



# Coronavirus and international business: An entrepreneurial ecosystem perspective

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## Abstract

Covid-19 (Coronavirus) is a health pandemic that has significantly affected the global economy and fundamentally changed society. The impacts of coronavirus are most apparent at the international business level due to the restrictions on travel and mobility of labor. This has necessitated an entrepreneurial outlook for businesses in order to survive in the current market environment. The aim of this article is to discuss the implications of the coronavirus for international business by taking an entrepreneurial ecosystem point of view. This enables a reflection on how the pandemic has impacted various entities of the ecosystem in terms of stakeholder engagement. Suggestions for acting in a more dynamic and innovative manner are provided that highlight the importance of utilizing entrepreneurial ecosystems in times of crises.

## KEYWORDS

coronavirus, crisis, ecosystem, entrepreneurship, international business, pandemic

## 1 | INTRODUCTION

The Covid-19 (coronavirus) pandemic has presented unique problems and opportunities for international business and entrepreneurship. As Parnell et al. (2020, p. 1) states “the coronavirus disease 2019 (COVID-19) lays bare the society we have created, centuries of global processes and the cultivated, networked society and its interdependent infrastructural architecture”. No region of the world has not been impacted by the virus and there does not seem to be any distinction between developed and developing countries in terms of the effects of the virus (World Health Organization, 2020). While there has been other health pandemics that have affected the global economy, the uncertainty caused by covid-19 has resulted in new ways of looking at entrepreneurship (Liguori and Winkler, 2020). Other health pandemics such as the Middle East Respiratory Syndrome and Ebola have affected specific geographic regions while coronavirus has had global consequences. This means a new way of understanding how entrepreneurship results in times of heightened uncertainty is needed. In addition, the quick progression of coronavirus has resulted in significant cultural, social, and business change. From a cultural perspective, it has altered societal practices most notably in the form of social distancing. Due to the highly contagious nature of the disease, individuals were told to practice social

distancing, which meant maintaining a physical space when in the presence of others. This has led to a reliance more on online rather than physical communication. While there are many disadvantages associated with physical distancing such as the inability to read non-verbal cues, it has created advantages in the new form of communication made possible from digital technologies. This has emphasized more the use of digital devices and communication methods to exchange ideas. It can also be easier to communicate online rather than in a physical form due to geographic reasons. This has led to increased usages of streaming facilities that has further intensified societies need for digitalization (Qian, 2018). From a social perspective, there has been a dramatic reduction in group activities. This has been an unprecedented event due to the way it has changed communities. There is now more emphasis on individual rather than group activity. This is not to say group activities do not exist as they do but in a new format.

Since coronavirus first emerged in January 2020, it has quickly spread to become a health issue of global importance. Unlike Severe Acute Respiratory Syndrome (SARS), which was largely concentrated in Asia, coronavirus has had a huge effect on Europe and North America. This resulted in businesses shutting down and individuals confined to their homes. The “new normal” now refers to a lifestyle that encompasses social distancing and more emphasis on personal

hygiene. From a business perspective, large-scale events have been cancelled. This has dramatically impacted the tourism and hospitality industries. Moreover, most countries have instituted bans on group activities and this has led to large-scale events being cancelled. As entertainment, sport, and music events have become part of individuals' lives, this change has substantially affected the events industry. In addition, the flow on effect to activities such as tourism and food purchases has stopped. As this happened quickly, for most event organizers there was no chance to instigate alternative events. At home, events such as live streaming of music in the musician's home are becoming popular. Thus, entrepreneurship and entrepreneurs are needed to develop new types of events based on the environmental context. The coronavirus pandemic is predicted to have worse economic effects than the 2008 global financial crisis. The objective of this article is to discuss the implications for international business and entrepreneurship derived from the coronavirus pandemic. The key research question for this article is, how do international entrepreneurs navigate the coronavirus pandemic? To answer this question, the next section will further discuss the role of crisis management in influencing entrepreneurial behavior based on responses to the coronavirus.

