



COVID-19, Technology and Marketing

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1.1 INTRODUCTION

The COVID-19 pandemic has impacted society very quickly and forever changed how we perceive and use technology (Cankurtaran & Beverland, 2020). Part of the reason for this change has been the emphasis on digital communication that has enabled individuals to continue to communicate despite social distancing and lockdown requirements. The aim of this book is to focus on the technology and marketing aspects of the COVID-19 pandemic. This enables new ways of understanding societal impacts of the COVID-19 pandemic in terms of both business and economic concerns. As much of the current research and practice has focused on trying to find a vaccine or medical cure for the disease it is important that research also considers the business perspective.

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There have been a number of changes resulting from COVID-19 most of them relating to the way people live (Kraus et al., 2020). Individuals are adapting to the new conditions by altering their lifestyles. The change that has taken place is referred to as the new normal with the word new meaning that different behavioural patterns are required. This means working from home has become common with online meetings preferred (Ratten & Jones, 2020).

At the moment there is limited data available about COVID-19 that may lead to an imperfect understanding about its effect (Jamal & Budke, 2020). Some critical issues that need to be considered include the following: (1) are all consumers affected the same way by COVID-19 marketing? (2) is COVID-19 marketing dependent on context or are there different socio-demographics influencing perceptions? This book seeks to answer these questions by focusing on different issues related to COVID-19, marketing and technology. The idea for this book derived from the editor's interest in how COVID-19 was changing technology and marketing practices. We chose the title 'COVID-19, marketing and technology' to provoke interest in the topic and also to highlight the impact COVID-19 has had on society. The title emphasises that much of the disruptive change in a business setting has been from a technology and marketing perspective.

Some of the chapters in this book draw upon the existing body of research on COVID-19 that is constantly being updated. There are new research articles and reports being produced daily on the COVID-19 crisis that makes it hard to keep up to date with the changes. This book focuses on new aspects and perspectives of COVID-19 in terms of technology and marketing innovation. This means it is different to much of the existing research on COVID-19 that focuses on facts and statistics as it delves into more business practice aspects. Thereby offering a fresh view on how COVID-19 has forever changed business due to a need to embed digital marketing practices. The impact COVID-19 has had on marketing has already drawn the attention of society but from an academic standpoint there is limited existing studies on the topic (Heyden et al., 2020). This means that this book provides a timely view as to how business has changed. In addition, this book addresses the lack of research specifically on COVID-19 by providing insights into technology issues that have not been previously addressed in sufficient detail. Although the use of digital technology has skyrocketed in the COVID-19 crisis, many issues and questions remain as to how this has affected business. To date, much of

the focus on COVID-19 has been on data analytics in order to understand its impact (Hall et al., 2020).

This edited collection of studies on COVID-19 is of considerable importance because of the way COVID-19 has impacted marketing and technology. There is a need for research on COVID-19 to incorporate business experiences rather than relying solely on data analytics (Alon et al., 2020). Ignoring the impact COVID-19 has had on business is without merit. The various chapters in this book highlight not only the progress in research on COVID-19 but also emerging issues that need to be addressed. This includes the positive and negative impacts of COVID-19 on business. Therefore, whilst it is important to stress the technology and marketing implications there are other issues that need more attention. This involves the social impact COVID-19 has had on society and the increased level of inequality.

This book includes original contributions that draw upon research findings. Each chapter looks at a different aspect of COVID-19 that helps to provide a coherent overview. Within each chapter a variety of scholarly disciplines are represented including economics and business, but most have an orientation towards technology and marketing. This means that the contributions in this edited book draw on different theoretical perspectives that provides a holistic overview of COVID-19.

