Entrepreneurship and Big Data: The Digital Revolution

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BIG DATA FOR INDUSTRY 4.0:
CHALLENGES AND APPLICATIONS

ENTREPRENEURSHIP AND BIG DATA

The Digital Revolution

EDITED BY
MEGHNA CHHABRA
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Entrepreneurship and Big Data

Big Data for Industry 4.0: Challenges and Applications

Series Editors: Sandhya Makkar, K. Martin Sagayam, and Rohail Hassan

Industry 4.0, or the fourth industrial revolution, refers to interconnectivity, automation, and real-time data exchange between machines and processes. There is a tremendous growth in Big Data, from the Internet of Things (IoT) and information services which drives the industry, to the development of new models and distributed tools to handle Big Data. Cutting-edge digital technologies are being harnessed to optimize and automate production including upstream supply-chain processes, warehouse management systems, automated guided vehicles, drones, etc. The ultimate goal of Industry 4.0 is to drive manufacturing or services in a progressive way to be faster, more effective, and more efficient; that can be achieved only by embedding modern-day technology in machines, components, and parts that will transmit real-time data to networked IT systems. These, in turn, apply advanced soft computing paradigms such as machine learning algorithms to run the process automatically without any manual operations.

The new book series will provide readers with an overview of the state-of-the-art in the field of Industry 4.0 and related research advancements. The respective books will identify and discuss new dimensions of both risk factors and success factors, along with performance metrics that can be employed in future research work. The series will also discuss a number of real-time issues, problems, and applications with corresponding solutions and suggestions, sharing new theoretical findings, tools, and techniques for Industry 4.0, and covering both theoretical and application-oriented approaches. The book series will offer a valuable asset for newcomers to the field and practicing professionals alike. The focus is to collate the recent advances in the field, so that undergraduate and postgraduate students, researchers, academicians, and industry people can easily understand the implications and applications of the field.

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Entrepreneurship and Big Data

The Digital Revolution

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Preface

The disruptive potential of Big Data has received growing attention in research and practice over the last few years. Industrial Revolution 4.0 has opened our eyes towards a new chapter of our lives. Currently, all industries are undergoing a form of digital transformation. Companies explore the avenues to walk on technologies and seek paths to increase customers' demand and expectations. The story has moved away from fulfilling customers' needs to creating an impact on their lives and improving well-being. We wake up in the morning to start our day with data consumption and end the day with data consumption. Big Data is around us, and we consume data to make our lives better. This emergence is making it imperative to scrutinize Big Data in relevance to contemporary entrepreneurship. The entrepreneurial ecosystem is changing due to Big Data, and thus it is intervening an impact on everyone's life.

This book's theme revolves around how Big Data in the digital transformation impacts the various facets of entrepreneurship development which is essential for improving our well-being. The book contains insightful chapters on the ecosystem themes for entrepreneurship in the Big Data-driven universe, social entrepreneurship in the era of disruption, and sustainability in the digital world.

The book is ideally designed for entrepreneurs, researchers, business owners, managers, graduate students, and academics seeking current research on Big Data in contemporary entrepreneurship.

Editor Biographies

Meghna Chhabra is Associate Professor (Entrepreneurship & Finance) and Area Chair Entrepreneurship and Small Business Management at Faculty of Management Studies, Manav Rachna International Institute of Research & Studies, Faridabad, Haryana, India. She is also on the boards of the various university-level committees promoting research and consultancy. Dr Meghna has more than 15 years of experience in industry and academia and has worked closely with students for employability training and job placements. She has been running the E-Cell @ FMS. She has various publications in national and international journals to her credit, including two publications in the *Small Enterprises Development, Management and Extension* (*SEDME*) journal promoted by NI-MSME, an organization under the Ministry of the Government of India. She has also conducted the National Science and Technology Entrepreneurship Development Board (NSTEDB), Dept. of Science and Technology, Government of India-sponsored "Entrepreneurship Awareness Camps". Her research interest lies primarily in studying the gender gap in entrepreneurship, women entrepreneurship, and entrepreneurship education. Currently, she is also working on an Indian Council of Social Science and Research (ICSSR) project on "Capacity Building of Women Entrepreneurs". She is also a recipient of a faculty grant for conducting the "Faculty Development Program in Entrepreneurship Development" from the All India Council of Technical Education (AICTE). She is also on the editorial board of the '*International Journal of Technology Transfer and Commercialisation*' (Inderscience Publishers) and the journal '*Management, Innovation and Entrepreneurial Research*'.

Rohail Hassan, PhD, is Senior Lecturer of Corporate Governance and Finance at Othman Yeop Abdullah Graduate School of Business (OYAGSB), Universiti Utara Malaysia. His research interests include corporate governance, women empowerment, gender-related issues, diversity and inclusion, gender diversity, Big Data and analytics, firm performance, and strategy. The main research has been published in leading management journals and top-tier peer-reviewed journals ranked by ABS, including *Journal of Business Research* (3*), *Journal of Management and Organization* (2*), *Journal of Cleaner Production* (2*), *Journal of Intellectual Capital* (2*), *Journal of Islamic Accounting and Business Research* (1*), *Economics Bulletin*, *Sustainability*, *Journal of Risk and Financial Management*, and *International Journal of Financial Studies*). He is currently working as a series editor for the work titled *Big Data for Industry 4.0: Challenges and Applications* from Taylor & Francis Group. Rohail is also serving as an International Editorial Board Member to the

Asia-Pacific Journal of Business Administration and the *Journal of Risk and Financial Management*, and is Editor of Humanities and Social Sciences Reviews and reviewer to several prestigious academic journals such as *Journal of Business Research*, *Journal of Management and Organization* (*JMO*), *International Journal of Finance and Economics* (*IJFE*), *Applied Economics* (incorporating *Applied Financial Economics*), *Sustainability*, and *International Journal of Environmental Research and Public Health*.

Amjad Shamim is currently Program Manager for MBA in Energy Management and Senior Lecturer in Marketing at Universiti Teknologi PETRONAS, Malaysia. He is also Core Researcher at Center of Social Innovation, Institute of Self-Sustainable Building. He holds PhD, MS and MBA in Marketing. He is the recipient of UTP Brand Advocate Award (2020), and Liam Glynn Research Scholarship Award by Service Special Interest Group (AMA-SERVSIG) sponsored by Arizona State University Center for Services Leadership USA (2019). Dr. Amjad has published over 30 articles in reputed international journals such as Journal of Retailing and Consumer Services, International Journal of Hospitality Management, Journal of Consumer Marketing, International Journal of Retail & Distribution Management, Asia Pacific Journal of Marketing and Logistics, Journal of Islamic Marketing, Journal of Entrepreneurship in Emerging Economies, Frontiers in Psychology, Entertainment Computing, Environmental Science and Pollution Research, and IEEE Access among others. In addition, he has received Seven research grants amounting to USD 84,000 from national and international funding bodies. His research projects are in the areas of value co-creation practice in oil and gas industry, value-in-experience model for retailing, neuromarketing approach for online business and service-dominant logic application in services sector. His research interests are in the areas of value co-creation, service-dominant logic, service thinking, service inclusion, brand experience, and neuromarketing.

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1 Ecosystem for Entrepreneurship in a Big Data-Driven Universe

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INTRODUCTION

The term "entrepreneurship" was first used in the Middle Ages, when "the entrepreneur was someone who performs tasks in projects like buildings, construction, and the likes by using all the resources he had". However, the word entrepreneur gained its present form in the 17th century, as Cantillon described it "as a person responsible for undertaking a business venture" (Entrepreneurship and Big Data, 2019). According to a note by the UNCTAD secretariat (2011), the ability and propensity of an enterprise to innovate not only depends on its access to knowledge from research institutes or technology services centers but also many other factors, including access to finance; access to human resources; adequate basic physical infrastructure; firm-level capabilities (design, operation, maintenance, managerial); inter-firm linkages and collaboration and partnerships in R&D among academic and commercial entities; general business services; and demand conditions.

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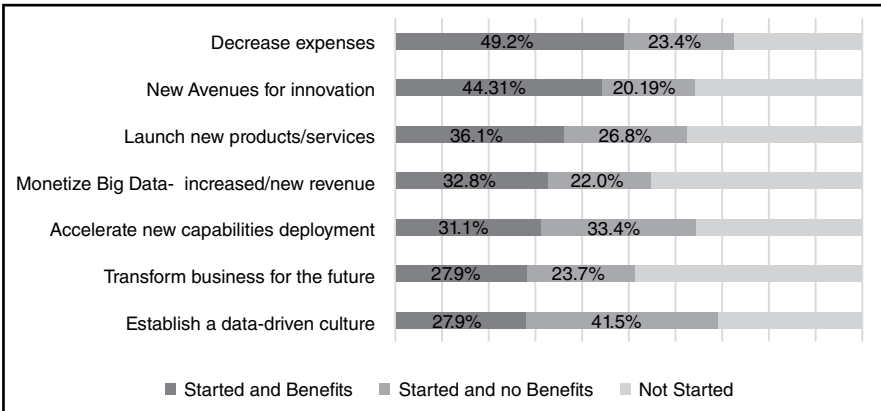
ROLE OF BIG DATA

Earlier, Big Data was considered a problem, but it became a boon for entrepreneurs with the advent of new technologies. One could find its reach in each corner of the business arena in one way or another, directly or indirectly. Whether it is text messages, pictures, videos, blogs, reports, multimedia content, digital traces, swipes on different sites, reading preferences on mobile, time spent on each page, omitted portions, likes on social media, or anything related produce Big Data and this data is under the scanner of data analysts to generate useful information out of this. Big Data as a lucrative entrepreneurial option has gone beyond the boundaries of internet-related establishments. In Japan, data generated through geo-coded maps of agricultural fields and the real-time monitoring of every activity from seeding, watering, fertilizing, and, some experts estimate, harvesting to improve yields around USD 100 per acre in increased profit (OECD, 2014). New York-based start-up Muze has introduced a new mobile app on iOS that provides users the facilities, besides adding texts, to pin their pictures or Graphics Interchange Format (GIFs), in and out zooming the text and draw on message board using multiple sizes and colors of pens (Perez, 2020). In business, Google and Facebook are highly data-driven firms that opted for AI at a very early stage and got the market advantage of embracing AI (Prüfer & Prüfer, 2020).

"Big Data" is often used as a synonym for customer analytics, real-time analytics, or predictive analytics (Lochy, 2017). Worldwide, Big Data market revenues for software and services are projected to increase from $42 billion in 2018 to $103 billion in 2027, attaining a Compound Annual Growth Rate (CAGR) of 10.48% (Columbus, 2018). According to NewVantage Venture Partners, Big Data delivers the most value to enterprises by decreasing expenses (49.2%) and creating new avenues for innovation and disruption (44.3%) Figure 1.1.