## 2 | CRISIS MANAGEMENT

Previous research on crisis management has tended to focus on natural disasters or financial events (Grewal & Tansuhaj, 2001). This has limited the current literature to crises that occur as a result of economic or weather related factors. While there is some research about health crises, the research tends to take a more narrow view of issues that in a way progress in a slow manner. Entrepreneurship literature has discussed crises management but more from an economic rather than a behavioral perspective. As the current crisis is still ongoing, there needs to be more attention paid to how entrepreneurs' attitudes and behaviors are changing based on creativity, innovation, and futuristic decision-making. This will help to understand how resilient entrepreneurs are as they cope with the global uncertainty.

A crisis can be described as a phenomenon that does not occur often, has a high level of uncertainty and impacts society. A crisis generates a sense of urgency in how to respond to the situation. Crises can differ in length, type, and magnitude depending on its impact on society. In order to respond to crises, there needs to be coordination among stakeholders. Natural disasters such as earthquakes, hurricanes, and bushfires tend to be a one-off event that occur based on specific environmental circumstances. This means that while they continually occur they are typically sporadic and can be controlled with the use of interventions. Other types of crises such as technological disasters such as computer bugs have serious effects on business but the origin is known and easier to deal with firms from a management perspective. Government-level crises such as political deadlocks or changes in leadership can have a large effect on the stability of a country. Health crises are harder to understand as they are typically infrequent and unpredictable. Thus, health crises can be characterized

as a black swan in that they are unexpected but have severe consequences (Bogle & Sullivan, 2009). Black swan events are characterized as being surprising, of great significance, and having a major economic effect (Kuckertz et al., 2020). Recent health crises have included the Ebola crisis, which affected the Central-Western African region in terms of income level, manufacturing, and food processing (Cortez and Johnston, 2020). In addition, the SARS epidemic had a negative effect on production and sourcing of supplies. However, the coronavirus is a more aggressive pandemic that has affected most regions of the world. In addition, the consequences of the pandemic have resulted in changing workplace and societal practices that have previously not occurred before. The global nature of the pandemic has meant a concurrent effect on most health systems. Thus, the focus has been on treating patients based on available information, while at the same time trying to safeguard current citizens. The sudden effect of the pandemic represents an opportunity for entrepreneurs to develop quickly necessary products and services.

The coronavirus crisis has threatened the ability of a business to conduct its activities due to social policies being introduced such as working from home and social distancing. This combination has made it difficult for many businesses particularly those in the service economy to survive. In addition, the cash flow of many businesses has substantially changed in a short time frame. Some businesses most notably supermarkets and technology companies have flourished but also faced difficulties in terms of high customer demands and supply chain difficulties.

Crises also result in market turbulence due to changes in routines and structures (Williams, Gruber, Sutcliffe, Shepherd, & Zhao, 2017). Businesses that have established specific capabilities based on the continuance of current market circumstances have had to dramatically reevaluate their decisions. Few businesses would have been prepared for the current health crises despite having risk management and resilience strategies in place. The concept of resilience has been studied in the entrepreneurship literature in terms of understanding how business adapt or resist change (Doern, Williams, & Vorley, 2019). Resilience incorporates a sense of innovativeness, in terms of being able to change business activity. In addition, innovative businesses tend to be able to anticipate and then adjust to change in an appropriate way. This enables them to pivot or change direction depending on market need. Crises have had a profound effect on businesses particularly small businesses that rely on weekly projections in order to maintain their market share. The unpredictability resulting from crisis means an increased need for government assistance and support.

## 3 | ENTREPRENEURIAL ECOSYSTEMS

The ecosystems metaphor was first used by Moore (1993) to describe the competitive marketplace in terms of predators and prey. This language was a way of understanding the strengths and weaknesses of firms in the economic environment. As there are firms that are acquired by others, this terminology is a useful way of describing the process. It took some time for the concept of entrepreneurial

ecosystems to gain popularity in the marketplace due to the emphasis on other ways to describe innovative activities occurring in a place. The concept of an entrepreneurial ecosystem is an important way of understanding the effects at the present time and in the future as a result of the coronavirus.