This book presents an overview of COVID-19 as it applies to technology and marketing. The results of this book suggest three main findings: (1) technology and marketing implications need to be incorporated more into COVID-19 research, (2) marketing managers need to associate practice with societal conditions and (3) the reasons why technology is used during the COVID-19 crisis can establish new innovative practices. This chapter will examine the reason for taking a marketing and technology perspective on COVID-19. This will lead to an overview of how COVID-19 is likely to impact marketing and how marketing managers need to be prepared. A brief introduction to the role COVID-19 has played in society will be outlined through an analysis of technology and marketing practices. The main challenges related to COVID-19 are stated. By the end of this chapter, readers should be able to integrate a technology and marketing perspective into their thinking about COVID-19. This will enable them to speculate about the future of marketing based on trend extrapolation. By doing so readers will be able to identify likely scenarios faced by marketers as they grapple with the challenges of COVID-19.

1.2 COVID-19 AND HEALTH CRISES MANAGEMENT

COVID-19 is a health pandemic that has had significant economic, political and social ramifications (He & Harris, 2020). Crises add major challenges to society particularly health crises that impact other parts of society. This makes it difficult for decision makers from a political and business level to manage the change. Crises are dangerous due to their unforeseen nature and unknown length. Whilst most crises tend to be managed in a quick and efficient way, there are some that make it difficult for all parts of society to adapt. The current COVID-19 crisis has resulted in human and economic losses on a scale not seen before (Kirk & Rifkin, 2020). This has resulted in an urgent need to derive new innovative solutions to the change (Roper & Turner, 2020). As crises present a form of disruption some members of society handle the change better than others. This has led to an inequality gap between rich and poor members of society. Those individuals and entities with stored resources in the form of finance or capital can utilise them in times of crises. This provides a safety net that helps them deal with market uncertainty. For those less fortunate and without savings it can be difficult to adjust to new market conditions. In addition, as the role of the government has been outsourced in many societies it further fuels the inequality gap.

Throughout history there have been crises of varying nature including wars and natural disasters. Health crises previously tended to be geographically focused. The COVID-19 pandemic has affected some industries more than others (Salamzadeh & Dana, 2020). The hospitality industry has been significantly negatively affected whilst the online retail industry has been positively affected. The hospitality industry has had to shut down a large proportion of its operation due to social distancing and hygiene requirements. The previous continued growth in hospitality stopped with the COVID-19 pandemic. Whilst some economies have reopened their hospitality providers, the catch up effect is still yet to be seen. This is due to the lost revenues and decreased customer patronage. Given the new rules regarding space restrictions and cleaning, the hospitality industry has had to implement major changes. This has affected their profitability and desirability by consumers in the marketplace. With the need for take away instead of in-house dining experiences during the COVID-19 pandemic the impact of these changes is still yet to be felt. Customers are more hesitant and worried about hospitality services. In addition, unlike products that can be brought and consumed later, services cannot be consumed

at a later date. This means the possibility of catching up by purchasing unused services is not possible. Although pent up demand is likely to see an increase in the consumption rate of services. To survive a crisis of this magnitude government aid is required (Ansell & Boin, 2019). This will enable established businesses to resume their services. To cope with the crisis stations, businesses can increase their marketing efforts (Wenzel et al., 2020).

The global spread of COVID-19 requires governments to take urgent steps in order to prevent further mayhem (Cortez & Johnston, 2020). The steps taken resulted in closure of businesses, schools and facilities in order to decrease the amount of social interaction in society. As the main strategy to stop the spread of COVID-19 is through social distancing, this resulted in major changes to society (Chesbrough, 2020). Due to the lack of medical cures or treatments for COVID-19, non-medical interventions in the form of physical separation from others was preferred (Bacq et al., 2020). This is a change to previous social conduct that emphasised close physical interaction. In the digital era, communication can take place via computing devices but it is not the same as physical contact. The crisis has necessitated the need to find a vaccine or cure for COVID-19. Second and third waves of infection have further extended the need to find both medical and non-medical solutions.

