilise digital resources in order to provide information. [Chen, Tong, Tang, and Han \(2022\)](#) refer to digital platforms as “a type of platform that serves as a standardised digital interface and utilises digital technologies to facilitate interactions between different parties”. Often digital platforms utilise real time data to create complementary products ([Helfat & Raubitschek, 2018](#)). This means utilising locational data and previous usage information to predict behaviour.

Thereby going beyond traditional market mechanisms of a one-way interaction to make it more interactive (Hsieh & Wu, 2019). The use of big data analytics and machine learning is transforming how people buy online. The functionality of digital platforms and their interface facilitates more efficient outcomes. The digital design features enable more value creating activities to occur (Leung & Cossu, 2019).

On a digital platform entities put themselves under the authority and regulation of the platform provider. Broadly speaking, digital platforms involve integrated business processes that are conducted electronically (Nambisan, Siegel, & Kenney, 2018). This means the data supporting these processes is made available to others in a digitized format. Digital platforms are now part of people's lives and daily activities (Park et al., 2021). They enhance an innovation culture by encouraging the use of digital technology. Moreover, digital platforms simplify business activities and make transactions more easy to do in an online format (Srinivasan & Venkataraman, 2018).

Entrepreneurship is increasingly being conducted through the use of digital platforms (Nechushtai, 2018). This is due to the need to develop digital-based business ventures that can compete in the global marketplace (Nambisan & Baron, 2021). Digital platforms are a way for buyers and sellers to interact in an online format (Elia, Margherita, & Passiante, 2020). The platform itself can be accessed from any geographic location at any point in time making it easier and more efficient to use (Esposito, Renzi, Orlando, & Cucari, 2017). Digital platforms utilise information and communications technology to collect and disseminate information (Bonina, Koskinen, Eaton, & Gawer, 2021). In order to work effectively, digital platforms need to have a number of different services available on their websites in order to attract customers (Gawer, 2021).

Digital platforms are a valuable way for entrepreneurs to increase their market reach as they enable greater communication and accessibility for businesses, customers and suppliers (Falco & Kleinhans, 2018). They enable knowledge to be shared and information to be disseminated. This facilitates communities of practice to develop that enable best practices to be shared. Chandna (2022) found that digital platforms can be utilised by new social ventures in order to compete better in the marketplace. The level of digitalisation in farm or rural enterprises has typically been lower than urban enterprises. This is due to many farm businesses relying on direct interaction and communication for sales.

### 2.3. Research setting

The ClickforVic campaign was launched in August 2020 during the start of the first and second lockdowns in Melbourne, Australia. At that time the city of Melbourne metropolitan area was under mobility restrictions that limited travel to within a 5-kilometre radius for essential services only. This meant that residents could only leave home once per day per household for shopping and one hour for exercise. Essential workers were required to apply for and carry a written permit with them for travel. There was a 'Ring of Steel' around the Melbourne metropolitan area with checkpoints to prevent people traveling outside the area. During 2020 Melbourne was the only city in Australia under these kind of lockdown restrictions and the COVID-19 outbreak was restricted to this area.

The ClickforVic site was designed to support on a digital platform Victorian farmers and other community members. The emphasis was on buying directly from the maker thereby creating a digital portal for produce just made in Victoria. It was a Victorian government initiative designed in response to the need for local and mostly smaller producers to sell their products online. Due to large global digital platforms such as Amazon gaining much marketshare during the COVID-19 pandemic, the aim of the ClickforVic digital platform was to make it easier for consumers to purchase local products. On the website, individual regions could be explored and certain types of products (e.g. gifts and fashion; local produce; beer, wine and spirits; dining and coffee) clicked on for more detail. On the website there is tourism information about Victoria in terms of weather, public holidays and health and safety. There is also

information for overseas visitors in terms of visas, work, study and currency. The site was designed as a one-stop-shop and online marketplace. The goal of the site was to help local businesses survive and rebuild from the COVID-19 pandemic. The innovation on the site includes a CoLab Pantry that has a digital collection of the best goods from suppliers in Melbourne. This acted like an online version of a pantry in terms of consumers purchasing products and experiences from a number of retailers. Providoor was a service designed so that people could buy pre-prepared food. This includes meals from restaurants that due to the lockdown could only provide takeaway services. The Victorian Country Market was an online farmers market designed to replicate in an online format farmers markets that had to close due to lockdown restrictions.

### 3. Methodology

The research process of this study was designed to understand the role of transformational entrepreneurship through the introduction of a new digital platform. This meant a qualitative research approach was considered the best way to examine in a real-life context a current and ongoing phenomenon (Andersen & Wagtman, 2004). In order to assess the effects of the change, individual entrepreneurs were considered to be representative of their firm in terms of understanding the transformational process. Thus, the data collection focused on fifteen individual entrepreneurs who were interviewed using an in-depth semi structured approach. Semi-structured interviews were considered the most appropriate given their flexibility in delving deeper into emerging issues (Birkinshaw, Brannen, & Tung, 2011). An inductive approach was taken to explore the thoughts of the entrepreneurs about the usage of the digital platforms (Brannen, 2021). This enabled prior suggestions to be utilised but also new views to be included. The number of interviews was based on achieving theoretical saturation from the data obtained (Charmaz, 2006). An interview protocol was used in order to ensure the same questions were asked and it focused on the key themes from the research question (Crick, 2021). The interview protocol is stated in Table 1.

The interviews were conducted from August to December 2020 during the first and second COVID-19 lockdowns in Melbourne, Australia. Fifteen interviews were deemed a suitable number given the

**Table 1**  
Interview protocol.: example questions

1. How has the COVID-19 pandemic impacted the way your business sells products?
2. Prior to the COVID-19 pandemic what kind of digital platforms were used by your business?
3. How has the COVID-19 crisis influenced the way you use digital platforms such as the ClickforVic platform?
4. What kind of actions were implemented during the COVID-19 crisis in order to change to selling on an online format?
5. How has the ClickforVic digital platform helped you interact with others during the COVID-19 crisis?
6. To what extent do you think the ClickforVic digital platform has promoted your farm and region?
7. How has the ClickforVic digital platform created a sense of community and emphasis on helping society?
8. How have farm enterprises responded to the use of the ClickforVic digital platform to help them manage relationships and exchange information?
9. How have local and state governments promoted the use of the ClickforVic digital platform?
10. How has the ClickforVic digital platform and other online websites changed the way you do business?
11. How has the change to digital platforms transformed your business activities?
12. Compared to prior to the COVID-19 pandemic how did you use digital platforms and other forms of technology?
13. How do your partners utilise technology as a form of regulation or monitoring activity?
14. How quickly did you need to implement technology changes because of the COVID-19 pandemic?
15. Do you think the COVID-19 pandemic brought about digital changes that were unanticipated? How did this influence your perception about the use of digital platforms?



homogenous nature of the population and topic of the research. In order to supplement the interview data, secondary data was collected from websites, media releases and other sources (Creswell, 2014). This enabled further contextualisation of the transformational process that is important in understanding entrepreneurship. The secondary data complemented the primary data but also provided a secondary confirmatory check (Creswell & Creswell, 2018). Table 2 states some of the secondary data consulted during the research process.

### 3.1. Sample selection

The participants for this research were identified based on being affected by the phenomenon that was being studied (Marschan-Piekkari & Welch, 2004). Participants were selected based on a targeted sampling approach from personal networks of the researcher (Miles & Huberman, 1994). This included obtaining contact details through website information about farmers located in the Victorian countryside. The strategy was to obtain data from farmers outside of the Melbourne metropolitan area that would know and use the ClickforVic digital platform. To do this initial contact was made through the contact stated on the farm's website or through the personal knowledge of the interviewer about affected farms in the area.