Audretsch et al. (2019, p. 314) states "the metaphor 'ecosystem' reflects the tendency in academia to describe the old phenomena of agglomeration effects of regions (urban, regional, national ecosystem) and industries (agriculture, chemical, manufacturing, media, finance ecosystems), that is, clusters either of firms (business, entrepreneurial ecosystems) or activities (service, innovation, digital ecosystems)". Traditionally there has been a tendency to focus on an individual entrepreneur or organization rather than considering their contextual environment. This has changed with an increased awareness of how the environment affects entrepreneurship particularly as a result of crisis such as the coronavirus. An ecosystem is broadly defined as "a purposeful collaborating network of dynamic interacting systems that have an ever-changing set of dependencies within a given context" (Sussan & Acs, 2017, p. 57). This means that in an ecosystem a variety of entities are required in order for it to function in a proper manner. This requires interaction among entities that encourages collaboration and information sharing with regard to current events including critical incidents such as the coronavirus. Within an ecosystem, there are different types and levels of information flow depending on the entrepreneurial cycle.

Ecosystems have a dynamic nature as they change based on environmental conditions. This means to truly understand how an entrepreneurial ecosystem evolves requires a great deal of time and effort. This is due to the way the interactions in an ecosystem determine the effect of a crisis. Natural ecosystems are defined as "a community of living organisms in conjunction with the nonliving components of their environment, where the 'eco' part of the word is assumed to be related to the environment and 'system' implies the function as a collection of related parts that function as a unit" (Smith & Smith, 2015, p. 19). This definition highlights the interaction between science and business from the coronavirus. Entrepreneurial ecosystems are based on the self-organization of members around entrepreneurial pursuits and in times of crisis are important ways to cope with change. This means that as more members become involved in entrepreneurship the ecosystem acts in a sustainable way. This enables more entrepreneurial action to take place based on the embedded interactions between stakeholders affected by the coronavirus. In order to grow an entrepreneurial ecosystem, there needs to be strategies put in place in order for more entities to succeed in entrepreneurial pursuits.

Acs et al. (2014, p. 479) define an entrepreneurial ecosystem as "a dynamic institutionally embedded interaction between entrepreneurial attitudes, abilities and aspirations by individuals which drives the allocation of resources through the creation and operation of new ventures". This definition is particularly relevant for how to deal with the crisis derived from the coronavirus. The main components of an entrepreneurial ecosystem include a community culture, sustaining networks, and infrastructure. Thus, there is no single formula for an entrepreneurial ecosystem rather it relies on environmental forces for

its development. This means some entrepreneurial ecosystems will be more efficient in offering ways to deal with the coronavirus due to the expansion of entrepreneurial activities. Therefore, the trajectory of a region is dependent on the existence of entrepreneurial ecosystems that encourage new venture creation. Most conceptualizations of ecosystems are based on the assumption that they contain similar entities. This is not always true as entrepreneurs have different access to resources depending on socio-economic factors and impact of crises. This means the participation and involvement in an ecosystem will be based on opportunity as well as necessity.

Platform ecosystems are based on companies generating a set of tools that can be built upon by others. This can include integrated technologies that reduce the need for research and development by sharing knowledge about the coronavirus. Infrastructure refers to the portfolio of public goods that facilitates entrepreneurship. Infrastructure includes highways, ports, and telecommunications that are normally managed by government entities. Other forms of infrastructure include education institutions and research facilities that are funded by the government. In an ecosystem, these forms of infrastructure are utilized as a form of concurrent activities that occur based on environmental changes from the coronavirus. Over time, these activities either align or diverge depending on the involvement of ecosystem members.