In order for society to recover and rebuild new marketing, technology and entrepreneurship techniques are needed. This will help to mitigate the damage caused by COVID-19. The concept of a crisis is related to an extreme event that is normally unpredictable (Doern et al., 2019). This means a crisis is defined by an event that cannot be explained by normal environmental conditions. This leads to confusion as to how to respond based on current market information. The COVID-19 crisis is different to previous crises as it is still unfolding and has not been fixed. This prolonged nature means there is still uncertainty as to its effect on society.

Unlike previous crises that were limited to a geographic location the COVID-19 crisis has been felt around the world (World Health Organisation, 2020). Developed and developing countries have been affected at the same rate. This unusual position means that developed countries in some cases have had to ask developing countries for help. The quick spread of COVID-19 meant that many businesses were unprepared and did not have time to respond in a proper way. This has resulted in some

businesses not having the liquidity to continue their operations due to changing consumer demands.

The economic impact of the COVID-19 has caused many problems for society due also impacted daily life activities. This is due to the isolation caused by social distancing requirements. As a result, there has also been an increase in mental health initiatives in order to decrease anxiety and depression rates. The stress of the COVID-19 pandemic has fractured society and caused unrepairable harm. The prolonged nature of COVID-19 has caused significant side effects in individuals not getting treated for other diseases. The loss of social interaction due to COVID-19 has caused psychological distress in many individuals.

Entrepreneurs are needed in times of crisis as they provide fresh ideas and insights. This enables opportunities to be pursued and innovation to increase. In times of a crisis it is necessary to develop entrepreneurial competencies in society (Williams et al., 2017). This enables qualities such as resilience to be developed. The term ‘resilience’ has been described as a buzzword due to its popularity in describing behaviour required in times of crisis (Weick & Sutcliffe, 2011). Resilience is associated with the ability of being able to respond to hardship in a positive way. This form of behaviour is needed in crises that involve substantial alterations to daily life. Being able to respond proactively and in a constructive manner is important. Media outlets and politicians have referred to resilience as a personality characteristic needed during the COVID-19 pandemic.

1.3 MARKETING RELATIONSHIPS

One of the biggest changes from the COVID-19 crisis has been the rapid growth of online platforms for communication. This has modified the nature of human activities and enabled real world social relationships to exist in an online format. Advertising is crucial for businesses and embraced as a way of building brand awareness. The increase in digital technology has altered the way businesses advertise. This has meant a move towards digital and social media for marketing communications. Unlike large businesses, small businesses view advertising as an expense rather than a necessity. This is due to a reliance often on a small geographic location and repeat customers. Large businesses on the other hand can focus on international markets and access different types of customers. This is changing with more small businesses becoming aware

of the need for advertising as a revenue and awareness generator. In addition, new marketing techniques offered through social media are made available.

Commitment in marketing relationships is important as it enables a better understanding of mutual dependence. The main facets of commitment are affective, continuance and normative (Allen & Meyer, 1990). Affective commitment is defined as ‘an emotion-based predisposition to maintain and enhance a relationship’ (Viswanathan et al., 2010, 3). This means emotions and psychological connections play an important role in maintaining relationships. Sometimes the emotions might be easy to see in terms of being happy or pleased with the interaction. However, often the emotions are included in more nuanced behaviour that are hard to identify. Whether the emotion is easy or hard to see does not matter as it still plays a big part in the active maintenance of a relationships. This is due to some people not being able to explain their emotions with the emotions being more evident in behaviour.

Continuance commitment is defined as ‘exchanges and side bets that create interdependencies between parties over time’ (Viswanathan et al., 2010, 3). This means over time partners in a relationship act in a way to solidify the partnership. By focusing on mutual needs the relationship is continued. Exchanges may favour the continued interaction between partners due to the time and resources invested in the relationship. Therefore, there are bonding mechanisms in play that make it easier for the partners to stay connected rather than separating. Trust and solidarity are important components of this relationship and enable the partners to overcome potential obstacles. Loyalty is also part of this relationship as it enables the relationship partners to favour each other in market transactions.

