


# Chapter 7

## Using Collective Creativity and Industry 4.0 Technology to Reduce the Negative Impact of a Pandemic on Entrepreneurs

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### **ABSTRACT**

*Across many domains, research has shown that a gap in knowledge exists on exploring the relationship between concepts such as collective creativity combined with the fourth industrial revolution. Furthermore, limited conceptual knowledge of how they may aid entrepreneurs when faced with a crisis of disruption trade due to external forces such as a pandemic. The primary objective of this study is to explain how collective creativity and Industry 4.0 technology can be used to reduce the negative effects of COVID-19 on local entrepreneurial enterprises by developing a framework of preparedness. A qualitative study, based on one-on-one interviews pertaining to local entrepreneurs located in Gauteng, South Africa. The results of the primary study and conclusion are yet to be established.*

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## **INTRODUCTION**

We live in a world that demands us to react quickly to continuous changes that are unpredictable and unfamiliar. These continuous changes have often not been experienced before and fall outside our control and experience, which makes them challenging to understand and manage. COVID-19 caught us off guard and manifested itself as a wicked problem. A wicked problem, according to Rittel and Webber (1973) cited in Wahl (2017), is a unique problem, has no clear problem definition, cannot be completely solved due to multiple stakeholders with conflicting agendas, is multi-causal multi-scalar and interconnected, and every solution takes time to evaluate. COVID-19 is a wicked problem.

COVID-19 is an infectious disease caused by a new coronavirus discovered after an outbreak in Wuhan, China, in December 2019 (Ghinai, McPherson, Hunter, Rking, Christiansen, Joshi, Rubin, Morales-Estrada, Black, Pacilli, Fricchione, Chugh, & Walblay, 2020). As of 11 February 2020 (Ghinai et al., 2020), severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has been confirmed as the causative virus of COVID-19. This name was chosen because the virus is genetically related to the coronavirus responsible for the SARS outbreak of 2003.

Infectious diseases were identified as one of the top 10 global risks for the next 10 years, according to the 2020 Global Risks Report (World Economic Forum, 2020). According to the 2020 Global Risks Report (World Economic Forum, 2020:12), health care systems are becoming “unfit for purpose”. The world has seen an increase in the frequency of epidemics as the number of outbreaks and the kinds of diseases have both increased significantly since 1980 (Ordway, & Sokol, 2016). Progress against epidemics and pandemics is undermined by vaccine hesitancy and drug resistance, making it increasingly difficult to find vaccines (World Economic Forum, 2020).

Intermountain Healthcare (2020) defines an epidemic as a disease that affects people on a large scale within a region or community. A pandemic on the other hand is an epidemic spreading over multiple continents due to globalization, urbanization and climate change, with severe economic, social and environmental consequences (Intermountain Healthcare, 2020). COVID-19 has been declared a pandemic and from the experiences of past pandemics, it is highly probable and already evident that it has a devastating effect on the global economy (Healthline, 2020) and the global psychological well-being of people.

The COVID-19 pandemic in South Africa is harming businesses (De Lange, 2020), especially local small businesses due to social distancing measures and lockdown limiting movements. Little research has been done on how a pandemic like COVID-19 impacts small businesses in Johannesburg, South Africa. Little evidence has also been found of research that has been done to explore how collective creativity and Industry 4.0 technology would help to soften the negative impacts of the current and future pandemics on entrepreneurs.

The authors qualitatively summarized evidence on the topic using informal and subjective methods to collect and interpret studies and secondary data. The aim was to use recent sources for the discussions and recommendations. The focus on using collective creativity and Industry 4.0 technology to manage the impact of pandemics on entrepreneurs seems to be relatively new as a research focus area and this was tested qualitatively with entrepreneurs in South Africa using Zoom interviews.

The objectives of this chapter are to explore the Small Medium Enterprises (SMEs) landscape and the challenges faced by entrepreneurs and their small businesses, specifically during COVID-19. The use of collective creativity and technologies from Industry 4.0 is then described to see how these can be utilized to prepare and manage a crisis event and to explore other opinions and suggestions to increase the preparedness of entrepreneurs, which can be used as a guide in future.

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