An ecosystem approach to entrepreneurship has been embraced due to the way it captures the evolving and dynamic nature of entrepreneurship. There are many different forces that influence entrepreneurship that are constantly changing based on environmental conditions. This means more policy makers and business leaders are trying to handle the coronavirus based on an entrepreneurial ecosystem philosophy. A vibrant ecosystem is the result of many activities that support innovation and new venture creation. In order to support high levels of entrepreneurial activity in a region, there needs to be a number of activities occurring on a constant basis that focus on problem solving for the coronavirus. This includes learning and information sharing that helps foster innovative behavior. The main attributes of a vibrant entrepreneurial ecosystem includes "deep reservoirs of early stage investments, entrepreneurship-specific human capital, cutting edge research institutions, lead users of innovations, dense social networks among entrepreneurs and cultural orientations that are supportive of entrepreneurial activities" (Roundy, 2019, p. 4). Early stage investment is needed in a region in order to foster innovative projects regarding the coronavirus. This helps designate money to causes that are likely to have a positive flow on effect in the economy. Due to the uncertainty of some innovations regarding the coronavirus, it helps to have a foothold in a number of early stage projects. This reduces the risk associated with just one project by sharing the costs and time involved among multiple projects. This risk reduction strategy enables investors to have a more diverse investment portfolio in terms of potential cures or vaccines for coronavirus. Thereby sharing both the financial and nonfinancial gains or losses.

Human capital is required in entrepreneurial ventures that require proactive individuals to take initiative in developing business ventures. The type of human capital needed differs from scientific knowledge in

the case of medical technologies to more generalist business knowledge associated with startups. As human capital involves specific skills, it is important that regions encourage individuals with these skill sets to reside there. This can build capacity in certain topic areas and facilitate further entrepreneurial activity. Some regions are known for the industries that are located there, which provides a motivation for individuals interested in those regions to move there. Other regions establish themselves based on specific skill sets of people residing in the area that are suited to specific occupations. This includes areas that have a high level of engineers or scientists. Thus, entrepreneurship-specific human capital needs to be considered based on the regional and industry context depending on the severity of the coronavirus. Cutting edge research institutions encourage entrepreneurship through breakthrough innovations. In order to bring about societal change there needs to be major innovations that change the status quo. This helps drive competitiveness by introducing improved products, services, or processes.

Research institutions enable science and education to transform current ways of thinking. They also provide ways for individuals to learn about new practices that has flow on effects to other sectors of the economy. This means it is important to foster the knowledge-practice association that is made possible by research institutions. The investment that governments place on research institutions also has positive flow on effects in other areas of society. This includes new inventions being made that have commercial potential. Due to the increased emphasis on the knowledge economy, it is important that research institutions are given priority in government funding coronavirus schemes. In addition, more research institutions are becoming self-funded due to a need to diversify their income sources. This enables less reliance on government funding and more emphasis on business partnerships.

Lead users of innovations are entities that are among the first to try new products, services, or processes. These first adopters help to test an innovation by providing necessary feedback. This helps encourage related innovations to take place that enables a platform system to emerge. Being a first-mover in an industry is important and provides a way for entities to gain a reputation for being innovative. Dense social networks among entrepreneurs enable ideas to be circulated more easily. This fosters information acquisition that is important in a knowledge economy. Obtaining access to relevant information in a timely basis is useful for competitive reasons. Therefore, entrepreneurs who continually engage in networking activities can help encourage further entrepreneurship. This means it is important to have events that enable entrepreneurs to interact with each other. By providing relevant social forums, it can speed up the innovation process. As innovation can be the result of both planned and unplanned activities, it helps to have continual networking activity. This will foster by chance occurrences to happen among entrepreneurs. Thereby paving the way for more focus on proactive activities that involve innovation. Cultural orientations refer to the way entities want to learn about historical events or societal conditions. This is useful in promoting a sense of inquisitiveness among individuals in a community.