Normative commitment is defined as occurring when ‘prescription for how community members should behave toward one another are enforced’ (Viswanathan et al., 2010, 3). This means there are expectations about how partners should behave in a relationship. These expectations might relate to industry standards about interactions in relationships. Relationships management is a key part of any good relationship so it is important that parties in and outside a relationship approve the behaviour and to minimise risk from COVID-19 related complications.

1.4 COVID-19 AND RISK

Although the symptomatology of COVID-19 is established, there still is a lack of medical cure. The concept of risk refers to some kind of potential damage arising from an action. The occurrence of this damage can vary depending on its impact. Risk has a subjective component as it relies on an individual evaluating whether it is likely to occur. In a health situation risk is assessed based on an individual's perception about its occurrence and its consequence on behaviour. This means assessing the level of risk from a health event can be complex particularly if the health issue is a new occurrence. The perception of risk regarding COVID-19 is based on the possibility of it causing damage and the uncertainty of the result. In the context of COVID-19, risk is different depending on one's age and gender. The vulnerability and severity of COVID-19 seems to be correlated with age and gender. This means older adults particularly those 70 years and above are more susceptible to a serious outcome from contracting the disease. In addition, males compared to females appear to be more susceptible to the disease. However, due to the new and ongoing nature of the disease there still is much medical research being conducted on how the disease affects different socio-demographic groups.

The COVID-19 crisis is a sharp shock as it occurred very quickly and has had a big impact on society. It has caused economic changes in terms of how individuals purchase and consume goods but also resulted in a reduced turnover for some businesses. Due to financial changes businesses have had to make rapid decisions about how to spend and save money. The crisis effects on marketing vary strongly between sectors with the tourism and hospitality industry being especially affected. Regions that have had lower rates of COVID-19 infections will most likely to be able to rebound more quickly. Thus, it is useful to reflect on how the COVID-19 crisis has and will affect marketing initiatives. There is a need for more e-commerce assistance for small business as a result of COVID-19 making them sell goods and services online. Online shopping has boomed during the COVID-19 crisis but many small businesses lack the capacity to set up a digital platform. Help in the form of government grants is needed to accelerate the digital transformation of small business. This can help small business elevate their existing online presence by teaching them social media techniques. The digitalisation knowledge will enable small business ownersto connect with customers and suppliers via digital platforms. At

the moment small businesses that fail to have their products online are suffering commercial loss. This is also restricting their customer base.

The COVID-19 crisis is still evolving but its speed in affecting the global community has surprised many people. Previous coronaviruses such as the Avian flu were restricted to specific geographic locations but COVID-19 has spread rapidly around the world. Due to their knowledge about how to handle previous coronaviruses some countries have had more success in limiting the number of people infected with COVID-19. Coronaviruses are a large family of viruses that cause respiratory illnesses. The global scientific community is frantically searching for a medical intervention that can stop the spread of COVID-19. Face masks have become mandatory in many countries as a way to stop the transmission of COVID-19. As COVID-19 is spread through saliva droplets face masks offer a relatively cheap and easy way to limit the number of new infections. People without symptoms are a major source of COVID-19 transmission so it helps if they wear masks. These individuals are asymptomatic individuals and do not know they are carrying the virus. Masks and prevention measures to stop spreading the virus. Cloth masks and disposable masks are worn by many individuals with health care professionals tending to wear the N95 masks that filter 95% of air particles. Many countries require people to wear masks and have guidelines regarding their usage. Mask wearing is viewed as one of the most effective ways to minimise the spread of COVID-19. Making masks mandatory during the early phases of the COVID-19 outbreak has led to lower transmission rates. This has meant wearing masks is considered the new normal. Mask wearing is a preventive measure that is low cost. Some governments have offered free masks to citizens whilst others have encourage the use of handmade cloth masks.