EMERGING TECHNOLOGIES

Whereas the human brain can manage two to three dimensions of information, algorithms allow for hundreds of dimensions. Thus, data science could extract meaningful information from the association, classification, and data clusters (Prüfer & Prüfer, 2020). According to blogs, with on an average more than 40,000 searches on Google every second, i.e. 3.5 billion searches per day, 2.5 quintillion bytes of data were created each day in 2018. This pace is only increasing by leaps and bounds with the development of the Internet of Things (IoT) (Marr, 2018). At present, during 2020, 1.7 MB of data is created every second by every person (Bulao, 2020). The need for advanced versions of present time technologies will always be felt for processing and analyzing these ever-increasing data. The Internet of Things (IoT) is the talk of the town nowadays. With smart sensors and their wireless connectivity, much data are gathered and analyzed. The global audit and consulting company Deloitte's state-of-the-art, IoT-powered office, "The Edge Amsterdam," is equipped with 28,000 sensors that send data to be analyzed to increase the building's efficiency (Khvoynitskaya, 2018). The sensors track all of the employees' movements and activities and indicate to them the unoccupied places in meeting rooms. Another



Big Data business initiatives underway; with successful results	Started	Success
Decrease expenses through operational cost efficiencies	72.6%	49.2%
Establish a data-driven culture	69.4%	27.9%
Create new avenues for innovation and disruption	64.5%	44.3%
Accelerate the speed with which new capabilities and services are deployed	64.5%	31.1%
Launch new product and service offerings	62.9%	36.1%
Monetize Big Data through increased revenues and new revenue sources	54.8%	32.8%
Transform and reposition your business for the future	51.6%	27.9%

FIGURE 1.1 Big Data Initiatives and success rate. *Source*: Big Data Executive Survey (2017), reported by Columbus (2018).

application adjusts the temperature, humidity, and CO_2 concentration to maintain a comfortable environment for employees, resulting in increased staff members' increased efficiency. Another revolutionary breakthrough is Artificial Intelligence (AI) which, according to Jens Prüfer and Patricia Prüfer (2020), "is a concept, in which machines mimic cognitive functions of learning and problem solving". Unlike the "Industrial Revolution," when the main drivers were coal and steam, the present "second machine age" is driven by data and artificial intelligence (Obschonka & Audretsch, 2019; Di Vaio et al., 2020). The spread of AI could be assessed with a report of *The Economist* according to which a factory in Southern England "OCADO" better known as Custom Fulfilment Centre (CFC), uses a unique grid system, "The Hive" where 700 robots assemble customers' orders. They work on an air traffic control system fulfilling 65,000 customers every day and giving tough competition to leading online grocery outlet Amazon. It was made possible with the help of artificial intelligence and automation. The sources, individuals related to machine-based intelligence, and entrepreneurial research processes should be focused upon for augmentation of Big Data and AI (Obschonka & Audretsch, 2019). An advertisement for HG Hector, the four-wheeler SUV, says, "It is a Human Thing", the reason being that Alexa with human-like capabilities is incorporated in the vehicle that gives directions and suggestions (just like a living person) throughout the journey. The robotic workforce will soon become the new norm. The importance of robots can be surmised because XYZ Robotics raises $17 million for its

pick-and-place logistics robots (Heater, 2020). Drones have already started working in the field of delivery. Keeping in view the wide range of the drone's commercial prospects, a market rise of more than five times is estimated in the next five years (from $5.2 billion in 2016 to $27.1 billion in 2021; Fatbit.com, n.d.). The latest in this series is neurotechnologies, i.e., the use of technology in monitoring body functions. Mind-controlled robots are one of its examples. Virtual and Augmented Reality, wearable technology, Edge computing, Blockchain (a decentralized, distributed, and public digital ledger consisting of records called blocks that is used to record transactions across many computers so that if any involved block is altered, all subsequent blocks would be altered (Wikipedia). No code development platform also falls in this category. Personalized wealth management advice is provided to the customers regarding their policies based on customers' financial and personal details and status. Besides, there are digital assistants (as with Disha on the IRCTC website of Indian railways), cashless payments (through PayPal, Paytm, MobiKwik, and Bitcoin), hybrid wireless technologies, deep learning, automated software, video search optimization (tracking locations, tracking the uncertainty of nature), and many more technologies that help in using Big Data for the entrepreneurship purposes. A study by Microsoft's IoT Signals indicated that "one-third of IoT projects are abandoned after the proof of concept stage". What are the factors that lead to the failure of such projects that are worth discussing? As Big Data is something different from the traditional way of obtaining the final output, the challenges must be treated differently. Researchers have considered many factors that hinder the growth rate of new ventures. Some of the studies citing these challenges are given in Table 1.1.

TABLE 1.1
Challenges faced by entrepreneurs in Big Data universe

Challenges	Authors
Security and privacy, dynamic provisioning, algorithms, Misuse of Big Data, data management	Alam et al. (2014)
Data storage, data transmission, data management, data processing, data visualization, data analysis, integration, architecture, security, privacy, quality	Yang et al. (2017)
Knowledge discovery and computational complexities; scalability and visualization of data; and information security.	Acharjyaa and Ahmed (2016)
Data – storage, quality, security and privacy, service delivery and billing, interoperability and portability, reliability and availability, performance and bandwidth cost	Balachandran et al. (2017)
Big Data professionals, interactiveness, loading, and synchronization, visualization	Wani and Suraiya (2018)
Data challenges, process challenges, management challenges	Sivarajah et al. (2017)
Privacy and security, data access and sharing of information, human resources and manpower, quality of data	Satyanarayana (2015)
Data growth, data infrastructure, data governance/policy, data integration, data velocity, data variety, data compliance/regulation, data visualization	Khan et al. (2014)

RESEARCH METHODOLOGY

This study is exploratory research and used primary and secondary data to analyze the ecosystem for entrepreneurship for Big Data. For designing the research problem, the authors used the existing resources available on the subject matter; afterward, primary research tools are employed to synthesize the proposed model (Figure 1.3). The research was conducted in two phases: identifying the problem, and proposing a conceptual model for understanding the ecosystem based on qualitative analysis of the data gathered through focus group discussions (FGDs) and informal interviews. A structured approach was applied for gathering primary data for the study. To begin with, a two-panel of a total of ten experts was formed for conducting two FGDs. The six academic experts were invited from private and public HEIs having sufficient experience in entrepreneurship. Apart from academic experts, the group had representation from industry also. Two experts from the computing industry at the senior level were part of these FGDs. Two students working on a technology-based start-up at an academic incubation center have also participated actively in the discussions. Both the FGDs were conducted online because of the lockdown imposed by the government to restrict the COVID-19 pandemic. Both authors acted as moderators in each discussion.

PROPOSED FRAMEWORK

As the data is huge and complex, the processing of these data is not an easy job, significantly when the tools used for analyzing are not updated. They also increase the cost and time taken to process, thus, always lagging behind the schedule. With the help of emerging newer technologies, this work could be performed better at a fast pace, almost in a real-time process.

In the OECD synthesis report 2014, the key players in the Big Data ecosystem are given, as shown in Figure 1.2.

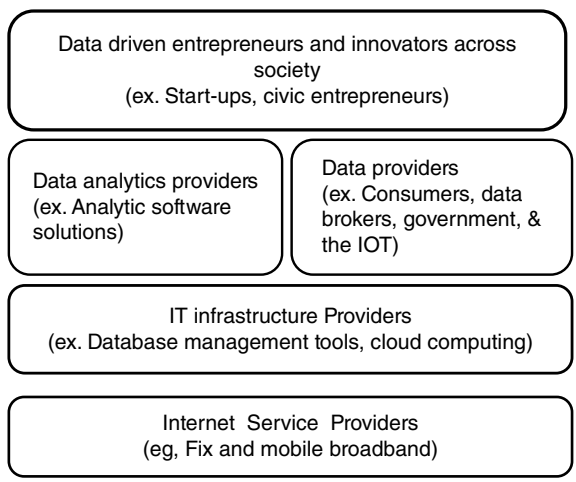


FIGURE 1.2 Key players of Big Data ecosystem (OECD, 2014).

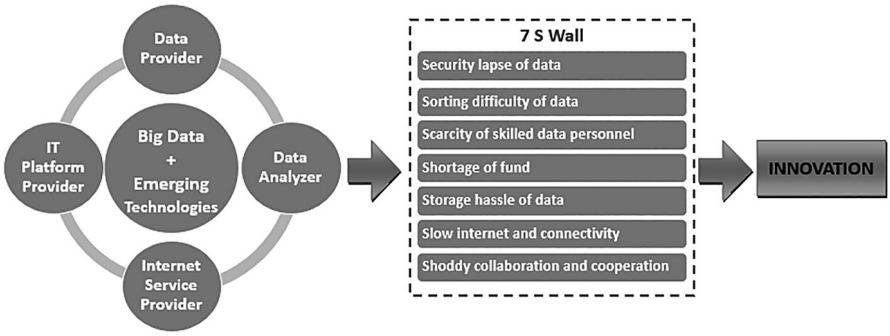


FIGURE 1.3 Entrepreneur Ecosystem in Big Data-Driven Universe.

Based on these factors and expanding this view, a framework is proposed where Big Data and emerging technologies (like the Internet of Things, artificial intelligence, etc.) work hand in hand. These two are the essential ingredients for digital entrepreneurs. The proposed framework presents the entrepreneurial ecosystem and the factors that need to be focused on or improved upon to allow entrepreneurs to achieve their desired goals.

Digital entrepreneurship is driven by data providers, data analyzers, internet providers, and IT infrastructure providers. There is a hindrance in the form of a 7-S wall that is to be taken care of before the launch of an innovation. These 7-S are: security lapse of data, sorting difficulty of data, storage hassle of data, scarcity of skilled personnel, shortage of funds, slow internet & connectivity, and shoddy collaboration & cooperation.

IDENTIFYING CHALLENGES

According to IoT expert Sandra Khvoynitskaya (2018), the most common IoT challenges are "technical unpreparedness, budget shortages, and skill gap". These challenges are a part of emerging technologies, and it is hoped they will disappear as soon as the IoT system improves. We have classified the challenges into seven categories (7-S) that are impediments to Big Data implementation.

1. *Security lapse of data*: Data is the key element in an innovative system. When the data is stored on cloud-based storage systems, one has no direct control over it, and the chances are always there that the data could be leaked. Cloud is a sharing server, so data privacy is a big concern. In the recent past, many cases of data theft were reported. Some firms had to pay the enormous ransom amount to get their data back. With newer security approaches, some of the current techniques are efficient in securing the data channels, such as Datagram Transport Layer Security (DTLS) (Ryan and Watson, 2017).
2. *Sorting difficulty of data*: Selecting the appropriate data is a cumbersome process. Data science methods – Python programming language, Natural Language Processing (NLP) techniques, NoSQL – are solutions for sorting unstructured

data. The Deep Neural Network (DNN) comprises several processing layers that are competent for learning hierarchical representations from the input data and modeling complex behaviors of heterogeneous data sets (Saleem et al., 2019). These technologies include large-scale distributed file systems like Hadoop, which can handle enormously large data sets. The firms require high-quality data for making suitable operational, strategic, and financial decisions. The latest information technology is required; otherwise, the dependence on secondary or redundant data will lead to less accurate decisions.

3. *Scarcity of skilled data personnel*: For emerging entrepreneurs, it is a challenge to arrange adequate resources and to attract personnel with skills for data analysis as compared to large organizations and established entrepreneurs (Pappas et al., 2017). OECD (2019) stressed that policymakers should bring schemes that instill digital and entrepreneurial skills in unrepresented groups through education and training programs. These training programs should be data specific, as mere knowledge is not all entrepreneurs needed. A key skill involves explaining Big Data outcomes to executives – in visual displays or verbal narrative (Chhabra et al., 2020; Chieng et al., 2015; Davenport and Dyché, 2013; Del Giudice et al., 2021; Singh et al., 2018) for relatively better decision making.
4. *Shortage of funds*: One of the reasons for the failure of innovation projects could be the paucity of funds. A study by Thomas Niebel, Fabienne Rasel, and Steffen Viete (2018) suggests that Big Data analytics is the prominent factor for the probable market success of product innovations and applies to both manufacturers and the service sector, depending on the firms' investment in IT-specific skills. Bryan Ritchie and Nick Swisher (2018) found that although the start-ups may lack political or financial power, their (particularly high-potential) collective contributions to the economy are important, and they experience growth rates substantially higher than other firms, creating a huge impact on the overall economic productivity of the economy. Nevertheless, as money attracts money, this growth is owed to an adequate amount of funds with the entrepreneur. OECD (2019) suggested some means of financial access to entrepreneurs:
   a. Support and/or promote crowdfunding platforms to improve access to start-up financing for the digital entrepreneur.
   b. Use award programs to provide small grants.
5. *Storagehassle of data*: As the name implies, Big Data is enormous. With the digitization of each and every thing in this universe, including entrepreneurial activities, large amounts of digital information exist on virtually any topic of interest, in which mobile phones, online shopping, social networks, electronic communication, GPS, and instrumented machinery all produce torrents of data as a by-product of their ordinary operations (McAfee & Brynjolfsson, 2012). One has to prepare an information warehouse that can handle so much data. Nevertheless, this being a costly affair, the companies prefer to store systems on cloud-based platforms. According to Ryan and Watson (2017), to manage IoT databases' size, newer methods for querying semistructured data, data streaming, continuous sampling data, and data mining are needed. Due to the

velocity of Big Data, it is difficult to store information with the traditional storage methods as they are unable to scale up rapidly (Yang et al., 2017)