A targeted sampling technique was utilised as the research focused on a specific digital platform (ClickforVic) that was only being used by farmers in regional Victoria, Australia (see website [www.visitvictoria.com/clickforvic](http://www.visitvictoria.com/clickforvic), last visited 27th May, 2022). This meant I had to select farmers in Victoria that had knowledge of this digital platform and understood the effects of the Melbourne lockdown in Australia. This meant they could provide detail about whether they were utilising the ClickforVic site and how it had influenced their business decisions during the COVID-19 crisis. Farmers were specified as the target sample due to the need to obtain information on how they had transformed their business enterprises through the use of a digital platform. Due to confidentiality and privacy concerns the names of the respondents have been changed in this article to pseudonyms (Patton, 1990). Farm entrepreneurs were selected as the sample for strategic reasons as they had been the ones most affected by the ClickforVic digital platform. A small and narrow sample was justified due to the emphasis of the ClickforVic digital platform on farmers. It also enabled more specific data about the ClickforVic effects to be studied in order to enable theoretical rich data to emerge.

Initial participants were screened in order to ensure they were located in Victoria, Australia and were farm or rural entrepreneurs. Once they had been screened and deemed to meet these criteria for study participants, they were then sent an informed consent form to sign (Sinkovics, Penz, & Ghauri, 2008). This included detail about the study and assurances of confidentiality and privacy for participants (Strauss & Corbin, 2008). They were then sent a message via phone or email asking them for a specific interview time. As the interviews were being

**Table 2**  
Example of secondary data collected.

Type of content	Website address
General information	<a href="https://www.together.vic.gov.au/click-vic">https://www.together.vic.gov.au/click-vic</a>
One stop digital platform	<a href="https://rechargevic.com.au/neighbourhood/click-for-vic-victorian-governments-one-stop-victorian-shop/R-Lj4OHm5-Q/24-08-20/">https://rechargevic.com.au/neighbourhood/click-for-vic-victorian-governments-one-stop-victorian-shop/R-Lj4OHm5-Q/24-08-20/</a>
Marketing information	<a href="https://campaignbrief.com/visit-victoria-launches-new-click-for-vic-campaign-via-melbourne-creative-studio-sirap/">https://campaignbrief.com/visit-victoria-launches-new-click-for-vic-campaign-via-melbourne-creative-studio-sirap/</a>
Testimonials	<a href="https://media.au.timeout.com/case-studies/visit-victoria-click-for-vic/">https://media.au.timeout.com/case-studies/visit-victoria-click-for-vic/</a>
Business implications	<a href="https://www.smartcompany.com.au/coronavirus/click-for-vic-campaign/">https://www.smartcompany.com.au/coronavirus/click-for-vic-campaign/</a>
State government support	<a href="https://www.premier.vic.gov.au/click-vic-support-local-businesses-and-local-jobs">https://www.premier.vic.gov.au/click-vic-support-local-businesses-and-local-jobs</a>
Scheme explained	<a href="https://www.abc.net.au/news/2020-08-23/victoria-coronavirus-click-for-vic-scheme-explained/12587232">https://www.abc.net.au/news/2020-08-23/victoria-coronavirus-click-for-vic-scheme-explained/12587232</a>

conducted they were concurrently analysed in order to make sure theoretical saturation was reached (Welch, Piekkari, Plakoyiannaki, & Paavilainen-Mäntymäki, 2011). This meant that the additional data was found not to have any substantially different information (Welch & Piekkari, 2017). Table 3 states more details of the farm entrepreneurs that were interviewed. Most of the respondents were located more than one hour away from the city of Melbourne with the closest location being Geelong (located approximately 75 kilometres from Melbourne) and the furthest Mildura (located approximately 538 kilometres from Melbourne). The age of the businesses ranged from 88 years old to 12 years old. This indicates there was a range of businesses with well established family run farms to more recently established single owner businesses. The number of employees also differed from 2 to 23 employees. A range of agricultural products were produced at the farms including apples, eggs, grapes, almonds and poultry.

### 3.2. Data collection

The data came from fifteen farm entrepreneurs semi-structured interviews that was considered the most appropriate data collection method due to time and cost constraints. Interviews provide direct and verbatim information about current conditions (Saunders & Townsend, 2018). They enable instant information to be obtained by those affected by change. This real time accounts are more personal and enables direct interaction with the person that is harder to do via other sources (Singh, Benmamoun, Meyr, & Arikan, 2021). This encourages interpretations to be made about how the phenomenon under investigation is affecting those involved (Sandelowski, 2000).

The interviews have a reflective approach that is considered more caring than other data collection methods that often occur post an event and after it has occurred (Lincoln & Guba, 1985). This means the information is obtained in a certain time period that can be better than observation methods that make participants uncomfortable. The open-ended questions also enabled new paths to emerge that could be probed in more detail (Langley & Abdallah, 2011). Additional sources such as websites supplemented the information obtained from the interviews (Kvale, 1996). Participants were asked to describe how the COVID-19 crisis has influenced usage of digital platforms. This enabled a focus on the ClickforVic platform as it was being utilised that enabled experiences to be obtained. This facilitated more detailed recollection to be captured at the time it occurred (Jantunen, Puumalainen, Saarenketo, & Kyläheiko, 2005).

### 3.3. Analysis

The data was analysed as follows. Firstly, the interviews were recorded then transcribed into Microsoft word. During the interviews notes were also made in order to provide comments (Hsieh & Shannon, 2005). This helped to contextualise the information at hand. The interviews were then coded by thematic groups based on topics (Glaser & Strauss, 1967). This was done in a systematic way in order to ensure a coherent analysis approach (Hemme, Morais, Bowers, & Todd, 2017).

A partially grounded approach was adopted in the analysis that started with existing concepts in the literature (Granow & Asbrock, 2021). As I analysed the data, the information was contrasted to existing literature to identify similarities and/or new information. Interpretative notes were made in order to refine the information (Gibbert, Ruigrok, & Wicki, 2008). In addition, memos enabled me to test the validity of the findings with the interview results. This enabled me to build our understanding of the topic by qualifying the data based on pre-existing literature (Doz, 2011). Follow up calls, emails and discussion were made to contextualise the findings. Saldana (2013) coding approach was utilised to categorise the data into sub-categories in order to obtain key themes. This meant checking the transcripts to make sure the main themes were identified, and the meanings were analysed in the appropriate way. Each transcript was read then the data coded based on

**Table 3**

Respondent details.

Interviewee number	Location	Year of business establishment	Number of employees	Main type of business	Length of interview (minutes)
1	Bacchus Marsh	1980	15	Apples	47
2	Shepparton	1967	5	Grapes	51
3	Geelong	1934	4	Eggs	23
4	Warrnambool	2005	12	Apples	44
5	Mildura	2010	7	Grapes	31
6	Geelong	1990	2	Almonds	37
7	Geelong	1983	12	Eggs	30
8	Warrnambool	1992	14	Grapes	27
9	Warrnambool	2002	4	Poultry	32
10	Geelong	2000	2	Eggs	19
11	Geelong	1986	12	Grapes	27
12	Warrnambool	1970	6	Milk	37
13	Bacchus Marsh	1988	23	Apples	25
14	Geelong	2004	8	Milk	20
15	Geelong	1972	4	Milk	19

specific topics (Drencheva, Stephan, Patterson, & Topakas, 2021). New topics emerged and were then analysed in order to make sure the information in the transcripts was reflected in the data codes (Bazeley & Jackson, 2013). A number of interviewees needed to make the same remark in order to identify a topic. This led to the main themes of crisis drivers, usages of digital platforms and transformational entrepreneurship outcomes to emerge. The data was analysed from different viewpoints due to a number of researchers reading the transcripts (Angus, Rintel, & Wiles, 2013). This enabled the data to be interpreted from a holistic perspective and then the most relevant statements were utilised to write the findings of the study.

The questions were designed to obtain rich data through a free flow of responses. This enabled the linking of concepts to the responses obtained. This was a complex process, but a coding system was developed on the questions included in the interview protocol. The coding system was adjusted as new information emerged that enabled patterns in the data to be analysed. The data was coded according to the similarities and differences as well as sub-themes that emerged. Table 4 shows an illustration of the coding process.