The threat of COVID-19 was underestimated by some governments causing them to be unprepared. The time it took for governments to act on advice about the danger of COVID-19 is a factor in minimising its spread. The economic consequences of the COVID-19 pandemic are derived from the public health responses taken to confront the crisis. Initially the shortage of personal protective equipment and masks led to an increase in the spread of the virus. An unhealthy over dependence on imports for masks caused further harm. COVID-19 as an infectious disease is important to understanding societal development. In the past economic and war forms of crises have received more attention. This is likely to change given the impact COVID-19 has had on the global economy.

Resilience is a concept used to understand exogenous shocks such as crises. Castro and Zermeno (2020, 12) states 'the concept of resilience comes from the Latin word *resiliere*, meaning to bounce'. Crises can be viewed as assemblages of multiple interactive occurrences that change society. In a crisis, entities rely on each other in their attempts to remedy the situation. In other words, the crisis makes people and business aware of their mutual dependence. A crisis needs to be solved by entities working together in a strategic manner so it is important that collaboration is meaningfully encouraged. Consequently, individuals must understand the dynamics of a crisis and the variety of independent roles such as organiser, spectator and problem solver. Research to date agrees that crises cause people to act in different ways. Crisis management studies show that entrepreneurship provides much needed solutions in times of crisis. However, we are yet to fully understand how and why entrepreneurship occurs through value co-creation activities.

Crisis marketing provides firms with an opportunity to use marketing to build relationships with customers, communities and other stakeholders. Firms can choose to view crisis marketing as simply another communications channel through which they can disseminate information. This defender of information approach suggests that whilst marketing can create value it does not take advantage of the opportunities provided through real time information. As propagated by modern relationship marketing techniques, marketing relationships require a network of customers, suppliers and other stakeholders. Therefore, the role of crisis marketing may need to be redefined during a crisis. Stakeholders can manipulate crises marketing through emphasising certain outcomes. This means care needs to be taken in contemplating the trade-offs between a crisis marketing culture that is conservative versus a more modern approach. Conservative crisis marketing emphasises the important role of keeping the status quo in terms of brand image. On the other hand, modern crisis marketing takes a more progressive view in terms of connecting with consumers desire to feel empathy during a crisis. Thus, it is important to shed light on the complex nature of crisis marketing that is difficult in practice to manage. This means cross-functional collaborations might be required in crisis marketing in order to navigate this area. Considerable diversity exists between formal statistical data about COVID-19 and the research evidence about societal impacts. This may be due to a time lag between the crisis occurring and businesses reporting how they have been impacted. The existing literature presents no consensus on how to solve the COVID-19 crisis or the crisis management process. Solutions have focused on real time approaches

with cross-culturally comparing the impact. Research on COVID-19 and marketing has attracted considerable interest but has rarely been evaluated and explored in the technology innovation research arena. In evaluating the COVID-19 crisis, this chapter considers the role marketing plays. It argues that an increased awareness and integration of marketing into COVID-19 studies creates additional value for society through entrepreneurial action.

1.5 COVID-19 AND ENTREPRENEURSHIP

COVID-19 entrepreneurship is a new and significant stream of research. Accordingly, scholars and practitioners are increasingly assessing how entrepreneurs have changed as a result of the COVID-19 crisis. Entrepreneurship in times of crisis has a positive effect on community development (Viswanathan et al., 2014). Nonetheless, the research on this topic is sparse and lacks a proper systemization. Kirby (2004, 511) defines an entrepreneur as ‘someone who undertakes to make things happen, and does’. This means an entrepreneur is a change agent and provides necessary innovation to progress society. Entrepreneurs are involved in entrepreneurship, which is the process of making things happen. Timmons (1989, 1) defined entrepreneurship as ‘the ability to create and build something from practically nothing. It is initiating, doing, achieving, and building an enterprise or organisation, rather than just watching, analysing or describing one’. This means that entrepreneurs emphasise action that results in change. Not all entrepreneurs are the same as they differ in the speed and rate of business development.