In an ecosystem, there needs to be a diverse range of entities co-existing in order for it to work properly. This includes a variety of industries that may or may not be complementary. In most successful ecosystems, there tends to be one dominant industry that has influenced its development. Normally, the technology industry is referred to as being the originator of entrepreneurship but other industries such as manufacturing can also induce entrepreneurship needed to cope with the coronavirus. For this reason, ecosystems should also have industries at different development stages in order to create a more entrepreneurial environment. This includes historically necessary industries such as banking and finance as well as new funding sources such as crowdsourcing. This will enable older businesses to co-exist with newer forms of business. As it may take some time for new businesses to gain momentum in the market, it helps to be patient with their development regarding coronavirus. Although there is a stereotype of entrepreneurial ventures launching quickly, in reality it can take time for them to grow. This is due to the businesses having different objectives in terms of growth strategy. While most entrepreneurs are motivated by financial reasons, there can also be social or environmental reasons.

Ecosystems can be measured in terms of their connectivity, density, diversity, and fluidity (Nambisan & Baron, 2013). Connectivity means how well linked are different entities in an ecosystem. Some entities might communicate on a frequent basis but this needs to also be analyzed in terms of performance results. If the connection results in a good outcome, then it is likely to be referred to in a good way. This means the quality versus the quantity of the communication should be assessed. Density refers to how many entities are part of the ecosystem environment. In a highly dense ecosystem, there are many different entities that are constantly engaged in entrepreneurship. This results in an economy of scale and can produce more entrepreneurial business ventures. Diversity refers to the different types of entities in an ecosystem. Diversity can be measured in terms of size such as micro, small, medium, and large businesses, or alternatively different industry structures such as technology or retail. Other ways to define diversity include ethnicity or country of origin. More diverse entities in an ecosystem are likely to be considered as necessary for entrepreneurship. This is due to different views and ways of conducting entrepreneurship becoming apparent. Fluidity refers to the flow of entrepreneurship in an ecosystem. In well-functioning ecosystems, there is a continual flow of information and knowledge. This helps to create a productive environment for entrepreneurship.

#### 4 | CORONAVIRUS AND INTERNATIONAL BUSINESS

Coronavirus has significantly affected international business particularly in terms of free movement across countries so taking an entrepreneurial ecosystem approach is useful. Regional trading blocs including the European Union, which were based on the idea of free movement between countries has changed due to individual countries closing their borders. Most notably countries like Spain have banned

travel between their neighboring countries while at the same time maintaining European Union membership. Due to increased levels of internationalization because of both work, family and lifestyle reasons, the impact of these closed borders has been significant. Global society has become used to frequent international travel and interaction so border closures have been a surprising development. As a result, international institutions have had to deal with the pandemic at a country, regional, and international manner. As international business and travel have been assumed to continue regardless of social change, the health pandemic has surprised many people. Social interaction in a physical format is important for building a more cohesive international society. Thus, the limitations placed on travel as a result of the virus have led to a de-internationalization strategy for many countries. In addition to the large decrease in international travel has been the associated economic and political effects. Blame is being placed on governments for how they have dealt with the crises, which is further fuelling international tensions. Due to the infectious nature of the disease, there has been a ban in many countries on mass gatherings. As global society is largely networked, there has been further effects on business activity. The sport industry is one of the most effected by the restrictions put in place because of the virus. Almost all professional sport events including the Olympics were cancelled due to the virus.

The efforts to make travel effortless across geographic borders have been put at risk due to the virus. In a time when there has been unprecedented international travel, the travel restrictions have profoundly affected individuals. Particularly for international students, this has been an area of concern as they have faced economic and social hardships. For many individuals, their economic and social life has been brought to a standstill because of the restrictions from the virus. Some countries have stay-at-home orders in place, which have severely restricted movement. In addition, there are expected to be high economic, psychological, and social costs associated with the physical distancing restrictions. In order to soften the impact of the virus, governments have provided cash payments and income protection plans to those in need. However, many areas of the economy such as the informal sector are not eligible for government support. This has increased the income inequality and associated economic effects for certain segments of society.