6. *Slow internet and connectivity*: IoT works on the internet platform and requires high speed and reliability. There is a problem of connectivity, and the network's erratic behavior causes a problem for IoT. In production or business processes, all the activities need to be connected via the internet to gain portability. The expansion of broadband would enhance pattern recognition by using the connected resources accessed via the internet (Caceres-Diaz et al., 2019).
7. *Shoddy collaboration and cooperation*: Pappas et al. (2017) stressed the need for co-creation and inclusive growth to stimulate societal innovation taking advantage of Big Data. Similarly, a collaboration between multiple stakeholders of the entrepreneurship system – government, society, and entrepreneur – tends to prove beneficial for innovation's success rate. Myriad sources drive the source of data in large quantities; thus, balanced cooperation is of utmost importance. Multiscale collaborations require multi-spatiotemporal collaboration across different domains supported by distributed storage (Yang et al., 2017). The cloud environment should allow data scientists and business analysts to explore knowledge acquisition data interactively and collaboratively for further processing (Acharjyaa & Ahmed, 2016; Chung et al., 2014). According to a report of the World Economic Forum (2019) produced in collaboration with McKinsey & Company the classification of data collaborative is as given:
   - "Data cooperatives: Corporations and other essential data holders group together to link and connect data resources.
   - Prizes and challenges: Corporations make data available to qualified applicants who compete to develop new apps or discover innovative uses for the data.
   - Research partnerships: Corporations share data with universities and other academic organizations.
   - Intelligence products: Shared corporate data is used to build a tool, dashboard, report, app, or another technical device to support a public or humanitarian objective.
   - Application Programming Interfaces (APIs): APIs allow developers and others to access data for testing, product development, and data analytics.
   - Trusted intermediary: Corporations share data with a limited number of known partners."

CONCLUSION

Digitalization plays the role of an outcome as well as a source for innovation. At the same time, entrepreneurs and intrapreneurs may be the drivers and the agents of digital transformations (Satalkina & Steiner, 2020; Shahzad et al., 2020). With the advent of the Big Data era, a new job profile will undoubtedly occur, catering to data industries' demands. Various fields are doing wonders after integrating these technologies with Big Data to make the ecosystem more conducive for entrepreneurship. The framework proposed here is in the primary stage. It is suggested to develop and test

it for best practices that can further be used to incorporate newer technologies and Big Data for easing the challenges faced by entrepreneurs.

REFERENCES

Acharjyaa, D. P., and Ahmed, K. (2016). A Survey on Big Data Analytics: Challenges, Open Research Issues and Tools, *(IJACSA) International Journal of Advanced Computer Science and Applications*, 7(2) 2016.

Alam, J. R., et al. (2014). A Review on the Role of Big Data in Business. *International Journal of Computer Science and Mobile Computing*, 3(4) (April), 446–453.

Balachandran, B. M., et al. (2017). Challenges and Benefits of Deploying Big Data Analytics in the Cloud for Business Intelligence. *Procedia Computer Science* 112 (2017) 1112–1122.

Big Data Executive Survey (2017). *Executive Summary of Findings, Big Data Business Impact: Achieving Business Results through Innovation and Disruption*, NewVantage Partners LLC.

Blockchain. n.d. *Wikipedia*. https://en.wikipedia.org/wiki/Blockchain

Bulao, J. (2020). *How Much Data Is Created Every Day in 2020?* https://techjury.net/blog/how-much-data-is-created-every-day/#gref

Caceres-Diaz, P., Usero-Sanchez, M. B., Montoro-Sanchez, A. (2019). *Digital Infrastructure and Entrepreneurship: The Digital Era's Enabling Effect, 30th European Conference of the International Telecommunications Society (ITS): "Towards a Connected and Automated Society"*, Helsinki, Finland, 16–19 June 2019, International Telecommunications Society (ITS), Calgary.

Chhabra, M., Gera, R., Hassan, R., & Hasan, S. (2020). An exploratory study of cognitive, social and normative dimensions of female entrepreneurship within transition economies: Evidence from India and Vietnam. *Pakistan Journal of Commerce and Social Sciences (PJCSS)*, 14(4), 1012–1042.

Chieng, L. B., Singh, M. M., Zaaba, Z. F., & Hassan, R. (2015). Multi-Facet Trust Model for Online Social Network Environment. *International Journal of Network Security and Its Applications*, *7*(1), 1.

Chung, S. K., Yee, O. C., Singh, M. M., & Hassan, R. (2014, September). SQL injections attack and session hijacking on e-learning systems. In *2014 International Conference on Computer, Communications, and Control Technology (I4CT)* (pp. 338–342). IEEE.

Columbus, L. (2018). *Ten Charts That Will Change Your Perspective Of Big Data's Growth*, *Forbes*, 23 May 2018, https://www.forbes.com/sites/louiscolumbus/2018/05/23/10-charts-that-will-change-your-perspective-of-big-datas-growth/#3a1c122e2926

Davenport, T. H., and Dyché, J. (2013). *Big Data in Big Companies, International Institute for Analytics*, May 2013.Copyright © Thomas H. Davenport and SAS Institute Inc.

Del Giudice, M., Di Vaio, A., Hassan, R., and Palladino, R. (2021). Digitalization and new technologies for sustainable business models at the ship–port interface: a bibliometric analysis. *Maritime Policy & Management*, 1–37.

Di Vaio, A., Palladino, R., Hassan, R., and Escobar, O. (2020). Artificial intelligence and business models in the sustainable development goals perspective: A systematic literature review. *Journal of Business Research*, *121*, 283–314.

Entrepreneurship and Big Data. (2019). Source Title: Big Data Analytics for Entrepreneurial Success, doi: 10.4018/978-1-5225-7609-9.ch007

Fatbit.com (n.d.) Five Technologies that Will Drive Entrepreneurship in 2019 & Next Few Years, https://www.fatbit.com/fab/technologies-will-drive-entrepreneurship/

Heater, B. (2020). *XYZ Robotics raises $17M for its pick-and-place logistics robots*. TechCrunch.com, 26 August 2020, https://techcrunch.com/2020/08/25/xyz-robotics-raises-17m-for-its-pick-and-place-logistics-robots/

Khan, N., Yaqoob, I., Hashem, I. A. T., Inayat, Z., Ali, W. K. M., Alam, M., Shiraz, M., and Gani, A. (2014). Review Article Big Data: Survey, Technologies, Opportunities, and Challenges, *Hindawi Publishing Corporation, The Scientific World Journal*, Volume 2014, Article ID 712826, 18 pages. doi: 10.1155/2014/712826

Khvoynitskaya, S. (2018). *Five Success Stories of Enterprise IoT*, Explained. Blog 27-02-2020, https://www.itransition.com/blog/enterprise-iot

Lochy, J. (2017). *Big Data in the Financial Services Industry – from data to insights*, 9 September 2019, https://www.finextra.com/blogposting/17847/big-data-in-the-financial-services-industry---from-data-to-insights

Marr, B. (2018). *How Much Data Do We Create Every Day? The Mind-Blowing Stats Everyone Should Read*. https://www.forbes.com/sites/bernardmarr/2018/05/21/how-much-data-do-we-create-every-day-the-mind-blowing-stats-everyone-should-read/#2ad28f4e60ba

McAfee, A., and Brynjolfsson, E. (2012). Big Data: The Management Revolution, *Harvard Business Review*, *90*(10) (October), 60–68.

Niebel, T., Rasel, F., & Viete, S. (2018): BIG Data – BIG Gains? Understanding the Link between Big Data Analytics and Innovation, *Economics of Innovation and New Technology*, *28*(3), 296–316. doi: 10.1080/10438599.2018.1493075

Note by the UNCTAD secretariat (2011). TD/B/C.II/13, *Key aspects of entrepreneurship and innovation policy frameworks for enhancing local productive capacities*. *United Nations Conference on Trade and Development, Trade and Development Board, Investment, Enterprise and Development Commission, Thirdsession*, Geneva, 2–6 May 2011, TD/B/C.II/131.

Obschonka, M., and Audretsch, D. B. (2019). Artificial Intelligence and Big Data in Entrepreneurship: A New Era Has Begun. *Small Business Economics*. doi: 10.1007/s11187-019-00202-4

OECD (2014).*Data-driven Innovation for Growth and Well-being*. Interim synthesis report, October 2014.

OECD (2019). *What Potential Does Digital Entrepreneurship Have for Being Inclusive?* The Missing Entrepreneurs 2019 © OECD/EU 2019

Pappas, I., Jaccheri, L., Mikalef, P., and Giannakos, M. (2017). "*Social Innovation and Social Entrepreneurship Through Big Data: Developing a Research Agenda*," MCIS 2017 Proceedings. http://aisel.aisnet.org/mcis2017/122.

Perez, S. (2020). *Muze redesigns mobile messaging as a free-form canvas for creativity*, https://techcrunch.com/2020/08/25/muze-redesigns-mobile-messaging-as-a-free-form-canvas-for-creativity/, 26 August 2020

Prüfer, J., and Prüfer, P. (2020). Data science for entrepreneurship research: studying demand dynamics for entrepreneurial skills in the Netherlands, *Small Bus Econ*, *55*, 651–672.

Ritchie, B., and Swisher, N. (2018). "*The Big Small: The Economic Benefits of Startups / University of Notre Dame*". *IDEA Center*, https://ideacenter.nd.edu/news-events/news/the-bigsmall-the-economic-benefits-of-startups/.

Ryan, P. J., and Watson, R. B. (2017). Research Challenges for the Internet of Things: What Role Can OR Play? Review, *Systems*, 5, 24; doi: 10.3390/systems5010024

Saleem, T. J., et al. (2019). Deep Learning for Internet of Things Data Analytics. *Procedia Computer Science*, *163*(2019), 381–390.

Satalkina, L., and Steiner, G. (2020). Digital Entrepreneurship and Its Role in Innovation Systems: A Systematic Literature Review as a Basis for Future Research Avenues for Sustainable Transitions, *Sustainability*, *12*, 2764; doi: 10.3390/su12072764

Satyanarayana, L. V. (2015). A Survey on Challenges and Advantages in Big Data, *IJCST*, *6*(2) (April–June), *6*(2), 115–119.

Shahzad, A., Hassan, R., Aremu, A. Y., Hussain, A., & Lodhi, R. N. (2020). Effects of COVID-19 in E-learning on higher education institution students: the group comparison between male and female. *Quality & Quantity*, 1–22.

Singh, M. M., Adzman, K. A. A. K., & Hassan, R. (2018). Near Field Communication (NFC) technology security vulnerabilities and countermeasures. *International Journal of Engineering and Technology*, *7*(4.31), 298–305.

Sivarajah, U., Kamal, M. M., Irani, Z., and Weerakkody, V. (2017). Critical Analysis of Big Data Challenges and Analytical Methods, *Journal of Business Research*, *70*, 263–286.

Wani, M. A. and Suraiya, J. (2018). Big Data: Issues, Challenges, and Techniques in Business Intelligence. In: V. Aggarwal, V. Bhatnagar, and D. Mishra (eds), *Big Data Analytics. Advances in Intelligent Systems and Computing*, *654*. Springer, Singapore. doi: 10.1007/978-981-10-6620-7_59

World Economic Forum. (2019). *Data Collaboration for the Common Good: Enabling Trust and Innovation Through Public-Private Partnerships*, Geneva, Switzerland

Yang, C., Huang, Q., Li, Z., Liu, K., and Hu, F. (2017). Big Data and Cloud Computing: Innovation Opportunities and Challenges, *International Journal of Digital Earth*, *10*(1), 13–53, doi: 10.1080/17538947.2016.1239771

Ecosystem for Entrepreneurship in a Big Data-Driven Universe

Acharjyaa, D. P. , and Ahmed, K. (2016). A Survey on Big Data Analytics: Challenges, Open Research Issues and Tools, (IJACSA) International Journal of Advanced Computer Science and Applications, 7(2) 2016.