Kirby (2004) suggests that the main characteristics of entrepreneurs are a risk taking ability, need for achievement, locus of control, desire for autonomy, deviancy, creativity, opportunism and intuition. Entrepreneurship is associated with the commercialisation and generalisation of new relevant innovations. It also has a social role in creating new jobs and stimulating economic growth. This leads to social benefit for communities living around the business. In the case of for-profit entrepreneurial ventures there are spillover effects in the form of new attention from others with regard to the business activity. This creates social value and can influence the creation of non-profit entrepreneurial ventures. Accordingly, entrepreneurship has both an economic and social impact. COVID-19 entrepreneurship has an extremely relevant social impact in terms of generating social value. This means COVID-19 entrepreneurs

are instrumental game changers for society and give hope to communities. Consequently, COVID-19 entrepreneurship can be used to describe intention venues ventures that include some kind of societal effect (Ratten, 2020c). This means using entrepreneurship as a way to exert a positive influence on society. Thereby facilitating the socialisation of communities through business ventures. The connections made possible through entrepreneurship can foster information exchange and new projects. As the COVID-19 environment represents a new market context business ventures are created to fill market needs. The resulting social value may be created by the COVID-19 related entrepreneurial ventures that emerge during the crisis.

Entrepreneurship involves generating new ideas that add value to society (Ratten, 2014). The concept of entrepreneurship is synonymous with change and innovation. This is because in order to develop new products and services there needs to be an alteration to the status quo. Being resilient is a trait entrepreneurs share and sets them apart from non-entrepreneurs (Marques et al., 2019). In order to address problems caused by crisis situations, a resilient attitude needs to be adopted. This will enable individuals to overcome blockages that prevent them from being successful in implementing change. In order to combat the new way of living due to COVID-19 a resilient attitude is needed (Kuckertz et al., 2020). Entrepreneurs find opportunities in the marketplace that have previously been overlooked. To do this requires resilience in order to pursue market gaps. Entrepreneurs often suffer from stress that causes psychological damage so they need to be resilient (Jones et al., 2018). Being resilient implies a high level of adaptability, which is useful in turbulent situations. Crises can involve constantly changing conditions that make it difficult to make the right decisions. This means entrepreneurs who have a resilient attitude can adapt to change quickly. Resilient entrepreneurs tend to show more tolerance from ambiguity and uncertainty. This helps make them best decisions in crisis situations. In order to adapt to diverse circumstances, entrepreneurs need to learn.

It is possible to outline the main characteristics of COVID-19 entrepreneurs that distinguish them from non-entrepreneurs. Such characteristics are fundamental to building a comprehensive understanding about the nature and personality of a COVID-19 entrepreneur. In detail, COVID-19 entrepreneurs are individuals that make advantage of a crisis in order to introduce innovations into the marketplace (Jeyanathan et al., 2020). This means a COVID-19 entrepreneur is likely to be resilient and

adaptive to market change. Not all entrepreneurs are able to respond in a positive way during a crisis due to the associated change in psychological state. This means that COVID-19 entrepreneurs are able to proactively engage in business activities in times of hardship. This distinguished them from normal entrepreneurs who also are passionate but rely on stable market conditions. COVID-19 entrepreneurs have a mindset that enables them to flourish in times of crisis and to take initiative (Donthu & Gustafsson, 2020). This helps them to identify and source opportunities before other individuals. The ability to forecast market trends is a key feature of COVID-19 entrepreneurs and enables them to navigate the market in a more strategic way. Expertise and willingness to engage in business also helps COVID-19 entrepreneurs.