### 3.4. Trustworthiness of the findings

A number of steps were taken in order to ensure the trustworthiness of the findings. Firstly, a participatory approach was conducted by including the first author who interviewed the participants to code the data. By involving the same person with the interview and coding process it provided better contextualisation and research relevance. The previously shared insights were reviewed and checked with participants. This enabled clarification about the meaning and helped build theory. It enabled participants to give further feedback as a way of ensuring the meaning had been captured correctly. In addition, the semi-structured

interview guide was pilot tested on a small sample of farm entrepreneurs in order to clarify and refine the questions. This led to a change in the sequencing of the questions so that the issues about digital platform usage were included towards the start of the interview. The interview protocol was analysed by two other academic researchers with expertise in qualitative research design. As a consequence, a shorter number of questions were asked and the resulting questions focused more on the specific digital platform ClickforVic.

## 4. Findings

### 4.1. Transformational entrepreneurship outcomes

The interview data suggested that transformational outcomes could be separated into a digital view and interest in artificial intelligence. From the interviewee transcripts it was evident that the main transformational entrepreneurship outcomes from the ClickforVic site related to an increased usage in digital technology resulting from the need to pivot quickly to new digital formats. The digital view was supported by Interviewee 14 stating “never before has there been an emphasis on buying food products just from Victorian producers. The ClickforVic site changed this”. In the past, there was a tendency of the farm entrepreneurs to utilise face-to-face communication rather than digital communication for business purposes. This changed with the COVID-19 crisis as there were stay at home restrictions and limited mobility options for consumers. This meant there was a quick need to change existing business practices in order to survive the crisis. This problem was exacerbated by the international and domestic border shutdowns that meant people could not travel. As a consequence, the farm entrepreneurs tended to focus on using digital platforms as a way to enable them to discuss business ideas.

**Table 4**

Example of the coding process.

Category	Sub-category	Code	Number of evident transcripts	Number of coded text passages	Coded text examples and abbreviated interview number
Crisis drivers	Actions conducted Community response Social needs	ActionCommunitySocial	15	38	“The COVID-19 crisis has made us take certain actions” (I7)“Our community needs us to respond in certain ways” (I10)
Digital platforms	Maintaining connections Relationships Information	ConnectionsRelationshipsInformation	15	27	“The ClickforVic platform enables us to connect with others easily” (I4)“Others in the same position advertise on ClickforVic so it creates a sense of community” (I2)
Transformational entrepreneurship	Digital change Artificial intelligence usage	DigitalNew technology	15	34	“Our whole business now is digital” (I3)“We are utilising digital technology in a way never done before” (9)

The ClickforVic digital platform was a necessity in the COVID-19 crisis and was a proactive move. Another comment from Interviewee 2 supported this assertion as they said “ClickforVic the name suggests that people when online need to consider where they are buying from”. This quote suggests that the naming of the digital platform ClickforVic was important in terms of enabling entrepreneurs to know about a technology innovation that was designed just for their geographic region during the crisis. This enabled the entrepreneurs to realise that being part of Vic (Victoria) was helpful in terms of contributing to a digital community that was developing quickly as a result of the crisis. Thus, the transformation from traditional face-to-face to digital forms of communication was evident in the use of the ClickforVic website.

The transformation seemed to focus on small businesses that had previously not been quick adopters of digital platforms. This change in perception about the usefulness of digital platforms was evident amongst the respondents as it enabled them in a positive way to be part of the transformational changes occurring because of the COVID-19 pandemic. The focus on proactive and positive transformation is evident in Interviewee 3 saying “it is a proactive rather than reactive move of the government to support small business. Big business especially the big digital firms are gaining big time from the lockdown”. This was an interesting finding from the interview analysis in terms of digital platforms affecting small rather than large businesses. Due to the cost and time involved in creating a digital platform, the COVID-19 crisis had meant that governments needed to step in and provide funding. This helped limit the differences between small and large sized farm entrepreneurs in terms of how they could use digital platforms.

There was an innovation emphasis in the way farm entrepreneurs focused on digital technology during the lockdown. This innovation priority stemmed from the perception of digital platforms as being a form of transformational change. Interviewee 4 said “what can we do but go digital? We have to. No longer can we rely on walkins”. This meant that digital platforms were considered as a necessary step in dealing with the decreased ability of farm entrepreneurs to communicate in a direct way and the need to transform by using digital technology. Interviewee 11 suggested that the move to digital platforms was permanent by stating “we have to innovate and adapt to survive. ClickforVic is how we are doing this”.

The transformational change to digital platforms corresponded with an increased interest in artificial intelligence. This was considered an industry wide event as other businesses were also transitioning to use robots and other technologies. Interviewee 3 stated that “we feel part of this change to digital platforms is driven by an industry emphasis on new technologies particularly around the use of human-computer interaction. I know this because I read about in trade papers all the time”. The emphasis on artificial intelligence was considered a natural step after the farm entrepreneurs became more comfortable with using digital platforms. This was due to an increased interest and emphasis on the importance of using new digital technologies that can help their businesses. Moreover, there was some discussion about government regulations regarding the use of humans in the COVID-19 crisis that necessitated a move to artificial intelligence. This is evident in interviewee 12 stating that “I feel my partners are adopting new technology that relates to artificial intelligence so I think we will also have to do this soon”. This quote focuses on the role of partnering with regards to the use of digital platforms but particularly for artificial intelligence. Many of the interviewees discussed the role of their supply chain and marketing partners in terms of needing to adopt the same technologies that they were using. This was also considered part of their risk assessment in terms of ensuring they complied with government health regulations during the COVID-19 lockdowns. Interviewee 8 highlighted this by saying “due to a lack of workers coming from the city we have to rely on what we have available. This means we are certainly looking at robots and other technology that can do the same job as a human but without risk of catching COVID”. Table 5 states the transformational outcomes and provides illustrative examples.

Table 5

Transformational entrepreneurship outcomes with illustrative examples.

Transformational entrepreneurship outcomes	With illustrative examples
Digital view	<b>Innovation focus</b> “The ClickforVic website has enabled us to be innovative in terms of marketing programs” (Interviewee 2)“We have been innovative how we package our products in order to offer products that are tailored to the new COVID-19 environment” (Interviewee 11)“We have tried to be innovative in terms of competing with others based on our own unique product made here” (Interviewee 15) <b>Proactive focus</b> “The ClickforVic platform has made us aware of the need to focus on digital marketing and selling” (Interviewee 3)“The COVID-19 crisis was unforeseen so we must plan for the future in terms of change” (Interviewee 7)
Interest in artificial intelligence	<b>Compliance</b> “There are regulations we must comply with such as social distancing so the use of robots might be an option” (Interviewee 4)“Robots can do the work of humans so for us we must look into this in terms of them not getting the COVID-19 disease” (Interviewee 1) <b>Partnering</b> “Many of the retailers we sell to utilise data analytics so I think we must partner with them” (Interviewee 12)“Automated technology is a must in the COVID-19 crisis and they do not have to social distance!” (Interviewee 6) <b>Risk management</b> “Our workforce if they have to isolate means we need robots to do their work and it lets us continue” (Interviewee 8)“Predicting trends and the use of computers like humans is needed in times of the COVID-19 crisis” (Interviewee 2)

4.2. Usages of digital platforms

The interview data suggested that the main usages of digital platforms by the entrepreneurs was to connect with customers, access new relationships and to facilitate information acquisition. Interviewee 6 stated “the ClickforVic is an easy way to post information about the farms in the region and products they sell”. This meant the ClickforVic was viewed predominately in a positive way. Interviewee 10 states “it can be hard to keep track of customers but the digital interface of the ClickforVic site allows us to obtain information about what geographic region customers are coming from”. Therefore, the ClickforVic site enabled entrepreneurs to access new relationships. Interviewee 2 said that “city people are more interested now than before in supporting local producers. They want to buy local. The site makes it easier”. Furthermore, Interviewee 12 stated that “before I found it hard to connect with others and to develop relationships. The ClickforVic site makes it easy now for us due to its digital tracking capabilities”. The ClickforVic digital platform was viewed as enabling people to easily access information. Interviewee 3 said “it is a one-stop shop. It provides information as well as selling sites”. Thus, the ClickforVic site was deemed by many to be better than having separate sites or links as it provided information about Victoria. Therefore, as Interviewee 8 stated “it is better than just a website as it is a source of information. There is so much info on the site”.