Alam, J. R. , et al. (2014). A Review on the Role of Big Data in Business. International Journal of Computer Science and Mobile Computing, 3(4) (April), 446–453.

Balachandran, B. M. , et al. (2017). Challenges and Benefits of Deploying Big Data Analytics in the Cloud for Business Intelligence. Procedia Computer Science 112 (2017) 1112–1122.

Big Data Executive Survey (2017). Executive Summary of Findings, Big Data Business Impact: Achieving Business Results through Innovation and Disruption, NewVantage Partners LLC.

Blockchain . n.d. Wikipedia. https://en.wikipedia.org/wiki/Blockchain

Bulao, J. (2020). How Much Data Is Created Every Day in 2020? https://techjury.net/blog/how-much-data-is-created-every-day/#gref

Caceres-Diaz, P. , Usero-Sanchez, M. B. , Montoro-Sanchez, A. (2019). Digital Infrastructure and Entrepreneurship: The Digital Era's Enabling Effect, 30th European Conference of the International Telecommunications Society (ITS): "Towards a Connected and Automated Society", Helsinki, Finland, 16–19 June 2019, International Telecommunications Society (ITS), Calgary.

Chhabra, M. , Gera, R. , Hassan, R. , & Hasan, S. (2020). An exploratory study of cognitive, social and normative dimensions of female entrepreneurship within transition economies: Evidence from India and Vietnam. Pakistan Journal of Commerce and Social Sciences (PJCSS), 14(4), 1012–1042.

Chieng, L. B. , Singh, M. M. , Zaaba, Z. F. , & Hassan, R. (2015). Multi-Facet Trust Model for Online Social Network Environment. International Journal of Network Security and Its Applications, 7(1), 1.

Chung, S. K. , Yee, O. C. , Singh, M. M. , & Hassan, R. (2014, September). SQL injections attack and session hijacking on e-learning systems. In *2014 International Conference on Computer, Communications, and Control Technology (I4CT)* (pp. 338–342). IEEE.

Columbus, L. (2018). Ten Charts That Will Change Your Perspective Of Big Data's Growth, *Forbes*, 23 May 2018, https://www.forbes.com/sites/louiscolumbus/2018/05/23/10-charts-that-will-change-your-perspective-of-big-datas-growth/#3a1c122e2926

Davenport, T. H. , and Dyché, J. (2013). Big Data in Big Companies, International Institute for Analytics, May 2013.Copyright © Thomas H. Davenport and SAS Institute Inc.

Del Giudice, M. , Di Vaio, A. , Hassan, R. , and Palladino, R. (2021). Digitalization and new technologies for sustainable business models at the ship–port interface: a bibliometric analysis. Maritime Policy & Management, 1–37.

Di Vaio, A. , Palladino, R. , Hassan, R. , and Escobar, O. (2020). Artificial intelligence and business models in the sustainable development goals perspective: A systematic literature review. Journal of Business Research, 121, 283–314.

Entrepreneurship and Big Data . (2019). Source Title: Big Data Analytics for Entrepreneurial Success, doi: 10.4018/978-1-5225-7609-9.ch007

Fatbit.com (n.d.) Five Technologies that Will Drive Entrepreneurship in 2019 & Next Few Years, https://www.fatbit.com/fab/technologies-will-drive-entrepreneurship/

Heater, B. (2020). XYZ Robotics raises $17M for its pick-and-place logistics robots. TechCrunch.com, 26 August 2020, https://techcrunch.com/2020/08/25/xyz-robotics-raises-17m-for-its-pick-and-place-logistics-robots/

Khan, N. , Yaqoob, I. , Hashem, I. A. T. , Inayat, Z. , Ali, W. K. M. , Alam, M. , Shiraz, M. , and Gani, A. (2014). Review Article Big Data: Survey, Technologies, Opportunities, and Challenges, Hindawi Publishing Corporation, The Scientific World Journal, Volume 2014, Article ID 712826, 18 pages. doi: 10.1155/2014/712826

Khvoynitskaya, S. (2018). Five Success Stories of Enterprise IoT, Explained. Blog 27-02-2020, https://www.itransition.com/blog/enterprise-iot

Lochy, J. (2017). Big Data in the Financial Services Industry – from data to insights, 9 September 2019, https://www.finextra.com/blogposting/17847/big-data-in-the-financial-services-industry---from-data-to-insights

Marr, B. (2018). How Much Data Do We Create Every Day? The Mind-Blowing Stats Everyone Should Read. https://www.forbes.com/sites/bernardmarr/2018/05/21/how-much-data-do-we-create-every-day-the-mind-blowing-stats-everyone-should-read/#2ad28f4e60ba

McAfee, A. , and Brynjolfsson, E. (2012). Big Data: The Management Revolution, Harvard Business Review, 90(10) (October), 60–68.
Niebel, T. , Rasel, F. , & Viete, S. (2018): BIG Data – BIG Gains? Understanding the Link between Big Data Analytics and Innovation, Economics of Innovation and New Technology, 28(3), 296–316. doi: 10.1080/10438599.2018.1493075
Note by the UNCTAD secretariat (2011). TD/B/C.II/13, Key aspects of entrepreneurship and innovation policy frameworks for enhancing local productive capacities. United Nations Conference on Trade and Development, Trade and Development Board, Investment, Enterprise and Development Commission, Thirdsession, Geneva, 2–6 May 2011, TD/B/C.II/131.
Obschonka, M. , and Audretsch, D. B. (2019). Artificial Intelligence and Big Data in Entrepreneurship: A New Era Has Begun. Small Business Economics. doi: 10.1007/s11187-019-00202-4
OECD (2014).Data-driven Innovation for Growth and Well-being. Interim synthesis report, October 2014.
OECD (2019). What Potential Does Digital Entrepreneurship Have for Being Inclusive? The Missing Entrepreneurs 2019 © OECD/EU 2019
Pappas, I. , Jaccheri, L. , Mikalef, P. , and Giannakos, M. (2017). “Social Innovation and Social Entrepreneurship Through Big Data: Developing a Research Agenda,” MCIS 2017 Proceedings. http://aisel.aisnet.org/mcis2017/122.
Perez, S. (2020). Muze redesigns mobile messaging as a free-form canvas for creativity, https://techcrunch.com/2020/08/25/muze-redesigns-mobile-messaging-as-a-free-form-canvas-for-creativity/, 26 August 2020
Prüfer, J. , and Prüfer, P. (2020). Data science for entrepreneurship research: studying demand dynamics for entrepreneurial skills in the Netherlands, Small Bus Econ, 55, 651–672.
Ritchie, B. , and Swisher, N. (2018). “The Big Small: The Economic Benefits of Startups /University of Notre Dame”. *IDEA Center* , https://ideacenter.nd.edu/news-events/news/the-bigsmall-the-economic-benefits-of-startups/.
Ryan, P. J. , and Watson, R. B. (2017). Research Challenges for the Internet of Things: What Role Can OR Play? Review, Systems, 5, 24; doi: 10.3390/systems5010024
Saleem, T. J. , et al. (2019). Deep Learning for Internet of Things Data Analytics. Procedia Computer Science, 163(2019), 381–390.
Satalkina, L. , and Steiner, G. (2020). Digital Entrepreneurship and Its Role in Innovation Systems: A Systematic Literature Review as a Basis for Future Research Avenues for Sustainable Transitions, Sustainability, 12, 2764; doi: 10.3390/su12072764
Satyanarayana, L. V. (2015). A Survey on Challenges and Advantages in Big Data, IJCST, 6(2) (April–June), 6(2), 115–119.
Shahzad, A. , Hassan, R. , Aremu, A. Y. , Hussain, A. , & Lodhi, R. N. (2020). Effects of COVID-19 in E-learning on higher education institution students: the group comparison between male and female. Quality & Quantity, 1–22.
Singh, M. M. , Adzman, K. A. A. K. , & Hassan, R. (2018). Near Field Communication (NFC) technology security vulnerabilities and countermeasures. International Journal of Engineering and Technology, 7(4.31), 298–305.
Sivarajah, U. , Kamal, M. M. , Irani, Z. , and Weerakkody, V. (2017). Critical Analysis of Big Data Challenges and Analytical Methods, Journal of Business Research, 70, 263–286.
Wani, M. A. and Suraiya, J. (2018). Big Data: Issues, Challenges, and Techniques in Business Intelligence. In: V. Aggarwal , V. Bhatnagar , and D. Mishra (eds), Big Data Analytics. Advances in Intelligent Systems and Computing, 654. Springer, Singapore. doi: 10.1007/978-981-10-6620-7_59
World Economic Forum . (2019). Data Collaboration for the Common Good: Enabling Trust and Innovation Through Public-Private Partnerships, Geneva, Switzerland
Yang, C. , Huang, Q. , Li, Z. , Liu, K. , and Hu, F. (2017). Big Data and Cloud Computing: Innovation Opportunities and Challenges, International Journal of Digital Earth, 10(1), 13–53, doi: 10.1080/17538947.2016.1239771

The Application and Influence of Industrial Internet of Things, Big Data, and Analytics Towards Sustainable Value Creation

Adamu, H. , Lutfi, S. L. , Malim, N. H. A. H. , Hassan, R. , Di Vaio, A. , & Mohamed, A. S. A. (2021). Framing Twitter Public Sentiment on Nigerian Government COVID-19 Palliatives Distribution Using Machine Learning. Sustainability, 13(6), 3497.

Alvarez, S. A. , & Barney, J. B. (2017). Resource-Based Theory and the Entrepreneurial Firm. In M. A. Hitt , D. R. Ireland , M. S. Camp , & D. L. Sexton (Eds.), Strategic Entrepreneurship (pp. 87–105).

Arunkumar, P. M. , & Kannimuthu, S. (2020). Mining Big Data Streams Using Business Analytics Tools: a Bird's Eye View on MOA and SAMOA. International Journal of Business Intelligence and Data Mining, 17(2), 226–236. doi: 10.1504/IJBIDM. 2020.108761

Barney, J. B. (1991). Firm Resources and Sustained Competitive Advantage. Journal of Management, 17(1), 99–120. doi: 10.1177/014920639101700108

Bärring, M. , Lundgren, C. , Åkerman, M. , Johansson, B. , Stahre, J. , Engström, U. , & Friis, M. (2018). 5G Enabled Manufacturing Evaluation for Data-Driven Decision-Making. Procedia CIRP, 72, 266–271. doi: 10.1016/j.procir.2018.03.169

Bonilla, S. H. , Silva, H. R. O. , Terra da Silva, M. , Franco Gonçalves, R. , & Sacomano, J. B. (2018). Industry 4.0 and Sustainability Implications: A Scenario-Based Analysis of the Impacts and Challenges. Sustainability, 10 (10), 3740.

Bosi, F. , Corradi, A. , Di Modica, G. , Foschini, L. , Montanari, R. , Patera, L. , & Solimando, M. (2020, 21–23 September). Enabling Smart Manufacturing by Empowering Data Integration with Industrial IoT Support. Paper presented at the 2020 International Conference on Technology and Entrepreneurship (ICTE).

Bosse, S. , Nahhas, A. , Pohl, M. , & Turowski, K. (2019). Towards an Automated Optimization-as-a-service Concept. Paper presented at the 4th International Conference on Internet of Things, Big Data and Security, IoTBDS 2019.