There are several relevant insights emerging from the development of entrepreneurship due to COVID-19. Firstly, COVID-19 entrepreneurship is related to the willingness to help society in times of need. This means the practising of entrepreneurship is dependent on the passion of an entrepreneur to make a difference to society. Whether this is due to an altruistic need or want for capital gains is debatable. However, there is a change in behaviour in all entrepreneurs in a crisis regardless of their motivation for economic activity. Secondly, the emergence of COVID-19 entrepreneurship needs to be examined in relation to external factors that help or hinder entrepreneurship. Increasingly government initiatives are being used as a way to spark interest in COVID-19 entrepreneurship. This means entrepreneurial opportunities may be built based on the assumption of government funds. This means there needs to be a better understanding about how policies can be used to facilitate COVID-19 entrepreneurship. By doing so it will open up doors to new possibilities. Thirdly, COVID-19 entrepreneurship has a social and societal effect.

1.6 CONTRIBUTIONS OF BOOK TO RESEARCH DEVELOPMENT

The contributions of this book expand our knowledge on disasters and crisis management. It is hoped that this book will be useful to both practitioners and scholars with an interest in COVID-19 marketing and technology but also those in crisis management and international business. We hope that this book will prompt further research into the topic of COVID-19 both in terms of its impact on technology but also usefulness

in providing impetus for further innovation. It is expected that COVID-19 research will evolve from a peripheral area of study into a recognised stream of research. This is due to the continuing nature of COVID-19 but also the distinct business opportunities it presents. Historically, crisis research has been studied in entrepreneurship but more as a side issue rather than as a recognised field. This will change the way COVID-19 has significantly changed society. No longer are crises inconsequential or frivolous as the COVID-19 crisis has shown how much they can change business practices.

The sustained progression of COVID-19 marketing, technology and entrepreneurship research as a field of study depends on the continuity of research scholarship. New research needs to be mindful of potential new pandemics or crises and historical patterns. This will enable broader research streams to emerge that connect COVID-19 scholarship to other areas. In accumulating knowledge future research should show the implications of COVID-19 for emergency and risk management practices. This can enable research to inform practice about crises through trends.

All marketers face some type of uncertainty, but the COVID-19 crisis has led to higher levels of uncertainty. This has been a challenge for marketers and entrepreneurs who need to balance the risk versus rewards for business activity. There has been a reduction in the level of government interaction in society and an emphasis on individual responsibility. This has led to more interest in entrepreneurship due to the way it focuses on self-reliance. The term entrepreneur is often associated with small business due to the focus on self-employment. Whilst not all entrepreneurs are involved in small business, the majority are either directly or indirectly influenced by small business activity.

There has always been an interest in entrepreneurship but more recently it has increased due to the way entrepreneurs are perceived as contributing to society. Entrepreneurs contribute to job creation, which influences other sectors of the economy. In addition, entrepreneurs adjust and/or realign current industry conditions to emerging trends. This helps to contribute to societal wellbeing. Entrepreneurs can be differentiated from non-entrepreneurs due to their determination and perseverance. These personality traits mean that entrepreneurs are orientated towards taking initiative by having a sense of personal responsibility.

1.7 CONTRIBUTION TO LITERATURE ON COVID-19, TECHNOLOGY AND MARKETING

This book contributes to the literature on COVID-19 in three main ways. Firstly, by providing a link between technology and marketing. This is important due to the way COVID-19 has altered society. Social distancing requirements have meant an increased number of individuals are communicating via technological devices. This has enabled individuals to stay in touch with others through digital means. Real time communication is important in the business world so increasingly technological innovations that facilitate this have become important. Due to the prolonged nature of COVID-19 it has been important for consumers and businesses to utilise technology also for marketing reasons. Novel and innovative marketing campaigns have emerged during the COVID-19 crisis. This has provided a sense of entertainment but also facilitated solidarity in society. Digital marketing campaigns have become popular especially ones that are interactive.