Digital platforms were used by many of the interviewees during the COVID-19 crisis to access new relationships. This was an important way of maintaining interest in their businesses by connecting with like minded individuals. Due to the inability of many to travel, the ClickforVic platform was considered as the best and easiest way to meet new people and to foster new business connections. Interviewee 9 said “I am bored during this lockdown and have gone onto the ClickforVic platform to find others that might be interested in talking and developing new business partnerships. The platform has certainly been a lifeguard in terms of finding others”. This sentiment of the ClickforVic being a necessity in times of crisis was echoed by some of the other interviewees

who discussed how hard it had been for them. They discussed how new relationships enabled them to think about the future in a positive manner. By using the ClickforVic platform it made them learn about the power of digital platforms but also their usefulness.

The ClickforVic digital platform was utilised by many of the interviewees as a one-stop site to find information. This was particularly important in terms of finding Victoria specific information about the COVID-19 crisis. As interviewee 2 said “the COVID rules are all different in Australia depending on what state you are in. I go to the ClickforVic site in order to find specific Victoria information. This helps me as I am so confused with what we are not supposed to be doing”. This sentiment about the importance of finding information in one website was crucial in terms of responding in a timely manner to COVID-19 related challenges. As the lockdowns were introduced there were different rules for urban and rural Victoria that influenced business decisions. This was particularly important in the initial lockdowns that emphasised urban shutdowns as compared to the later lockdowns that resulted in state wide lockdowns. As interviewee 3 said “I am watching on tv all the updates about the COVID but what the ClickforVic site is summarise the information in a easy format. This is helpful for me as I get confused as to what is happening”. Table 6 states the usages of digital platforms and provides illustrative examples.

4.3. Crisis drivers

The data suggests that the COVID-19 crisis resulted in entrepreneurs pursuing action, community and social related goals. This meant due to the uncertainty associated with the pandemic, farm entrepreneurs were pushed into certain forms of behaviour. This behaviour was a result of a quick need to survive or face failure as a consequence of the changing situation. The action goals related to financial necessity and government regulations for many farmers. The lockdown meant there were no tourists or other travellers visiting their region. Interviewee 4 stated “Never before in the history of Australia has there been no tourism. Even in the wars there was still tourism. The sudden stop in city people visiting our region really affected our business”. This sentiment about the financial consequences of the lockdown impacting businesses financial performance was echoed by other interviewees such as Interviewee 6 who stated “our business relies on money coming in from people visiting our farm. Our cash flow is predicted on this trend. We did not anticipate this, but it will surely affect our financial positions and most likely we will have to draw on our cash reserves”.

The government regulations regarding farm labour and help also influenced the entrepreneurs into action. Interviewee 2 said “we are

required due to occupational health and safety reasons to have a number of people at the farm. Normally these workers are seasonal but with the lockdown it will likely mean we will have to do more of the work ourselves”. The government regulations regarding the number of hours workers were allowed to work and pay rates was considered an important consideration during the lockdown. Interviewee 12 said “if we cannot get people to travel here to work as we are outside the Melbourne metro area, it will affect our production levels”.

The interview data suggested that the farm entrepreneurs had community goals as a result of the crisis. This included maintain connections and promoting their region. During the lockdown many of the interviewees stated that they had family and/or friends in Melbourne city that they could not visit. Interviewee 5 stated “many of my family members live in Melbourne. They support the ClickforVic campaign because of me”. This sense of connection between rural and urban areas was evident in Interviewee 5’s response: “Whilst I live in the country, many city people I think respect the need for farming and that is why the ClickforVic site has become so popular”. Other respondents noted how the ClickforVic campaign highlighted the struggles of their region due to the lockdown.

As many regions in Victoria are associated with the food grow on or products made in the area, the interviewees felt that they needed to implement certain actions. Interviewee 7 said “Our region is suffering due to the lockdown. The ClickforVic site provides free or cheaper forms of advertising. It is a lifeline in this time of need”. Furthermore, Interviewee 8 pointed out that “The ClickforVic site has encouraged city folk to be interested in our region and buy our stuff”.

The social goals the respondents talked about concerned a desire to contribute to society and wanting to help. Some interviewees stated that they had started to produce hand sanitizer and masks to support their local community. Interviewee 3 stated “as soon as I heard about how the ClickforVic was trying to help us, I thought I should do something in return. As a consequence, I started to make masks”. This change or alteration in production methods was echoed by Interviewee 14 who said “the city people realize we are hurting and want to help by creating the ClickforVic site. So, I want to help them, so I started to make masks. Only small quantities though”. Table 7 states the crisis drivers of transformational entrepreneurship and provides illustrative examples.

5. Discussion: development of a conceptual framework

A conceptual framework based on the literature review but also from the data was developed, which is depicted in Fig. 1. Each section of the conceptual framework states how digital platforms have influenced transformational entrepreneurship. Each section and level of the conceptual framework will now be discussed. I found that the process of

Table 6 Usages of digital platforms with illustrative examples.

Digital platform usages	With illustrative examples
Connect with customers	“It is amazing what the ClickforVic platform can do in terms of connecting us to customers. It is fantastic” (Interviewee 15) “We are obtaining new customers from the ClickforVic platform particularly those wanting to help Victorian farmers” (Interviewee 7) “ClickforVic enables us to connect with customers interested in our homegrown product” (Interviewee 2)
Access new relationships	“ClickforVic provides a way to form new relationships based on locality. This is important in the crisis” (Interviewee 2)
Facilitate information acquisition	“Due to supply chain issues we need to find new suppliers and customers. ClickforVic enables us to do this” (Interviewee 8) “We are all in this together. Due to COVID it means we have to exchange information and the ClickforVic platform makes this possible” (Interviewee 10) “ClickforVic has so much information on it. It helps us access new information when we need it” (Interviewee 9)

Table 7 Crisis drivers of transformational entrepreneurship with illustrative examples.

Crisis drivers	With illustrative examples
Action goals	<b>Financial necessity</b> “Due to the COVID-19 crisis everyone, mostly, knows we are struggling financially and the ClickforVic enables us in a way to compete with the big platforms like Amazon” (Interviewee 11) <b>Government regulations</b> “Due to COVID restrictions people cannot travel as much as before so there is a need to do new actions” (Interviewee 2)
Community goals Social goals	<b>Maintain connections</b> “Our community needs to handle the COVID-19 crisis together. As a community we have a presence on the ClickforVic platform” (Interviewee 4) <b>Promote region</b> “Our region needs to promote itself as a community of farmers who are being affected by the COVID-19 crisis” (Interviewee 3) <b>Contribute to society</b> “The ClickforVic platform is a non-profit initiative that helps society” (Interviewee 10) <b>Wanting to help</b> “I want to help others like ourselves and I also try to buy on the ClickforVic platform” (Interviewee 9)



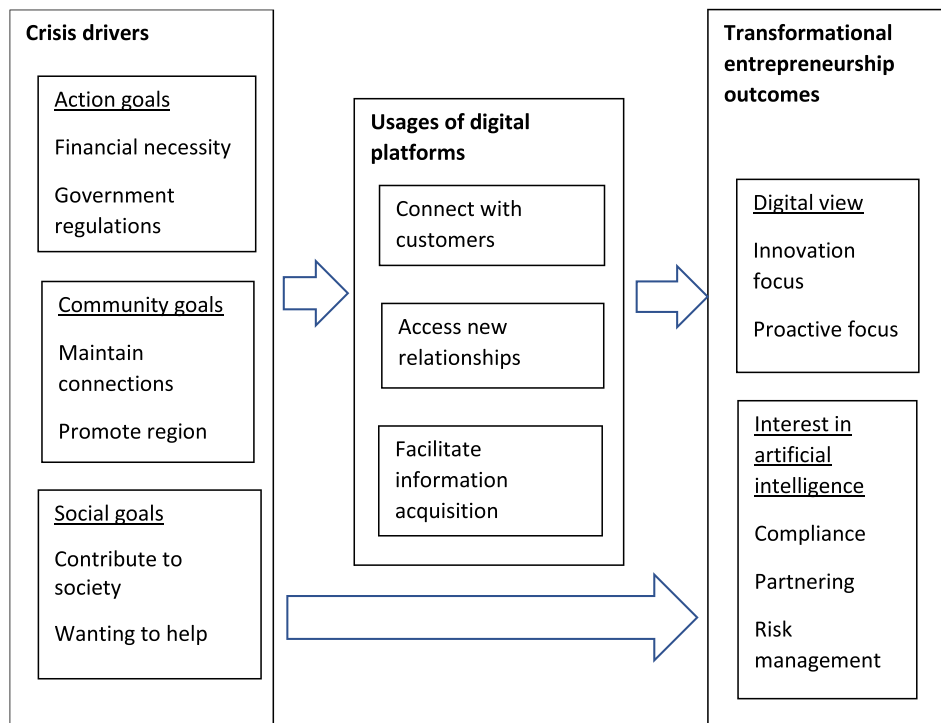


Fig. 1. Conceptual framework of crisis drivers and usages of digital platforms on transformational entrepreneurship outcomes.

transformational entrepreneurship is based on crisis drivers and the usages of digital platforms. Due to the data being collected during the COVID-19 pandemic it was found that the crisis has influenced both usage of digital platforms and transformational entrepreneurship outcomes.