Campos, J. , Sharma, P. , Gabiria, U. G. , Jantunen, E. , & Baglee, D. (2017). A Big Data Analytical Architecture for the Asset Management. Procedia CIRP, 64, 369–374. doi: 10.1016/j.procir.2017.03.019

Cavalcante, I. M. , Frazzon, E. M. , Forcellini, F. A. , & Ivanov, D. (2019). A Supervised Machine Learning Approach to Data-Driven Simulation of Resilient Supplier Selection in Digital Manufacturing. International Journal of Information Management, 49, 86–97. doi: 10.1016/j.ijinfomgt.2019.03.004

Chettri, L. , & Bera, R. (2020). A Comprehensive Survey on Internet of Things (IoT) Toward 5G Wireless Systems. IEEE Internet of Things Journal, 7(1), 16–32. doi: 10.1109/JIOT.2019.2948888

Dantas, T. E. T. , de-Souza, E. D. , Destro, I. R. , Hammes, G. , Rodriguez, C. M. T. , & Soares, S. R. (2021). How the Combination of Circular Economy and Industry 4.0 Can Contribute towards Achieving the Sustainable Development Goals. Sustainable Production and Consumption, 26, 213–227. doi: 10.1016/j.spc.2020.10.005

Das, M. , & Dash, R. (2021, 2021//). Role of Cloud Computing for Big Data: A Review. Paper presented at the Intelligent and Cloud Computing, Singapore.

Del Giudice, M. , Di Vaio, A. , Hassan, R. , & Palladino, R. (2021). Digitalization and New Technologies for Sustainable Business Models at the Ship–Port Interface: A Bibliometric Analysis. Maritime Policy & Management, 1–37.

Desai, P. V. (2018, 20–21 April 2018). A Survey on Big Data applications and challenges. Paper presented at the 2018 Second International Conference on Inventive Communication and Computational Technologies (ICICCT).

Di Vaio, A. , Palladino, R. , Hassan, R. , & Escobar, O. (2020). Artificial Intelligence and Business Models in the Sustainable Development Goals Perspective: A Systematic Literature Review. Journal of Business Research, 121, 283–314.

Dong, B. , Wang, H. , Monreale, A. , Pedreschi, D. , Giannotti, F. , & Guo, W. (2020). Authenticated Outlier Mining for Outsourced Databases. IEEE Transactions on Dependable and Secure Computing, 17(2), 222–235. doi: 10.1109/TDSC.2017.2754493

Elshawi, R. , Sakr, S. , Talia, D. , & Trunfio, P. (2018). Big Data Systems Meet Machine Learning Challenges: Towards Big Data Science as a Service. Big Data Research, 14, 1–11. doi: 10.1016/j.bdr.2018.04.004

Frank, A. G. , Dalenogare, L. S. , & Ayala, N. F. (2019). Industry 4.0 Technologies: Implementation Patterns in Manufacturing Companies. International Journal of Production Economics, 210, 15–26. doi: 10.1016/j.ijpe.2019.01.004

Gaikwad, A. , Yavari, R. , Montazeri, M. , Cole, K. , Bian, L. , & Rao, P. (2020). Toward the Digital Twin of Additive Manufacturing: Integrating Thermal Simulations, Sensing, and Analytics to Detect Process Faults. IISE Transactions, 52(11), 1204–1217. doi: 10.1080/24725854.2019.1701753

Hoff, J. , Gausset, Q. , & Lex, S. (2019). The Role of Non-State Actors in the Green Transition: Building a Sustainable Future (1st ed.). London: Routledge.

Hung, Y.-H. (2019). Investigating How the Cloud Computing Transforms the Development of Industries. IEEE Access, 7, 181505–181517. doi: 10.1109/ACCESS.2019.2958973

Ilin, I. , Levina, A. , Borremans, A. , & Kalyazina, S. (2021). Enterprise Architecture Modeling in Digital Transformation Era. Paper presented at the International Scientific Conference Energy Management of Municipal Facilities and Sustainable Energy Technologies EMMFT 2019, Cham.

Kiel, D. , Müller, J. M. , Arnold, C. , & Voigt, K.-I. (2017). Sustainable Industrial Value Creation: Benefits and Challenges of Industry 4.0. International Journal of Innovation Management, 21(08), 1740015. doi: 10.1142/S1363919617400151

Lin, Y. , Jun, Z. , Hongyan, M. , Zhongwei, Z. , & Zhanfang, F. (2018). A Method of Extracting the Semi-structured Data Implication Rules. Procedia Computer Science, 131, 706–716. doi: 10.1016/j.procs.2018.04.315

Mhatre, L. , & Rai, N. (2017, 10–11 February). Integration between Wireless Sensor and Cloud. Paper presented at the 2017 International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud) (I-SMAC).

Müller, J. M. , Buliga, O. , & Voigt, K.-I. (2020a). The Role of Absorptive Capacity and Innovation Strategy in the Design of Industry 4.0 Business Models – a Comparison between SMEs and Large Enterprises. European Management Journal. doi: 10.1016/j.emj.2020.01.002

Müller, J. M. , Kiel, D. , & Voigt, K.-I. (2018). What Drives the Implementation of Industry 4.0? The Role of Opportunities and Challenges in the Context of Sustainability. Sustainability, 10(1), 247.

Müller, J. M. , Veile, J. W. , & Voigt, K.-I. (2020b). Prerequisites and Incentives for Digital Information Sharing in Industry 4.0 – an International Comparison across Data Types. Computers & Industrial Engineering, 148, 106733. doi: 10.1016/j.cie.2020.106733

Müller, J. M. , & Voigt, K.-I. (2018). Sustainable Industrial Value Creation in SMEs: A Comparison between Industry 4.0 and Made in China 2025. International Journal of Precision Engineering and Manufacturing-Green Technology, 5(5), 659–670. doi: 10.1007/s40684-018-0056-z

Nuvolari, A. (2018). Understanding Successive Industrial Revolutions: A “Development Block” Approach. Environmental Innovation and Societal Transitions. doi: 10.1016/j.eist.2018.11.002

Olawumi, T. O. , & Chan, D. W. M. (2018). A Scientometric Review of Global Research on Sustainability and Sustainable Development. Journal of Cleaner Production, 183, 231–250. doi: 10.1016/j.jclepro.2018.02.162

Oussous, A. , Benjelloun, F.-Z. , Ait Lahcen, A. , & Belfkih, S. (2018). Big Data Technologies: A Survey. Journal of King Saud University - Computer and Information Sciences, 30(4), 431–448. doi: 10.1016/j.jksuci.2017.06.001

Pääkkönen, P. , & Pakkala, D. (2020). Extending Reference Architecture of Big Data Systems towards Machine Learning in Edge Computing Environments. Journal of Big Data, 7(1), 25. doi: 10.1186/s40537-020-00303-y

Ranta, V. , Aarikka-Stenroos, L. , & Väisänen, J.-M. (2021). Digital Technologies Catalyzing Business Model Innovation for Circular Economy – Multiple Case Study. Resources, Conservation and Recycling, 164, 105155. doi: 10.1016/j.resconrec.2020.105155

Repsol . (2019). Repsol Digital Program. Retrieved from Madrid: https://www.repsol.com/imagenes/global/es/HR09052019_Digital_Tech_CNMV_tcm13-155291.PDF

Sampson Abeeku, E. , Mary, A. , & Divine Quazie, A. (2020). Integrating Digital Innovation Capabilities Towards Value Creation: A Conceptual View. International Journal of Intelligent Information Technologies (IJIIT), 16(4), 37–50. doi: 10.4018/IJIIT.2020100103

Sawant, A. , Bondre, D. , Joshi, A. , Tambavekar, P. , & Deshmukh, A. (2018, 30–31 August). Design and Analysis of Automated Dual Axis Solar Tracker Based on Light Sensors. Paper

presented at the 2018 2nd International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud) (I-SMAC).
Serrano, W. (2021). Big Data in Smart Infrastructure. Paper presented at the Intelligent Systems and Applications, Cham.
Shahzad, A. , Hassan, R. , Abdullah, N. I. , Hussain, A. , & Fareed, M. (2020a). COVID-19 Impact on E-Commerce Usage: An Empirical Evidence from Malaysian Healthcare Industry. Humanities & Social Sciences Reviews, 8(3), 599–609.
Shahzad, A. , Hassan, R. , Aremu, A. Y. , Hussain, A. , & Lodhi, R. N. (2020b). Effects of COVID-19 in E-Learning on Higher Education Institution Students: The Group Comparison Between Male and Female. Quality & Quantity, 1–22.
Stock, T. , Obenaus, M. , Kunz, S. , & Kohl, H. (2018). Industry 4.0 as Enabler for a Sustainable Development: A Qualitative Assessment of Its Ecological and Social Potential. Process Safety and Environmental Protection, 118, 254–267. doi: 10.1016/j.psep.2018.06.026
Suresh, K. , Jeoti, V. , Soeung, S. , Drieberg, M. , Goh, M. , & Aslam, M. Z. (2020). A Comparative Survey on Silicon Based and Surface Acoustic Wave (SAW)-Based RFID Tags: Potentials, Challenges, and Future Directions. IEEE Access, 8, 91624–91647. doi: 10.1109/ACCESS.2020.2976533
Unhelkar, B. , & Trivikram Rao, V. (2020, 2020//). Key Considerations in Optimizing the Deployment of Big Data Analytics-as-a-Service Utilizing Cloud Architecture and Machine Learning. Paper presented at the Proceedings of ICETIT 2019, Cham.
Vaidya, S. , Ambad, P. , & Bhosle, S. (2018). Industry 4.0 – a Glimpse. Procedia Manufacturing, 20, 233–238. doi: 10.1016/j.promfg.2018.02.034

Robotic Process Automation (RPA) in Global Business Services (GBS)

ACCA . (2018). Embracing robotic automation during the evolution of finance. Retrieved from https://www.accaglobal.com/gb/en/professional-insights/technology/embracing-robotic-automation-during-the-evolution-of-finance.html.
Ali, S. E. A. , Lai, F. W. , Hassan, R. , & Shad, M. K. (2021). The long-run impact of information security breach announcements on investors' confidence: The context of efficient market hypothesis. Sustainability, 13(3), 1066.
Ammous, S. (2016). Blockchain technology: What is it good for? Retrieved from https://pdfs.semanticscholar.org/0f75/78d3b14efc547d2bee8b971de1218b5d073f.pdf.
Anagnoste, S. (2017). Robotic Automation Process – the next major revolution in terms of backoffice operations improvement. In *Proceedings of the International Conference on Business Excellence* (Vol. 11, No. 1, pp. 676–686). De Gruyter Open.
Automation Anywhere . (2020a). Dell leverages RPA to boost enterprise HR productivity with Workday by up to 85%. Retrieved from https://www.automationanywhere.com/images/casestudy/Casestudy-Dell.pdf
Automation Anywhere . (2020b). RPA for small business: Why and how to start. Retrieved from https://www.automationanywhere.com/company/blog/learn-rpa/rpa-for-small-business-why-and-how-to-start
Chacón-Montero, J. , Jiménez-Ramírez, A. , & Enríquez, J. G. (2019, May). Towards a method for automated testing in robotic process automation projects. In Proceedings ofthe 14th International Workshop on Automation of Software Test (pp. 42–47). IEEE Press.
Clark, T. , & Jones, R. (1999). Organisational interoperability maturity model for C2. In Proceedings of the 1999 Command and Control Research and Technology Symposium (pp. 1–13). Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.200.107&rep=rep1&type=pdf.
Das, G. , (2018). Robotic process automation failure rate is 30–50%, says EXL CEO Rohit Kapoor. *Business Today* . Retrieved from https://www.businesstoday.in/sectors/bpo/robotic-process-automation-failure-rate-indian-bpo-business-process-outsourcing-exl-ceo-rohit-kapoor/story/267187.html. Accessed on 20 November 2019 .
DHL . n.d. Bring on the bots! – how automation can break through bottlenecks and boost business. Retrieved from https://www.dhl.com/global-en/spotlight/digitalization/logistics-automation.html/. Accessed on 22 November 2020 .