Entrepreneurs are agents of change and provide a source of hope for many. In order to spur economic activity, entrepreneurs are needed as they come up with solutions to market problems. There are indirect effects from the crisis including export and import delays, which is affecting global trade. Coronavirus has resulted in more stress and tensions in the international business environment. The stress has come from the changes needed to stay competitive while at the same time protecting individual health. Businesses have had to change their models to an online format in order to access customers. For many businesses based on traditional face to face interaction, this has required a change in current business practices. Some more entrepreneurial businesses have been able to transform more quickly than others as a result of environmental changes. The reason for this is the desire of the business leaders to stay in the marketplace while

respecting required regulations. This has caused much tension among businesses due to the need to change quickly. Entrepreneurs by definition thrive from uncertainty; however, the covid-19 pandemic has resulted in a large amount of uncertainty from a variety of sources. This means there is still uncertainty about whether future changes are required or if the changes made are adequate. In the past, most entrepreneurship was based on market uncertainty but the current pandemic includes market, health, and social uncertainty. This combination requires strong leadership about the changes needed by business.

Coronavirus is a zoonotic disease, which means it originated in animals then spread to humans. There is a high degree of uncertainty surrounding the origins of the disease that is causing increased tension in the world. The lack of knowledge about how to potentially find a cure or vaccine is leading to further stress. As people are spending greater amounts of time online it has changed the way businesses market their services. Social media and in particularly online communities are a way that businesses are connecting with their customers. People now have more time to spend on artistic or creative ventures so they are establishing social media pages. The large amount of people previously in socially interactive positions such as baristas, tourism operators, and musicians now need to find another social outlet. Online communities and forums have flourished as a safe way of interacting with other individuals. In addition, new types of products such as facemasks are being made to cater for changing societal needs.

Initially, the effects of the virus were dismissed by global political leaders due to mistaken belief in its impact (Gosling, Scott, & Hall, 2020). The lockdown measures in Wuhan, China were expected to be sufficient to health the spread of the virus. This did not occur due to global travel carrying the virus to other parts of the world. In addition, mass public gatherings including sport and music events further spread the virus. Due to the role of community transmission played in the increased number of individuals with the virus, social distancing policies were put in place. Due to the lack of medical technology to treat the virus, other interventions including home isolation and quarantine began. The severity of these restrictions differed depending on the geographic location of an individual. Countries like Australia closed its borders to non-residents and instigated a mandatory two-week hotel stay for all new arrivals in the country. In addition, state borders in Australia were closed in order to further restrict travel and contain the virus. These closures were unprecedented as never before have the borders between states in Australia been shut. This resulted in simultaneous state and federal government policies regarding the virus.

With many countries imposing travel bans, economic activity weakened due to the uncertainty in the business environment. The virus closed most tourism and hospitality places including hotels, restaurants, and pubs. This is in contrast to previous media attention on overtourism and saturation of the tourism market. Within a couple of months from when the virus first originated, there has been an unprecedented shut down of many sectors of the economy. The flow on effects particularly to the informal economy has also been

profound. This has meant the food industry instead of offering on site services have had to switch to offering take away services. This affected their supply chain in terms of the types of products and services they provided.

## 5 | CONCLUSION

An alternative possibility is that overall entrepreneurial activity in the global economy may not be adversely affected by coronavirus. This is likely not to be true due to the profound way coronavirus has changed societal structures. Although the nature of entrepreneurship as a result of coronavirus may undergo a fundamental change with more entrepreneurial thinking required to meet society needs. For this reason, it is important that entrepreneurs design their ventures with safety and security in mind. This will enable a number of ventures to be started that address consumers concerns about the health crisis. Part of this change requires asking if the entrepreneurship is actually different to pre-coronavirus forms or is the same. This will enable a better understanding about how pandemics affect entrepreneurship and the ability of entrepreneurs to cope with multiple pressures. Unlike other crises, the coronavirus crisis has resulted in entrepreneurs being able to respond quickly to multiple needs. Thus, an important issue for entrepreneurs is whether consumer's concerns about the pandemic will lead to more entrepreneurship based on safety and security thereby creating a need for further innovative activity.