The crisis drivers were based on a three-level hierarchy of action, community and social goals. These goals were the reason for the transformational entrepreneurship outcomes during the COVID-19 crisis. The action goals related to financial necessity and government regulations mandated during the COVID-19 lockdown period. The community goals were focused on maintaining connections and promoting the region. The social goals focused on contributing to society and wanting to help due to the COVID-19 crisis. Each of these three goals then influenced the usages of the ClickforVic digital platform. This meant the main reasons for usage of the digital platform were about connecting with customers, accessing new relationships and facilitating information acquisition. These usages then influenced the transformational entrepreneurship outcomes that were divided into digital and artificial intelligence motivations. The digital view considered innovation and being proactive the most important way digital platforms had contributed to transformational entrepreneurship outcomes whilst the interest in artificial intelligence was motivated by compliance, partnering and risk management needs.

### 5.1. Formulation of research propositions

This study sought to investigate the role of digital platforms in the transformational entrepreneurship process. I found that the COVID-19 crisis has affected the way entrepreneurs operate in the business environment. The findings contribute to the digital platform and transformational entrepreneurship literature in a number of ways. Thus, in this discussion I will focus on the findings and suggest a number of research propositions.

The findings suggest that transformational entrepreneurship can have a digital result in terms of creating more interest in digital capabilities. This is a relatively new linkage in the literature that links the

transformational entrepreneurship and digital platform work together. However, it relates to previous work by Ahmed, Bhatti, Golgeci and Arslan (2022) who suggested that environmental dynamism influences the way digital platforms are utilised by small and medium sized enterprises. In our study, the environmental change is caused by the COVID-19 crisis that has required transformations in the way digital platforms are utilised. This means that environmental market changes can result in increased levels of innovation that result in transformational entrepreneurship. Previous research by Zheng and Laurin (2018) was one of the first to discuss the usage of open innovation and knowledge creation from a transformational entrepreneurship perspective. Other research by Ben Arfi and Hikkerova (2021) discussed the importance of converting knowledge through digital platforms. In this study the ClickforVic digital platform was found to be a source of knowledge for entrepreneurs who could then make big changes. Whilst the link between digital platforms and knowledge conversion in practice is evident only recent have academic researchers been interested in this linkage (Bonina, Koskinen, Eaton, & Gawer, 2021). A recent study by Chandna (2022) found that digital platforms provide social value co-creation to occur particularly around social entrepreneurship outcomes. This means our study supports the view that digital platforms result in entrepreneurship but when combined with a crisis event like the COVID-19 pandemic the change is transformational.

The findings of this study suggested that the farm entrepreneurs were mostly utilising digital platforms for connection, access and information reasons. These reasons can be considered as a way of designing digital platforms so that they correspond to governance needs (Chen et al., 2022). Thus, this study extends our knowledge on the linkage between digital platforms and entrepreneurship by proposing that transformation change results more in times of COVID-19 crisis. As there are few current studies available on the impact of digital platforms during the COVID-19 crisis, this study helps to fill the gap in current knowledge about how crises events necessitate digital platform usage. Thereby responding to the need stated by De Reuver et al. (2018) of focusing on understanding the usages of digital platforms in new market environments. This means that this research supports the assertion by Cusumano et al. (2021) that

self-regulation of digital platforms is required in order to provide beneficial outcomes for society. In addition, the findings suggest that as a consequence of the increased usage of digital platforms have entrepreneurs become more interested in artificial intelligence in terms of partnering with other information technology providers and to minimise their risk in terms of the COVID-19 pandemic. Thus, supporting the view asserted by [Dicuonzo et al. \(2022\)](#) that transformational entrepreneurship does result from a digital platform that is managed in the right way. Prior research by [Dobson et al. \(2018\)](#) focused on transformational entrepreneurship from a developing country and education perspective. Thus, the findings of this research support prior research by going further by focusing on a crisis event for the need to introduce innovative digital platforms. Therefore, this leads to the first proposition:

*Research proposition 1: The increased usage of digital platforms has led to transformational entrepreneurship outcomes in terms of an increased digital view (in terms of an increased innovation and proactive focus) and interest in artificial intelligence (in terms of compliance, partnering and risk management)*

In order to facilitate the usage of digital technologies that reshape the entrepreneurial process it is useful to focus on digital entrepreneurship ecosystems ([Elia et al., 2020](#)). Digital platforms are a core concept in any discussion around digital entrepreneurial ecosystems as they provide the base foundation in which others interact. [Esposito et al. \(2017\)](#) suggest that the main advantage of digital platforms is that they enable open collaboration innovation to occur. This helps to increase the flow of information amongst entities, which is important in times of crisis. [Falco and Kleinhans \(2018\)](#) found that local governments can utilise digital platforms for citizen engagement. This helps to disseminate information to the right people within a local area. The findings of this study suggest that the main usages of digital platforms are regarding connecting with customers, accessing new relationships and facilitating information dissemination. As [Sutherland and Jarrahi \(2018\)](#) state digital platforms encourage relationship formation due to their ease of usage and flexibility. This means that the findings add to the literature on digital platforms in terms of understanding how they have been utilised by entrepreneurs in the COVID-19 pandemic. This adds to the existing literature on digital platforms, which is relatively new by highlighting the impact of crisis events ([Ratten & Jones, 2018b](#)). As the COVID-19 pandemic is recent, this study complements existing research on COVID-19 entrepreneurship that suggests the way entrepreneurship occurred during the crisis is different to other periods of time.

The research on digital platforms has tended to develop based on a focus on technology entrepreneurship instead of transformational outcomes ([Rossotto et al., 2018](#)). This study suggests that the COVID-19 crisis has made entrepreneurs rethink how they utilise digital platforms. This means the actions entrepreneurs take are big changes and can be classified as transformational. As [Torres and Augusto \(2018\)](#) suggested, transformational entrepreneurial leadership occurs in times of need and provides a way of incorporating cultural practices into leadership ideals. In addition, due to the COVID-19 crisis affecting communities, there are distinct social goals of entrepreneurs that have influenced their usage of digital platforms. [Gawer \(2021\)](#) suggests that digital platforms enable the interplay of firm competences to develop. The findings of this study suggests that this is important in times of crisis as different kinds of entrepreneurial needs are being met by a network of stakeholders. Therefore, by focusing on transformational forms of entrepreneurship rather than incremental or other types it can provide better results to the firms engaging in digital platform usage. [Helfat and Raubitschek \(2018\)](#) found that in order to profit from innovation in a digital platform-based ecosystem it is important to build dynamic and integrative capabilities. The results of this study suggest that this is done by focusing on the connection benefits obtained from digital platforms. Thus, the results complement research by [Hsieh and Yu \(2019\)](#) who suggested that increasing amounts of entrepreneurship are obtained by communicating information via digital platforms. This leads to the

second research proposition:

*Research proposition 2: The COVID-19 crisis has meant that entrepreneurs have had to rethink the usages of digital platforms in terms of actions (such as financial, government and regulations), community (such as maintaining connections and promoting their region) and social goals (such as contributing to society and wanting to help)*

The findings reveal that the COVID-19 crisis was unanticipated and a shock for many entrepreneurs. This meant they had difficulty in adjusting to the new social and economic environment. The existing business systems in place were based on physical and face to face interaction amongst consumers and businesses. Whilst there were some digital systems in place there was not the level of sophistication needed in order to go fully digital. This changed with the COVID-19 crisis that occurred quickly and necessitated the use of digital platforms. Never before had there been border closures in Australia and a delineation between urban and rural areas. Therefore, this study contributes to the literature on the COVID-19 pandemic in terms of linking it to public and financial forms of entrepreneurship. This means whilst there are social and community goals of entrepreneurs, the actions are often based on survivability. This supports research by [Spagnoletti, Resca, and Lee \(2015\)](#) who suggested that digital platforms support online communities. The study therefore contributes to the literature on transformational entrepreneurship by linking it to other forms of COVID-19 related entrepreneurship. This is a new angle in the literature that has not been discussed in much detail before. The findings complement research by [Srinivasan and Venkatraman \(2018\)](#) that suggest a network-centric view is needed to understand the entrepreneurship occurring in digital platforms. Thus, the study contributes to a better understanding of how the COVID-19 crisis led to increased usages of digital platforms.