Frankenfield, J. (2018). Robotic Process Automation. Retrieved from https://www.investopedia.com/terms/r/robotic-process-automation-rpa.asp. Accessed on 1 November 2019 .

Global RPA Survey 2018: Deloitte . (2018). Retrieved from https://www2.deloitte.com/bg/en/pages/technology/articles/deloitte-global-rpa-survey-2018.html. Accessed on 18 November 2019 .

Gupta, M. (2018). Minimize cost, maximize productive output with RPA. Retrieved from http://www.gridinfocom.com/minimize-cost-maximize-productive-output-with-rpa/. Accessed on 21 November 2020 .

IBM . (2020). How to get started with extreme automation using AI-driven RPA tools. Retrieved from https://www.ibm.com/cloud/blog/get-started-with-extreme-automation-using-ai-driven-rpa-tools

Indico (2019). Implementation pathways of RPA in the organization. Retrieved from https://indico.io/wp-content/uploads/2019/08/Everest-Group-Unstructured-Data-Process-Automation.pdf.

ITU . (2009) Overview of cybersecurity. Recommendation ITU-T X.1205. Geneva: International Telecommunication Union (ITU). https://www.itu.int/rec/T-REC-X.1205-200804-I/en.

Kappagantula, S. (2019). Robotic Process Automation (RPA) tutorial – learn to automate tasks in RPA. Retrieved from https://www.edureka.co/blog/rpa-tutorial/. Accessed on 16 November 2019 .

Kopper, V. , Rodrigues, G. , Zomb, M. , & Zuccolillo, F. (2020). Implementing robotic process automation for internal process optimization. Retrieved from https://web.wpi.edu/Pubs/E-project/Available/E-project-051920-165454/unrestricted/MQP_Report_Final.pdf

Mirza, S. , (2020). RPA for small business: why and how to start. Retrieved from https://www.automationanywhere.com/company/blog/learn-rpa/rpa-for-small-business-why-and-how-to-start.

Nizri, G (2017). Business benefits of robotic process automation. Retrieved from https://ayehu.com/business-benefits-robotic-process-automation-2/.

Platon, M. , (2020). Every entrepreneur should befriend a robot. Retrieved from https://www.entrepreneur.com/article/345180.

Rosemann, M. , & Bruin, T. D. (2005). Towards a business process management maturity model. Retrieved from https://eprints.qut.edu.au/25194/.

Santos, F. , Pereira, R. , & Vasconcelos, J. B. (2019). Toward robotic process automation implementation: an end-to-end perspective. Business Process Management Journal.

Stople, A. , Steinsund, H. , Jon, I. , & Bygstad, B. (2017). Lightweight IT and the IT function: experiences from Robotic Process Automation in a Norwegian Bank (Vol 25, No. 1). Retrieved from https://ojs.bibsys.no/index.php/Nokobit/article/view/405

Syed, E. , Azhar, A. , Fong-Woon, L. , & Rohail, H. (2020, November). Socio-economic factors on sector-wide systematic risk of information security breaches: Conceptual framework. In *Proceedings of the International Economics and Business Management Conference* , Melaka, Malaysia (pp. 2–3).

The impact of RPA on employee experience . (2019). Retrieved from https://dfe.org.pl/wp-content/uploads/2019/04/Forrester_RPA-Impact_Employee-Engagement.pdf

UiPath . (2020). Growing shared services capabilities via RPA-enabled human and virtual service centers. Retrieved from https://www.uipath.com/resources/automation-case-studies/dhl-global-forwarding-freight#:~:text=The%20goal%20is%20to%20use,the%20Division's%20ongoing%20business%20goals/. Accessed on 22 November 2020 .

Van Lun, E. (n.d.). Virtual Agent, animated intelligent agent for automated chat with human users. Retrieved from https://www.chatbots.org/virtual_agent/. Accessed on 20 November 2019 .

Social Entrepreneurship in an Era of Disruption

Adamu, H. , Lutfi, S. L. , Malim, N. H. A. H. , Hassan, R. , Di Vaio, A. , and Mohamed, A. S. A. (2021). Framing Twitter public sentiment on Nigerian government COVID-19 palliatives distribution using machine learning. Sustainability, 13(6), p. 3497.

Ali, S. E. A. , Lai, F. W. , Hassan, R. , and Shad, M. K. (2021). The long-run impact of information security breach announcements on investors' confidence: The context of efficient market hypothesis. Sustainability, 13(3), p. 1066.

Ashraf . (2019). Technology as a catalyst for sustainable social business: Advancing the research agenda. *Elseiver*, 1145.

Bacq, S. , Geoghegan, W. , Josephy, M. , Stevenson, R. G. , and Williams, T. A. (2020, May). The COVID-19 Virtual Idea Blitz: Marshaling social entrepreneurship to rapidly respond to urgent grandchallenges. Business Horizons, 63(6), pp. 705–723. Retrieved July 2020, from Elsevier: https://reader.elsevier.com/reader/sd/pii/S0007681320300690

Bell, W. (2003). Foundations of Futures Studies: History, Purposes and Knowledge (Volume 1: Human science for a new era). Routledge. *Elsevier*.

Bernholz, L. (2012). Let our data define us – part II. Retrieved from https://digitalimpact.io/661/

Bhaskar, S. (2020, July). Highlights of #DilSeSewa Telethon: an initiative to support our langars feed millions during the coronavirus crisis. Retrieved from NDTV: https://www.ndtv.com/campaigns/dilsesewa-telethon-an-initiative-to-feed-poor-and-vulnerable-people-amid-coronavirus-crisis-2255919

Briscoe, G. , and Mulligan, C. (2014). Digital innovation: The hackathon phenomenon. London: Creativeworks.

Cavanillas, J. M. , Curry, E. , and Wahlster, W. (2016). The big data value opportunity. In New Horizons for a Data Driven Economy (pp. 3–11). Springer, Cham.

Chhabra, M. , Gera, R. , Hassan, R. , and Hasan, S. (2020). An exploratory study of cognitive, social and normative dimensions of female entrepreneurship within transition economies: Evidence from India and Vietnam. Pakistan Journal of Commerce and Social Sciences (PJCSS), 14(4), pp. 1012–1042.

Crawford, K. (2013, May). Is Big Data all it's cracked up to be? *Sydney Morning Herald*. Retrieved 2020, from https://www.smh.com.au/technology/is-big-data-all-its-cracked-up-to-be-20130513-2jh55.html

Data Without Borders . (n.d.). Retrieved from http://datawithoutborders.net/

DataKind . (n.d.). Retrieved from https://www.datakind.org/our-story

Dees, J. G. (2011). Social ventures as learning laboratories. Tennessee's Business, 20(1), 3–5.

Del Giudice, M. , Di Vaio, A. , Hassan, R. , and Palladino, R. (2021). Digitalization and new technologies for sustainable business models at the ship–port interface: A bibliometric analysis. Maritime Policy & Management, 1–37.

Demsyt . (n.d.). Retrieved from https://demyst.com/products

Developers for Good . (n.d.). Retrieved from https://developersforgood.org/

Di Vaio, A. , Palladino, R. , Hassan, R. , and Escobar, O. (2020). Artificial intelligence and business models in the sustainable development goals perspective: A systematic literature review. Journal of Business Research, 121, 283–314.

Drabek, T.E. and McEntire, D.A. (1993). Emergent phenomena and the sociology of disaster: lessons, trends and opportunities from the research literature. Journal of Personality and Social Psychology, 64(3), pp. 395–408.

Dutton, J.E. , and Worline, M.C. (2006). Explaining compassion organizing. Administrative Science Quarterly, 51(1), pp. 59–96.

Emerging Graphic Tool Gets People Talking . (2008, May). Retrieved from Harvard Business Review: https://hbr.org/2008/05/emerging-graphic-tool-getspeople-talking

Esty, K. (2011). Lessons from Muhammad Yunus and the Grameen Bank. O D Practitioner, 43(1), pp. 24–28.

Evgeniou, T. , Hardoon, D. R. , & Ovchinnikov, A. (2020). Leveraging AI to battle this pandemic – and the next one. Harvard Business Review.

Fisher, G. , Stevenson, R. , Neubert, E. , Burnell, D. , and Kuratko, D. F. (2020). Entrepreneurial hustle: Navigating uncertainty and enrolling venture stakeholders through urgent and unorthodox action. Journal of Management Studies, 57(5), 1002–1036.

Flyvbjerg, B. (2006). Five misunderstandings about case-study research. Qualitative Inquiry, 12(2), pp. 219–245.
Foundation, S . (2020, May 5). Why social entrepreneurs are critical to our response to and recovery from the COVID-19 crisis. Retrieved from Weforum.org: https://www.weforum.org/agenda/2020/05/schwab-foundation-covid-response-alliance-social-entrepreneurs-coronavirus-recovery-response/
Friedman, U. (2012, October). Foreign Policy. Retrieved 2020, from NASA researchers Michael Cox and David Ellsworth use the term “Big Data” for the first time to describe a familiar challenge in the 1990s: supercomputers generating massive amounts of information — in Cox and Ellsworth’s case, simulations of airflow aroun
Gangadharan, S. P. (2013, May). How can Big Data be used for social good? Retrieved from The Guardian: https://www.theguardian.com/sustainable-business/how-can-big-data-social-good
Gates, B. (2020). Responding to COVID-19: A once-in-a-century pandemic? New England Journal of Medicine, 382(18), 1677–1679.
George, G. , and Howard-Grenville, J. (2016). Understanding and tackling societal grand challenges through management research. Academy of Management Journal 59(6), pp. 1880–1895.
Georgia Tech . (2020). Retrieved from Three Tech Teams Among Winners in MIT COVID-19 Challenge Event: http://www.me.gatech.edu/Georgia-Tech-Teams-Win-MIT-COVID-Challenge
Griggs, K.N. Ossipova, O. , Kohlios, C. P. , Baccarini, A. N. , Howson, E. A. , & Hayajneh, T. (2018). Healthcare blockchain system using smart contracts for secure automated remote patient monitoring. Journal of Medical Systems, 42(7), 1–7.
Hilbert, D. (1902). Mathematical problems. Bulletin of the American Mathematical Society, 8, pp. 437–479.
Hindu Data Team . (2020, May). How safe is Aarogya Setu compared to COVID-19 contact tracing apps of other countries? Retrieved from Thehindu.com: https://www.thehindu.com/data/how-safe-is-aarogya-setu-compared-to-contact-tracing-apps-of-other-countries/article31618852.ece
Hussain, A. , Shahzad, A. , Hassan, R. , and Doski, S. A. (2021). COVID-19 impact on B2B e-commerce: A multi-group analysis of sports and surgical SME’s. Pakistan Journal of Commerce and Social Sciences (PJCSS), 15(1), pp. 166–195.
ILO : As job losses escalate, nearly half of global workforce at risk of losing livelihoods. (2020, April 29). Retrieved from Ilo.org: https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_743036/lang--en/index.htm
Kalil, T. (2012, March). Big Data is a big deal. Retrieved 2020, from https://obamawhitehouse.archives.gov/blog/2012/03/29/big-data-big-deal
Kaniasty, K. and Norris, F.H. (1993). A test of the social support deterioration model in the context of natural disaster. Journal of Personality and Social Psychology, 64(3), 395–408.
Knapp, J. , Zeratsky J. (2016). Sprint: How to solve big problems and test new ideas in just five days. New York: Simon and Schuster.
Malik, O. (2013, March). Uber, Data Darwinism and the future of work. *Gigaom*. Retrieved from https://gigaom.com/2013/03/17/uber-data-darwinism-and-the-future-of-work/
mHealth Alliance . (n.d.). Retrieved from mHealth Alliance: http://www.mhealthalliance.org/
MIT . (2020). Three Tech Teams Among Winners in MIT COVID-19 Challenge Event. Retrieved from https://www.me.gatech.edu/Georgia-Tech-Teams-Win-MIT-COVID-Challenge
Nager, M. , Nelsen, C. and Nouyrigat, F. (2011). Startup weekend: How to take a company from concept to creation in 54 hours. New Jersey: John Wiley & Sons.
Oddup . (2020, January). Why social entrepreneurship is the need of the hour during Covid-19. *Media Wire*. Retrieved from https://www.mediawire.in/press-releases/miscellaneous-home/why-social-entrepreneurship-is-the-need-of-the-hour-during-covid19-41279383.html
Olson, P. (2020). Telemedicine, Once a Hard Sell, Can’t Keep Up With Demand. *Wall Street Journal*.
Opinion: Data is new ‘soil’ in times of covid-19 crisis . (2020). *EconomicTimes*. Retrieved from EconomicTimes.indiatimes.com: https://government.economictimes.indiatimes.com/news/governance/opinion-data-is-new-soil-in-times-of-covid-19-crisis/75502320