Secondly, the chapters collectively help to build a theory of business practice based on the COVID-19 environment. Currently there is no common theoretical framework utilised to understand the effects of COVID-19. This means existing theories developed in other contexts have been used. Whilst in the short term this might be the best approach, in the long term theoretic that take into account changes apparent in the new environment are needed. This would allow us to utilise specific theories to test and compare data. Although existing theories such as the knowledge spillover theory of entrepreneurship can be extended to take into account the COVID-19 context.

Thirdly, we contribute to practice by extrapolating data and research to a real life context. Research on COVID-19 can be utilised to help and inform marketing managers that need to reach new customers. Thus, the suggestions provided in the chapters of this book provide a source of new knowledge. As this chapter discussed, topics such as disaster management in the context of the COVID-19 pandemic need to be further explored. This will enable a better look at challenges from different perspectives. This means that special attention is drawn to how COVID-19 has impacted business activities due to the way COVID-19 is a protracted public health crisis that is affecting the international business environment.

1.8 IMPLICATIONS FOR PRACTICE

Researching the link between COVID-19, marketing and technology makes a significant contribution to practice. Attitudes towards the COVID-19 crisis reflect, to a large extent, subjective perceptions rather than objective conditions. This means regardless of the reality, a strong dependency exists between an individual's fear of the crisis and opportunity perceptions. In fact, perception and hysteria regarding COVID-19 is considered normal especially by those with first hand knowledge about the crisis. Regardless of the current situation, there seems to be a continual sense of uncertainty surrounding the COVID-19 pandemic.

Clearly the reality might differ to these perceptions based on the environmental context. The distortion in perceptions is common in individuals and particularly those facing extreme hardship. This of course does not mean that individuals in times of crisis make wrong or irrational choices as rather they decide on actions that work best for them. An individual may perceive their condition as being suitable given the conditions of others and as a result be more positive.

There are different ways marketers can analyse the effectiveness of campaigns. This includes via predictive analysis that seeks to understand the impact marketing has on behaviour. Part of this process might involve looking at sentiments received from marketing communications. This information can help determine the successfulness of different marketing messages.

1.9 CONCLUSION

The year 2020 will always be remembered for the way COVID-19 impacted society (Ratten, 2020a). The change happened quickly and without much warning. Although there have been previous health crises, the COVID-19 crisis has had a global effect. The initial first wave of infections occurred in March 2020 with the second wave of infections occurring in November 2020 (Ratten, 2020b). Whether there will be a third wave or subsequent wave of infections is still unknown. In November 2020, Pfizer announced good results from their stage three trial of their potential vaccine. As a result, there has been excitement around a potential solution to a global crisis. Whether this vaccine eventuates is still unknown at the time of writing this chapter but governments

around the world have been planning on how to disseminate the potential vaccine. This includes giving the vaccine first to older adults and those with pre-existing health conditions who are more susceptible to the virus.

The chapters in this book advance growing interest in the relationship between COVID-19, technology and marketing. In bringing together contemporary issues on COVID-19, we seek to address questions such as what does the COVID-19 crisis mean for marketing? How does COVID-19 research inform our understanding of marketing in times of crisis? Does a crisis influence the rate of technology innovation? And can marketing and technology research offer a new perspective on the COVID-19 crisis? A vibrant research stream in the COVID-19 literature has been focusing on technology as a means to promote innovative behaviours. The overarching question of this literature is to what extent and under what circumstances does technology impact crisis management. This involves using technology for entrepreneurial learning and the development of new knowledge and skills. In this respect, this chapter explores future research potential on COVID-19 that has currently been overlooked. More specifically, this chapter shows that the association between COVID-19, marketing and technology can be better understood through an entrepreneurial lens. This involves unpacking the way the COVID-19 crisis has accelerated the use of technological innovation. In particular, it finds that technology has had a positive impact on society. Technology augments marketing efforts during the COVID-19 crisis by enabling messages to be disseminated through digital means. This chapter also disentangles the mechanisms through which technology has helped solve problems created by the COVID-19 crisis.

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