The findings of this study suggest that the COVID-19 crisis has resulted in a rapid increase in the usage of digital platforms. This supports research by [Ibáñez, Guerrero, Yáñez-Valdés, and Barros-Celume \(2022\)](#) who suggested that digital social entrepreneurship resulted from stakeholders needing to respond to COVID-19 needs. This meant that the COVID-19 crisis resulted in digital platforms being used for a variety of entrepreneurship reasons including for social and community goals.

Research by [Belitski, Guenther, Kritikos, and Thurik \(2022\)](#) found that the COVID-19 crisis resulted in more small businesses thinking about entrepreneurship in a new way. Thus, the findings of this study support this view by showing that digital platforms enabled farm entrepreneurs to access required information in a timely manner in order to capitalise on business opportunities. [Ketchen and Craighead \(2020\)](#) suggest that more research at the intersection of entrepreneurship and COVID-19 is needed so this study has contributed by highlighting the transformational effects of entrepreneurship through digital platform usage.

The results of this study support the view that farm entrepreneurs have been creative in how they respond to the COVID-19 crisis. This corroborates research by [Kuckertz and Brändle \(2021\)](#) who found that early empirical research on the COVID-19 crisis and entrepreneurship have resulted in a creative reconstruction approach occurring in the business world. This means responding in a different way to what normally occurs by going against the status quo. [Liguori and Winkler \(2020\)](#) suggested that the main change following the COVID-19 pandemic has been a shift from offline to online interaction. This means digital platform usage has increased as a way to facilitate entrepreneurial endeavours ([Ratten, 2021](#)). Therefore, the results of this study can help support more entrepreneurs to use digital platforms for transformational entrepreneurial needs. This supports the contention by [Zahra \(2021\)](#) that in the post COVID-19 world digitalization will be increasingly used as a form of international entrepreneurship that integrates community and social interests. This leads to the next proposition:

*Research proposition 3: The COVID-19 crisis has led entrepreneurs to focus on how crisis drivers (such as action, community and social goals) resulted in increased usages of digital platforms (to connect with customers, access new relationships and facilitate information acquisition)*

## 6. Theoretical implications

The concept of transformational entrepreneurship is evident in practice with many social changes made possible through entrepreneurial endeavours. This means that the theory on transformational entrepreneurship is particularly relevant when examining how entrepreneurs responded to the COVID-19 crisis. This study has utilised the literature on transformational entrepreneurship to explain how digital platforms were used in the COVID-19 crisis. This means entrepreneurs can focus on the transformational capabilities of digital technology in times of crisis. Entrepreneurs should focus on the available government resources in terms of building digital platforms. This means utilising existing help channels but also tapping into social networks of entrepreneurs in the same position. This is important in developing both the transformational entrepreneurship and farm entrepreneurship literature with regard to crisis effects stemming from the COVID-19 crisis.

As there are few empirical studies on transformational entrepreneurship this study adds to the existing literature. This will help build the theory on transformational entrepreneurship particularly with regards to crisis events like the COVID-19 pandemic. The findings of this study suggest that a refined theory of transformational entrepreneurship that incorporates the COVID-19 context is required. Therefore, much like other entrepreneurship theories such as the theory of knowledge spillovers and entrepreneurial ecosystem theory has quickly developed, the research on transformational entrepreneurship is also expected to increase in the future.

## 7. Managerial and practical implications

Many farm businesses tend to focus on relationships rather than using digital platforms for supplier and customer interaction. The findings in this study suggest that digital platforms are particularly useful in times of crisis when it is not possible to physically interact. Farm entrepreneurs can utilise digital platforms as a way of staying connected with others in terms of communicating new developments. This can help them take advantage of the way digital platforms can be useful for farm entrepreneurs in order to build social media marketing campaigns that can enable new customer markets to be found. In addition, there are efficiency and cost gains of using digital platforms for farm entrepreneurs once they have initially learnt how to use the new technology.

Farm entrepreneurs need to rethink how they engage with the community and digital platforms are a way to do this. They enable farmers to disseminate business information but also stay connected with their community and social network. This is critical in crisis times when there are decreased tourist numbers and less direct engagement with customers. As a consequence, the findings of this study suggest that farm entrepreneurs very quickly moved to digital platforms as a necessity. This enabled a form of transformational entrepreneurship and increased the use of digital platforms. As some of the interviewees in this study stated, the next major transformation with regards to farm entrepreneurship practices will be the use of artificial intelligence. This can keep farm entrepreneurs competitive but also enable them to find new international markets. This is critical in times of crisis but also recovery stages of business development.

Farm entrepreneurs need to capitalise on the trends towards digital technology usage particularly around digital platforms. They need to continue to focus on implementing technology change within their business structures. This will help them to continue the transformational changes that have occurred with regard to digital platform usage during the COVID-19 crisis. It might be helpful for farm organisations to focus

on investing in technology particularly around the training about how to use digital platforms. This will help farm entrepreneurs to capitalise on the international benefits of connecting with others via digital platforms. It can also be useful for farm entrepreneurs to communicate and discuss with their supply chain network about what kind of processes can be added to digital platforms. At the moment the emphasis is on community engagement in terms of marketing and supply chain access but other features might be implemented on digital platforms. This can include the usage of artificial intelligence such as machine learning from previous interactions that further facilitate entrepreneurship.

As the COVID-19 crisis was unexpected for farm entrepreneurs, there is now more emphasis on obtaining real time information. Thus, farm entrepreneurs can utilise digital platforms to track farm features such as weather changes and stock levels to ensure they have proper plans in place to deal with crises. As there may be other pandemics in similar nature to the COVID-19 crisis, it is important that farm entrepreneurs implement changes now to deal with future events. They can do this by investing in artificial intelligence systems that forewarn or predict potential market and economic changes. This will ensure that they have complied with any government regulations that might affect their business.

In the post COVID-19 world farm entrepreneurs will continue to need to use digital platforms. Therefore, by using the ClickforVic digital platform it has provided them with a valuable insight as to the usefulness of technology innovations. This will help them feel more comfortable with new advances in digital platforms that provide more sophisticated and interactive forms of information. Due to the emphasis on the internet-of-things and real time information, the ClickforVic digital platform will likely be expanded to incorporate new needs. Thus, the farm entrepreneurs with experience in utilising the existing digital platform will be able to support other types of entrepreneurs in using government-based digital platforms. This will enable more inter-industry linkages and provide a way for farm entrepreneurs to be considered as digitally literate. Thereby expanding the role that farm entrepreneurs have in the global economy and also highlighting the way rural entrepreneurs can collaborate with urban entrepreneurs for transformational change.

## 8. Limitations and suggestions for future research

The 'ClickforVic' campaign was a new marketing promotion that was developed specifically because of the COVID-19 pandemic lockdowns in Melbourne. Thus, this study is one of the first to examine the transformational effects of the digital platform for entrepreneurs. This means I believe the qualitative approach using in-depth interviews provided the most effective way due to time and cost constraints to understand how the digital platform influenced the actions of entrepreneurs. It also enabled a detailed analysis of the usages of digital platforms by entrepreneurs in times of crisis. Despite the advantages of the research approach there are some limitations that can be addressed by future research.