Quarantelli, E. (1985). What is disaster? The need for clarification in definition and conceptualization in research. Retrieved from University of Delaware: http://udspace.udel.edu/handle/19716/1119
Seelos, C. and Mair, J. (2005). Social entrepreneurship: Creating new business models to serve the poor. Business Horizons, 48(3), pp. 241–246. Retrieved from Business Horizons: https://www.sciencedirect.com/science/article/pii/S0007681304001314
Shah, R. (2012). Building resilience to recurrent crisis: USAID policy and program guidance. Washington, DC: United States Government.
Shahzad, A. , Hassan, R. , Abdullah, N. I. , Hussain, A. , and Fareed, M. (2020a). COVID-19 impact on e-commerce usage: An empirical evidence from Malaysian healthcare industry. Humanities & Social Sciences Reviews, 8 *(* 3 *)*, pp. 599–609.
Shahzad, A. , Hassan, R. , Aremu, A. Y. , Hussain, A. , and Lodhi, R. N. (2020b). Effects of COVID-19 in e-learning on higher education institution students: the group comparison between male and female. Quality & Quantity, pp. 1–22.
Shahzad, A. , Yaqub, R. M. S. , Di Vaio, A. , and Hassan, R. (2021). Antecedents of customer loyalty and performance improvement: Evidence from Pakistan's telecommunications sector. Utilities Policy, 70, p. 101208.
Sikhs, U. (2020, April). United Sikhs Feeds Over 1 Million During Covid-19 Crisis. Retrieved from United Sikhs: https://unitedsikhs.org/united-sikhs-feeds-over-1-million-during-covid-19-crisis/
Srivastava, P. (2020, June). Yogi govt completes skill-mapping of 23.5 lakh migrant workers, 18 lakh want jobs in UP. The Print. Retrieved from https://theprint.in/india/yogi-govt-completes-skill-mapping-of-23-5-lakh-migrant-workers-18-lakh-want-jobs-in-up/435450/
Syed, E. , Azhar, A. , Fong-Woon, L. , and Rohail, H. (2020, November). Socio-economic factors on sector-wide systematic risk of information security breaches: Conceptual framework. In *Proceedings of the International Economics and Business Management Conference* , Melaka, Malaysia (pp. 2–3).
van Tulder, R. , and van Mil, E. (2020). Responsible governance: Broadening the corporate governance discourse to include possible duties and collective action. In Research Handbook of Responsible Management. Edward Elgar Publishing.
USAID . (2020, June). Working in crisis and conflict. Retrieved from https://www.usaid.gov/what-we-do/working-crises-and-conflict
Ushahidi . (2007). *Empowering citizens through crowdsourcing and digital data collection* Retrieved from https://www.ushahidi.com/blog
Using Idea Contagion to Combat Virus Contagion – *"Virtual Idea Blitz" by Kelley School of Business*. (2020). Retrieved 2020, from Kelly School of Business: https://www.covid19ideas.org/
Williams, T.A. and Shepherd, D.A. (2018). To the rescue!? Brokering a rapid, scaled, and customized compassionate response to suffering after disaster. Journal of Management Studies, 55(6), pp. 910–942.
Wired . (2000, June). The petabyte age: Because more isn't just more – more is different.: https://www.wired.com/2008/06/pb-intro/
Yohn, D. L. (2019, May). Why Startups Fail. *Forbes*. Retrieved from https://www.forbes.com/sites/deniselyohn/2019/05/01/why-start-ups-fail/#6ff1e2ab28a5
Yunus, M. B. , & Lehmann-Ortega, L. (2009). Building social business: Lessons from the Grameen Experience. *HEC Paris*.

Big Data

Adamu, H. , Lutfi, S. L. , Malim, N. H. A. H. , Hassan, R. , Di Vaio, A. , & Mohamed, A. S. A. (2021). Framing Twitter Public Sentiment on Nigerian Government COVID-19 Palliatives Distribution Using Machine Learning. Sustainability, 13(6), 3497.
Ahearn, M.C. , Armbruster, W. , & Young, R. (2016). Big Data's Potential to Improve Food Supply Chain Environmental Sustainability and Food Safety. International Food and Agribusiness Management Review, 19(A), 155–172.
Aitkenhead, M. , Donnelly, D. , Coull, M. , & Black, H. (2013, October). E-smart: Environmental Sensing for Monitoring and Advising in Real-Time. In International Symposium on

Environmental Software Systems (pp. 129–142). Berlin, Heidelberg: Springer.
Ali, S. E. A. , Lai, F. W. , Hassan, R. , & Shad, M. K. (2021). The Long-Run Impact of Information Security Breach Announcements on Investors' Confidence: The Context of Efficient Market Hypothesis. Sustainability, 13(3), 1066.
Asur, S. , & Huberman, B.A. (2010). Predicting the Future with Social Media. ACM International Conference on Web Intelligence and Intelligent Agent Technology, l (1), 492–499.
Bock, M. E. , & Kirkendall, N. J. (2017). *Improving Crop Estimates by Integrating Multiple Data Sources*. The National Academies Press, Washington DC, United States. Retrieved from https://books.google.co.in/books/about/Improving_Crop_Estimates_by_Integrating.html?id=NqRGDwAAQBAJ&printsec=frontcover&source=kp_read_button&redir_esc=y#v=onepage&q&f=false.
Bronson. K. , & Knezevic. I. (2016). Big Data in Food and Agriculture. Big Data & Society, 1–5. https://doi.org/10.1177/2053951716648174
Chhabra, M. , Gera, R. , Hassan, R. , & Hasan, S. (2020). An Exploratory Study of Cognitive, Social and Normative Dimensions of Female Entrepreneurship within Transition Economies: Evidence from India and Vietnam. Pakistan Journal of Commerce and Social Sciences (PJCSS), 14(4), 1012–1042.
Chieng, L. B. , Singh, M. M. , Zaaba, Z. F. , & Hassan, R. (2015). Multi-Facet Trust Model for Online Social Network Environment. International Journal of Network Security and Its Applications, 7(1), 1.
Chung, S. K. , Yee, O. C. , Singh, M. M. , & Hassan, R. (2014, September). SQL Injections Attack and Session Hijacking on E-learning Systems. In *2014 International Conference on Computer, Communications, and Control Technology (I4CT)* (pp. 338–342). IEEE.
Coble, K. H. , Mishra, A. K. , Ferrel, S. , & Griffin, T. (2018). Big Data in Agriculture: A Challenge for the Future. Applied Economic Perspectives and Policy. 40(1), 79–96. doi: 10.1093/aepp/ppx056.
Del Giudice, M. , Di Vaio, A. , Hassan, R. , & Palladino, R. (2021). Digitalization and new technologies for sustainable business models at the ship–port interface: a bibliometric analysis. Maritime Policy & Management, 1–37.
Di Vaio, A. , Palladino, R. , Hassan, R. , & Escobar, O. (2020). Artificial intelligence and business models in the sustainable development goals perspective: A systematic literature review. Journal of Business Research, 121, 283–314.
Dyer, J. (2016). The Data Farm: An Investigation of the Implications of Collecting Data on the Farm. Nuffield Australia Project No 1506. Rural Finance Corporation, Australia.
Elgendy, N. , & Elragal, A. (2014). Big Data Analytics: A Literature Review Paper. In: *Proceedings of Industrial Conference on Data Mining* . Russia, 214–227.
Hussain, A. , Shahzad, A. , & Hassan, R. (2020). Organizational and Environmental Factors with the Mediating Role of E-Commerce and SME Performance. Journal of Open Innovation: Technology, Market, and Complexity, 6(4), 196.
Hussain, A. , Shahzad, A. , Hassan, R. , & Doski, S. A. (2021). COVID-19 Impact on B2B E-commerce: A Multi-Group Analysis of Sports and Surgical SMEs. Pakistan Journal of Commerce and Social Sciences (PJCSS), 15(1), 166–195.
Jackson, E. (2016). The Value of Big Data in Agriculture: Inputs, Farming and Processing. International Food and Agribusiness Management Review (IFAMR), 19(A), 5–6.
Kitchin, R. (2014). The Data Revolution: Big Data, Open Data, Data Infrastructures and their Consequences. SAGE Publications Ltd, United Kingdom.
Liu, Y. , Zhang, L. , Yang, Y. , Zhou, L. , Ren, L. , Wang, F. , … & Deen, M. J. (2019). A novel cloud-based framework for the elderly healthcare services using digital twin. IEEE Access, 7, 49088–49101.
Mark, T. B. , Griffin, T. W. , & Whitacre, B. E. (2016). The Role of Wireless Broadband Connectivity on 'Big Data' and the Agricultural Industry in the United States and Australia. International Food and Agribusiness Management Review, 19(A), 1–14.
Mayer-Schonberger, V. & Cukier, K. (2013). Big Data: A Revolution That Will Transform How We Live, Work and Think. Houghton Mifflin Harcourt Publishing Company, Boston, Massachusetts, United States.
Naresh, M. , & Munaswamy, P. (2019). Smart agriculture system using IOT technology. *International Journal of Recent Technology and* Engineering, 7(5), 98–102.

Prasad, K. (2019). Big Data in the Bigger World of Agriculture Today. IEEE India Info, 14(3), 154–157. Retrieved from https://i1.rgstatic.net/publication/304190397_Big_Data_in_food_and_agriculture/links/57edc17c08ae2df364033b1a/largepreview.png.

Rahate, O. , & Khandekar, Y. (2018). Precision agriculture and its scenario in India. *Proceedings of the International Conference on Industrial Engineering and Operations Management* , *Washington, DC, USA* , September 27–29, http://ieomsociety.org/dc2018/papers/7.pdf

Rosenzweig, C. , Elliott, J. , Deryng, D. , Ruane, A. C. , Müller, C. , Arneth, A. , … & Jones, J. W. (2014). Assessing Agricultural Risks of Climate Change in the 21st Century in a Global Gridded Crop Model Intercomparison. Proceedings of the National Academy of Sciences, 111(9), 3268–3273.

Sen, S. , & Madhu, B. (2017). Smart Agriculture: A Bliss to Farmers. International Journal of Engineering Sciences & Research Technology, 6(4), 197–202.

Shahzad, A. , Hassan, R. , Abdullah, N. I. , Hussain, A. , & Fareed, M. (2020a). COVID-19 Impact on E-commerce Usage: An Empirical Evidence from Malaysian Healthcare Industry. Humanities and Social Sciences Reviews, 8(3), 599–609.

Shahzad, A. , Hassan, R. , Aremu, A. Y. , Hussain, A. , & Lodhi, R. N. (2020b). Effects of COVID-19 in E-learning on Higher Education Institution Students: The Group Comparison between Male and Female. Quality & Quantity, 1–22.

Shahzad, A. , Yaqub, R. M. S. , Di Vaio, A. , & Hassan, R. (2021). Antecedents of Customer Loyalty and Performance Improvement: Evidence from Pakistan's Telecommunications Sector. Utilities Policy, 70, 101208.