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### REFERENCES

- Acs, Z., Szerb, L., & Autio, E. (2014). *Global entrepreneurship index*. Springer, Heidelberg: The GEDI Institute, Amazon.
- Audretsch, D., Cunningham, J., Kuratko, D., Lehmann, E., & Menter, M. (2019). Entrepreneurial ecosystems: Economic, technological and societal impacts. *The Journal of Technology Transfer*, 44, 313–325.
- Bogle, J. C., & Sullivan, R. N. (2009). Markets in crisis. *Financial Analysts Journal*, 65(1), 17–24.
- Cortez, R., & Johnston, W. (2020). The coronavirus crisis in B2B settings: Crisis uniqueness and managerial implications based on social exchange theory. *Industrial Marketing Management*, 88(1), 125–135.
- Doern, R., Williams, N., & Vorley, T. (2019). Special issue on entrepreneurship and crises: Business as usual? An introduction and review of the literature. *Entrepreneurship and Regional Development*, 31(5–6), 400–412.
- Gosling, S., Scott, D., & Hall, C. (2020). Pandemics, tourism and global change: A rapid assessment of COVID-19. *Journal of Sustainable Tourism*, 1, 1–20.
- Grewal, R., & Tansuhaj, P. (2001). Building organizational capabilities for managing the economic crisis: The role of market orientation and strategic flexibility. *Journal of Marketing*, 65(2), 67–80.
- Kuckertz, A., Brändle, L., Gaudig, A., Hinderer, S., Reyes, C. A. M., Prochotta, A., & Berger, E. S. (2020). Startups in times of crisis—a rapid response to the COVID-19 pandemic. *Journal of Business Venturing Insights*, e00169.1.
- Liguori, E., & Winkler, C. (2020). From offline to online: Challenges and opportunities for entrepreneurship education following the COVID-19 pandemic. *Entrepreneurship Education and Pedagogy*.
- Moore, J. (1993). Predators and prey - A new ecology of competition. *Harvard Business Review*, 71(3), 75–86.
- Nambisan, S., & Baron, R. (2013). Entrepreneurship in innovation ecosystems: Entrepreneurs self-regulatory processes and their implications for new venture success. *Entrepreneurship: Theory and Practice*, 37(5), 1071–1097.
- Parnell, D., Widdop, P., Bond, A., & Wilson, R. (2020). Covid-19, networks and sport. *Managing Sport and Leisure*.
- Qian, H. (2018). Knowledge-based regional economic development: A synthetic review of knowledge spillovers, entrepreneurship and entrepreneurial ecosystems. *Economic Development Quarterly*, 32(2), 163–176.
- Roundy, P. T. (2019). Regional differences in impact investment: A theory of impact investing ecosystems. *Social Responsibility Journal*, 16(4), 467–485.
- Smith, T., & Smith, R. (2015). *Elements of ecology*. Essex, England: Pearson Publishers.
- Sussan, F., & Acs, Z. (2017). The digital entrepreneurial ecosystem. *Small Business Economics*, 49, 55–73.
- Williams, T. A., Gruber, D. A., Sutcliffe, K. M., Shepherd, D. A., & Zhao, E. Y. (2017). Organizational response to adversity: Fusing crisis management and resilience research streams. *Academy of Management Annals*, 11(2), 733–769.
- World Health Organization (2020) *Who, Coronavirus disease (COVID-19) outbreak*, Retrieved from [www.who.int/emergencies/diseases/novel-coronavirus-2019](http://www.who.int/emergencies/diseases/novel-coronavirus-2019)

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