The study participants were entrepreneurs, which enabled detailed data to be obtained but more longitudinal information about the flow on effects of digital platforms to other areas of business is required. This could include focusing on whether the COVID-19 pandemic lockdown restrictions resulted in temporary or permanent changes to digital platforms. It would be interesting for researchers to compare the before and after effects of the digital platforms. This could include focusing on efficiency and cost gains (if any) from the change to digital platforms.

Due to the study being focused on the Melbourne and Victoria area of Australia and specifically the effects of the Melbourne lockdowns on entrepreneurs, there is a limitation in terms of geographical generalisability. Therefore, other cities in Australia could be studied to see if entrepreneurs also moved more to digital platforms. This could provide more information to be obtained on how the Melbourne lockdown affected entrepreneurs and whether the restrictions lead to more



entrepreneurs accessing digital platforms. It would be beneficial to also study entrepreneur's perceptions of digital platforms to see if their view has changed due to the COVID-19 pandemic. This could include conducting experiments on digital platform usage or alternatively online surveys. There is still much to learn about how entrepreneurs transformed their businesses during the COVID-19 pandemic so the findings of this study could be used as a basis for future studies.

## 9. Conclusion

The aim of this study was to understand how farm entrepreneurs during the COVID-19 crisis have utilised digital platforms as a form of transformational entrepreneurship. The findings of this study suggest that digital platforms were an important way that farm entrepreneurs stayed connected and increased the competitiveness of their business. This was significant during the COVID-19 crisis with Melbourne, Australia having the world's longest lockdown and the city having mobility restrictions for residents. As all the respondents in this study were located in the Victorian countryside outside of the urban Melbourne lockdown area, the findings are helpful in understanding how their businesses shifted to digital platforms. This was useful in understanding the way farm communities and entrepreneurs linked in with urban consumers to continue to maintain rural businesses. Thereby enabling a better understanding of how farm entrepreneurs can be transformational through the use of innovation technologies such as digital platforms.

## References

- ([www.visitvictoria.com/clickforvic](http://www.visitvictoria.com/clickforvic)), last visited 10th April 2022.
- Ahmed, A., Bhatti, S. H., Gölgeci, I., & Arslan, A. (2022). Digital platform capability and organizational agility of emerging market manufacturing SMEs: The mediating role of intellectual capital and the moderating role of environmental dynamism. *Technological Forecasting & Social Change*, 177, Article 121513.
- Andersen, P. H., & Wagtman, M. A. (2004). Ensuring validity in qualitative international business research. *Handbook of qualitative research methods for international business* (pp. 464–485). Edward Elgar Publishing.
- Angus, D., Rintel, S., & Wiles, J. (2013). Making sense of big text: a visual-first approach for analysing text data using Leximancer and Discursis. *International Journal of Social Research Methodology*, 16(3), 261–267.
- Bazeley, P., & Jackson, K. (2013). *Qualitative Data Analysis with NVIVO* (second ed.). Sage Publications.
- Belitski, M., Guenther, C., Kritikos, A. S., & Thurik, R. (2022). Economic effects of the COVID-19 pandemic on entrepreneurship and small businesses. *Small Business Economics*, 58(2), 593–609.
- Ben Arfi, W., & Hikkerova, L. (2021). Corporate entrepreneurship, product innovation, and knowledge conversion: the role of digital platforms. *Small Business Economics*, 56(3), 1191–1204.
- Birkinshaw, J., Brannen, M. Y., & Tung, R. L. (2011). From a distance and generalizable to up close and grounded. Reclaiming a place for qualitative methods in international business research. *Journal of International Business Studies*, 42(1), 573–581.
- Bonina, C., Koskinen, K., Eaton, B., & Gawer, A. (2021). Digital platforms for development: Foundations and research agenda. *Information Systems Journal*, 31(6), 869–902.
- Brannen, M. Y. (2021). From a distance to up close and contextual: Moving beyond the inductive/deductive binary. *Journal of International Business Studies*, 1–8.
- Chandna, V. (2022). Social entrepreneurship and digital platforms: Crowdfunding in the sharing-economy era. *Business Horizons*, 65(1), 21–31.
- Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. Thousand Oaks, California: Sage.
- Chen, L., Tong, T. W., Tang, S., & Han, N. (2022). Governance and design of digital platforms: A review and future research directions on a meta-organization. *Journal of Management*, 48(1), 147–184.
- Creswell, J. W. (2014). *Research design. Qualitative, quantitative, and mixed method approaches* (fourth ed.). Thousand Oaks: Sage Publications.
- Creswell, J. W., & Creswell, J. D. (2018). *Research design. Qualitative, quantitative & mixed methods approaches, 5th ed. (International student edition)*. Thousand Oaks: Sage Publications.
- Crick, J. M. (2021). Qualitative research in marketing: what can academics do better? *Journal of Strategic Marketing*, 29(5), 390–429.
- Cusumano, M. A., Gawer, A., & Yoffie, D. B. (2021). Can self-regulation save digital platforms? *Industrial and Corporate Change*, 30(5), 1259–1285.
- De Reuver, M., Sørensen, C., & Basole, R. C. (2018). The digital platform: A research agenda. *Journal of Information Technology*, 33(2), 124–135.
- Dicunzio, G., Donofrio, F., Fusco, A., & Rinaldo, S. (2022). The role of transformational entrepreneurship in managing a digital platform: The case of Yamamay (Vol. ahead-of-print No. ahead-of-print) *Journal of Strategy and Management*. <https://doi.org/10.1108/JMSA-02-2021-0062>.
- Dobson, S., Maas, G., Jones, P., & Lockyer, J. (2018). Experiential learning through the transformational incubation programme: A case study from Accra, Ghana. *Experiential learning for entrepreneurship* (pp. 225–244). Palgrave Macmillan, Cham.
- Doz, Y. (2011). Qualitative research for international business. *Journal of International Business Studies*, 42(5), 582–590.
- Drencheva, A., Stephan, U., Patterson, M. G., & Topakas, A. (2021). Navigating interpersonal feedback seeking in social venturing: The roles of psychological distance and sensemaking. *Journal of Business Venturing*, 36(4), Article 106123.
- Elia, G., Margherita, A., & Passiante, G. (2020). Digital entrepreneurship ecosystem: How digital technologies and collective intelligence are reshaping the entrepreneurial process. *Technological Forecasting & Social Change*, 150, Article 119791.
- Esposito, S., Renzi, A., Orlando, B., & Cucari, N. (2017). Open collaborative innovation and digital platforms. *Production Planning & Control*, 28(16), 1344–1353.
- Falco, E., & Kleinbans, R. (2018). Beyond technology: Identifying local government challenges for using digital platforms for citizen engagement. *International Journal of Information Management*, 40, 17–20.
- Gawer, A. (2021). Digital platforms' boundaries: The interplay of firm scope, platform sides, and digital interfaces. *Longest Range Planning*, 54(5), Article 102045.
- Gibbert, M., Ruigrok, W., & Wicki, B. (2008). What passes as a rigorous case study? *Strategic Management Journal*, 29(13), 1465–1474.
- Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. New York NY: Aldine Transaction.
- Granow, M., & Asbrock, F. (2021). A framework for culturally diverse teams and the importance of agility: findings from a qualitative study. *International Studies of Management & Organization*, 51(1), 47–68.
- Helfat, C. E., & Raubitschek, R. S. (2018). Dynamic and integrative capabilities for profiting from innovation in digital platform-based ecosystems. *Research Policy*, 47(8), 1391–1399.
- Hemme, F., Morais, D. G., Bowers, M. T., & Todd, J. S. (2017). Extending sport-based entrepreneurship theory through phenomenological inquiry. *Sport Management Review*, 20(1), 92–104.
- Hernández, S. J. M., Moreno, J. R., & Hernández, C. L. (2018). Development of transformational social entrepreneurship through innovation determinants in the handicraft industry of the Wayuu community in Colombia. *Transformational entrepreneurship* (pp. 47–57). Routledge.
- Hsieh, H.-F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277–1288.
- Hsieh, Y. J., & Wu, Y. J. (2019). Entrepreneurship through the platform strategy in the digital era: Insights and research opportunities. *Computers in Human Behavior*, 95, 315–323.
- Ibáñez, M. J., Guerrero, M., Yáñez-Valdés, C., & Barros-Celume, S. (2022). Digital social entrepreneurship: The N-Helix response to stakeholders' COVID-19 needs. *The Journal of Technology Transfer*, 47(2), 556–579.
- Jantunen, A., Puumalainen, K., Saarenketo, S., & Kyläheiko, K. (2005). Entrepreneurial orientation, dynamic capabilities and international performance. *Journal of International Entrepreneurship*, 3(3), 223–243.
- Jones, P., Maas, G., 2019. Conclusions on transformational entrepreneurship *Gideon Maas and Paul Jones (Hg.): Transformational Entrepreneurship Practices Global Case Studies*, pp. 105–113.
- Ketchen, D. J., Jr., & Craighead, C. W. (2020). Research at the intersection of entrepreneurship, supply chain management, and strategic management: Opportunities highlighted by COVID-19. *Journal of Management*, 46(8), 1330–1341.
- Kuckertz, A., & Brändle, L. (2021). Creative reconstruction: A structured literature review of the early empirical research on the COVID-19 crisis and entrepreneurship. *Management Review Quarterly*, 1–27.
- Kvale, S. (1996). *Interviews: An introduction to qualitative research interviewing*. Thousand Oaks, California: Sage.
- Langley, A., & Abdallah, C. (2011). Templates and turns in qualitative studies of strategy and management. In D. Ketchen, & D. Bergh (Eds.), *Research methodology in strategy and management vol 6: Building methodological bridges* (pp. 201–235). Emerald Group Publishing Ltd.
- Le Grange, A. (2020). Integral integrated insight: Reflections for transformational entrepreneurship. *Enterprising Africa* (pp. 12–34). Routledge.
- Leung, W. F., & Cossu, A. (2019). Digital entrepreneurship in Taiwan and Thailand: Embracing precarity as a personal response to political and economic change. *International Journal of Cultural Studies*, 22(2), 264–280.
- Liguori, E., & Winkler, C. (2020). From offline to online: Challenges and opportunities for entrepreneurship education following the COVID-19 pandemic. *Entrepreneurship Education and Pedagogy*, 3(4), 346–351.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. London: Sage.
- Maas, G., Jones, P., Lockyer, J., 2019. The Journey to Transformational Entrepreneurship *Gideon Maas und Paul Jones (Hg.): Transformational Entrepreneurship Practices Global Case Studies*, pp. 1–14.
- Marschan-Piekkari, R., & Welch, C. (2004). *Handbook of qualitative research methods for international business* (pp. 5–24). Cheltenham: Edward Elgar.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: an expanded sourcebook*. New York: Sage.
- Modgil, S., Dwivedi, Y. K., Rana, N. P., Gupta, S., & Kamble, S. (2022). Has Covid-19 accelerated opportunities for digital entrepreneurship? An Indian perspective. *Technological Forecasting and Social Change*, 175, Article 121415.
- Nambisan, S., & Baron, R. A. (2021). On the costs of digital entrepreneurship: Role conflict, stress, and venture performance in digital platform-based ecosystems. *Journal of Business Research*, 125, 520–532.



- Nambisan, S., Siegel, D., & Kenney, M. (2018). On open innovation, platforms, and entrepreneurship. *Strategic Entrepreneurship Journal*, 12(3), 354–368.
- Nechushtai, E. (2018). Could digital platforms capture the media through infrastructure? *Journalism*, 19(8), 1043–1058.
- Nelson, J. L., & Lei, R. F. (2018). The effect of digital platforms on news audience behavior. *Digital Journalism*, 6(5), 619–633.
- Nooren, P., van Gorp, N., van Eijk, N., & Fathaigh, R.Ó. (2018). Should we regulate digital platforms? A new framework for evaluating policy options. *Policy & Internet*, 10(3), 264–301.
- Omri, W. (2018). Individual innovativeness, entrepreneurial creativity and religious capital: The role of transformational entrepreneurship in Tunisia. *Transformational Entrepreneurship* (pp. 116–135). Routledge.
- Park, H., Kim, S., Jeong, Y., & Minshall, T. (2021). Customer entrepreneurship on digital platforms: Challenges and solutions for platform business models. *Creativity and Innovation Management*, 30(1), 96–115.
- Patton, M. Q. (1990). *Qualitative Evaluation and Research Methods*. New York: SAGE Publications.
- Ratten, V. (2021). COVID-19 and entrepreneurship: Future research directions. *Strategic Change*, 30(2), 91–98.
- Ratten, V., & Jones, P. (2018aaa). The future for transformational entrepreneurship. *Transformational entrepreneurship* (pp. 195–200). Routledge.
- Ratten, V., & Jones, P. (2018bbb). *Transformational Entrepreneurship*. London: Routledge.
- Rosotto, C. M., Lal Das, P., Gasol Ramos, E., Clemente Miranda, E., Badran, M. F., Martinez Licetti, M., & Miralles Murciego, G. (2018). Digital platforms: A literature review and policy implications for development. *Competition and Regulation in Network Industries*, 19(1–2), 93–109.
- Saldana, J. (2013). *The Coding Manual for Qualitative Research* (second ed.). Sage Publications.
- Sandelowski, M. (2000). Focus on research methods: whatever happened to qualitative description? *Research in Nursing and Health*, 23(4), 334–340.
- Saunders, N. K., & Townsend, K. (2018). Choosing participants. In C. Cassell, A. L. Cunliffe, & G. Grandy (Eds.), *The Sage handbook of qualitative business and management research methods* (pp. 480–494). London, United Kingdom: Sage Publications.
- Singh, N., Benmamoun, M., Meyr, E., & Arikan, R. H. (2021). Verifying rigor: Analysing qualitative research in international marketing. *International Marketing Review*, 38(6), 1307, 1289.
- Sinkovics, R. R., Penz, E., & Ghauri, P. N. (2008). Enhancing the trustworthiness of qualitative research in international business. *Management International Review*, 48(6), 689–714.
- Spagnoletti, P., Resca, A., & Lee, G. (2015). A design theory for digital platforms supporting online communities: A multiple case study. *Journal of Information Technology*, 30(4), 364–380.
- Srinivasan, A., & Venkatraman, N. (2018). Entrepreneurship in digital platforms: A network-centric view. *Strategic Entrepreneurship Journal*, 12(1), 54–71.
- Strauss, A., & Corbin, J. (2008). *Basics of qualitative research*. Newbury Park, CA: Sage.
- Sutherland, W., & Jarrahi, M. H. (2018). The sharing economy and digital platforms: A review and research agenda. *International Journal of Information Management*, 43, 328–341.
- Torres, P., & Augusto, M. (2018). Cultural leadership ideals and cultural practices leading to women's participation in transformational entrepreneurial leadership. *Transformational entrepreneurship* (pp. 136–157). Routledge.
- Welch, C., & Piekkari, R. (2017). How should we (not) judge the 'quality' of qualitative research? A re-assessment of current evaluative criteria in International Business. *Journal of World Business*, 52(5), 714–725.
- Welch, C., Piekkari, R., Plakoyiannaki, E., & Paavilainen-Mäntymäki, E. (2011). Theorising from case studies: Towards a pluralist future for international business research. *Journal of International Business Studies*, 42(5), 740–762.
- Zaheer, H., Breyer, Y., & Dumay, J. (2019). Digital entrepreneurship: An interdisciplinary structured literature review and research agenda. *Technological Forecasting & Social Change*, 148, Article 119735.
- Zahra, S. A. (2021). International entrepreneurship in the post Covid world. *Journal of World Business*, 56(1), Article 101143.
- Zheng, C., & Laurin, C. (2018). Open innovation, knowledge creation and capability building: The case analysis of transformational entrepreneurship at Alibaba and SHOP.COM. *Transformational entrepreneurship* (pp. 158–178). Routledge.