Singh, M. M. , Adzman, K. A. A. K. , & Hassan, R. (2018). Near Field Communication (NFC) Technology Security Vulnerabilities and Countermeasures. International Journal of Engineering and Technology, 7(4.31), 298–305.

Sivarajah, U. , Kamal, M. M. , Irani, Z. , & Weerakkody, V. (2017). Critical analysis of Big Data challenges and analytical methods. Journal of Business Research, 70, 263–286.

Sonka, S. T. (2016). Big Data: Fueling the Next Evolution of Agricultural Innovation. Journal of Innovation Management, 4(1), 114–136.

Sundareswaran, N. (2018). Botnet life cycle and topologies. International Journal of Pure and Applied Mathematics, 119(17), 421–429.

Syed, E. , Azhar, A. , Fong-Woon, L. , & Rohail, H. (2020, November). Socio-Economic Factors on Sector-Wide Systematic Risk of Information Security Breaches: Conceptual Framework. In *Proceedings of the International Economics and Business Management Conference* , *Melaka, Malaysia* (pp. 2–3).

VanderWaal, K. , Morrison, R. B. , Neuhauser, C. , Vilalta, C. , & Perez, A. M. (2017). Translating Big Data into smart Data for veterinary epidemiology. Frontiers in Veterinary Science, 4(110).

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Adamu, H. , Lutfi, S. L. , Malim, N. H. A. H. , Hassan, R. , Di Vaio, A. , & Mohamed, A. S. A. (2021). Framing Twitter public sentiment on Nigerian government COVID-19 palliatives distribution using machine learning. Sustainability, 13(6), 3497.

Ali, S. E. A. , Lai, F. W. , Hassan, R. , & Shad, M. K. (2021). The long-run impact of information security breach announcements on investors' confidence: The context of efficient market hypothesis. Sustainability, 13(3), 1066.

Annamalah, S. , Munusamy, J. , & Sentosa, I. (2016). Agro-tourism: A cash crop for farmers in Malaysian rural area. Social Science Research Network Journal. doi: 10.2139/ssrn.2876269

Bakar, B. B. (2009). The Malaysian Agricultural Industry in the New Millennium – Issues and Challenges (Issue c). University of Malaya Press. http://eprints.um.edu.my/10909/1/12__The_Malaysian_Agricultural_Industry_in_the_New_Millennium.pdf

Balana, B. B. , Bizimana, J. C. , Richardson, J. W. , Lefore, N. , Adimassu, Z. , & Herbst, B. K. (2020). Economic and food security effects of small-scale irrigation technologies in northern

Ghana. Water Resources and Economics, 29, 100141. doi: 10.1016/j.wre.2019.03.001
Bunge, J. (2014). Big data comes to the farm, sowing mistrust; seed makers barrel into technology business. Wall Street Journal (Online), 26.
Carolan, M. (2017). Publicising food: big data, precision agriculture, and co-experimental techniques of addition. Sociologia Ruralis, 57(2), 135–154. doi: 10.1111/soru.12120
Casey, N. (2016). What it means to be a farming smallholder in Malaysia. Agriculture Science Journal, 2(1), 40–48.
http://eprints.utar.edu.my/2000/1/What_it_means_to_be_a_farming_smallholder_in_Malaysia.pdf
Cynthia, H. (2017). *Top Big Data Challenges*. Datamation. https://www.datamation.com/big-data/big-data-challenges.html
Del Giudice, M. , Di Vaio, A. , Hassan, R. , & Palladino, R. (2021). Digitalization and new technologies for sustainable business models at the ship–port interface: A bibliometric analysis. Maritime Policy & Management, 1–37.
Department of Statistics Malaysia . (2019). *Press Release Malaysia Economic Performance Fourth Quarter 2018*.
https://www.dosm.gov.my/v1/index.php?r=column/pdfPrev&id=aHRydmZMSmtNL0lTbW43SjVOSlZkQT09
Di Vaio, A. , Palladino, R. , Hassan, R. , & Escobar, O. (2020). Artificial intelligence and business models in the sustainable development goals perspective: A systematic literature review. Journal of Business Research, 121, 283–314.
Dontha, R. (2017). *Who came up with the name Big Data? - Data Science Central*. Data Science Central. https://www.datasciencecentral.com/profiles/blogs/who-came-up-with-the-name-big-data
Dutta, S. , Lanvin, B. , & Wunsch-Vincent, S. (2018). *Global Innovation Index 2018: Energising the World with Innovation*, 11th ed.
https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2018.pdf
Elsheikh, R. , Mohamed Shariff, A. R. B. , Amiri, F. , Ahmad, N. B. , Balasundram, S. K. , & Soom, M. A. M. (2013). Agriculture Land Suitability Evaluator (ALSE): A decision and planning support tool for tropical and subtropical crops. Computers and Electronics in Agriculture, 93, 98–110. doi: 10.1016/j.compag.2013.02.003
Foodtank . (2019). *Bigger Data, Smaller Farms: The Role of Big Data in Sustainable Intensification – Food Tank*. 1–4. https://foodtank.com/news/2019/01/bigger-data-smaller-farms-the-role-of-big-data-in-sustainable-intensification/
Gandomi, A. , & Haider, M. (2015). Beyond the hype: Big data concepts, methods, and analytics. International Journal of Information Management, 35(2), 137–144. doi: 10.1016/j.ijinfomgt.2014.10.007
Gartner . (2020). *Big Data*. Gartner Glossary. https://www.gartner.com/en/information-technology/glossary/big-data
Global Forum for Rural Advisory Services . (2020). *GFRAS - Agripreneurship*. The Role of RAS for Inclusive Agripreneurship. https://www.g-fras.org/en/agripreneurship.html
Haris, N. B. M. , Garrod, G. , Gkartzios, M. , & Proctor, A. (2018). The decision to adopt organic practices in Malaysia; a mix-method approach. Agricultural Economics Society, 273485, 1–21. https://ageconsearch.umn.edu/record/273485/files/Mohamed_NurBahiah_Nur-OrganicFarmingAdoptioninMalaysia.pdf
Hashem, I. A. T. , Yaqoob, I. , Anuar, N. B. , Mokhtar, S. , Gani, A. , & Ullah Khan, S. (2015). The rise of “big data” on cloud computing: Review and open research issues. Information Systems, 47, 98–115. doi: 10.1016/j.is.2014.07.006
Hedley, C. (2015). The role of precision agriculture for improved nutrient management on farms Application of Precision Farming in New Farms, 2(April), 12–19. doi: 10.1002/jsfa.6734
Hussain, A. , Shahzad, A. , & Hassan, R. (2020). Organizational and environmental factors with the mediating role of e-commerce and SME performance. Journal of Open Innovation: Technology, Market, and Complexity, 6(4), 196.
Hussain, A. , Shahzad, A. , Hassan, R. , & Doski, S. A. (2021). COVID-19 impact on B2B e-commerce: A multi-group analysis of sports and surgical SME’s. Pakistan Journal of Commerce and Social Sciences (PJCSS), 15(1), 166–195.
Iza, C. L. B. , Dentoni, D. , Mordini, M. , Isubikalu, P. , Oduol, J. B. A. , & Omta, O. (2019). The role of farmers’ entrepreneurial orientation on agricultural innovations in Ugandan multi-

stakeholder platform. In T. S. Rosenstock , A. Nowak , & E. Girvetz (Ed.), The Climate-Smart Agriculture Papers. Springer. https://doi.org/doi:10.1007/978-3-319-92798-5_17
Jaabi, A. (2017). Smart farming is the way to go. *New Straits Times*. https://www.nst.com.my/opinion/columnists/2017/09/276234/smart-farming-way-go
Jan, S. (2015). *Smart Phones: The Latest Tool for Sustainable Farming | USDA*. U.S. Department of Agriculture. https://www.usda.gov/media/blog/2015/10/27/smart-phones-latest-tool-sustainable-farming
Jayaselan, H. A. J. , Ismail, W. I. W. , Nawi, N. M. , & Shariff, A. R. M. (2018). Determination of the optimal pre-processing technique for spectral data of oil palm leaves with respect to nutrient. Science & Technology, 26(3), 1169–1182. http://psasir.upm.edu.my/id/eprint/66309/
Kahan, D. (2013). *Food and Agriculture Organization of the United Nations Rome 2012 5 Farm Management Extension Guide Entrepreneurship in Farming*. www.fao.org/publications
Kaplan, A. , & Haenlein, M. (2019). Siri, Siri, in my hand: Who's the fairest in the land? On the interpretations, illustrations, and implications of artificial intelligence. Business Horizons, 62(1), 15–25. doi: 10.1016/j.bushor.2018.08.004
Khan, N. , Yaqoob, I. , Hashem, A. I. T. , Inayat, Z. , Ali, W. K. M. , Alam, M. , Shiraz, M. , & Gani, A. (2014). Big Data: Survey, technologies, opportunities, and challenges. The Scientific World Journal, 29(8), L1497–L1499. doi: 10.1155/2014/712826
Khokhar, T. , & Kashiwase, H. (2015). The future of the world's population in 4 charts. *The World Bank*. https://blogs.worldbank.org/opendata/future-world-s-population-4-charts
Kshetri, N. (2014). The emerging role of Big Data in key development issues: Opportunities, challenges, and concerns. Big Data & Society, 1(12), 1–20. doi: 10.1177/ 2053951714564227
Mastoi, Q.-U.-A. , Rahman, A. , & Dahlan, A. (2014). Agro-tech in Malaysia and literature review knowledge sharing from agro-technology using nations. International Journal of Scientific & Engineering Research, 5(12), 606–611. http://www.ijser.org
Michaud, J. P. (2018). Challenges to conservation biological control on the High Plains: 150 years of evolutionary rescue. Biological Control, 125, 65–73.
Mirimo, D. , & Shamsudin, M. N. (2018). Price relations between Malaysia rice sector and selected ASEAN countries. International Journal of Community Development & Management Studies, 2, 131–144.
Ndedi, A. , & Feussi, P. (2018). Unpacking agripreneurship. SSRN Electronic Journal, 1–6. doi: 10.2139/ssrn.2947103
Norasma, C. Y. N. , Shariff, A. R. M. , Jahanshiri, E. , Amin, M. , Khairunniza-Bejo, S. , & Mahmud, A. R. (2013). Science & technology web-based decision support system for paddy planting management. Pertanika Journal of Science & Technology, 21(2), 343–364. http://www.pertanika.upm.edu.my/
Oluoch-Kosura, W. (2010). Institutional innovations for smallholder farmers' competitiveness in Africa. African Journal of Agricultural and Resource Economics, 5(1), 227–242. https://ageconsearch.umn.edu/record/156660/?ln=en
Oracle . (2019). *What is Big Data? | Oracle*. What Is Big Data? https://www.oracle.com/big-data/guide/what-is-big-data.html
Peter, G. (2019). Asian farmers cultivate big data for richer harvest – Nikkei Asian Review. *Asian Review*. https://asia.nikkei.com/Business/Startups/Asian-farmers-cultivate-big-data-for-richer-harvest2
Protopop, I. , & Shanoyan, A. (2016). Big Data and smallholder farmers: Big Data applications in the agri-food supply chain in developing countries. International Food and Agribusiness Management Review, 19 (June), 173–190. https://www.researchgate.net/publication/306346048_Big_Data_and_Smallholder_Farmers_Big_Data_Applications_in_the_Agri-Food_Supply_Chain_in_Developing_Countries
Schwab, K. (2018). *The Global Competitiveness Report 2018*. http://www3.weforum.org/docs/GCR2018/05FullReport/TheGlobalCompetitivenessReport2018.pdf
Shahzad, A. , Hassan, R. , Abdullah, N. I. , Hussain, A. , and Fareed, M. (2020a). COVID-19 impact on e-commerce usage: An empirical evidence from Malaysian healthcare industry. Humanities & Social Sciences Reviews, 8(3), 599–609.
Shahzad, A. , Hassan, R. , Aremu, A. Y. , Hussain, A. , and Lodhi, R. N. (2020b). Effects of COVID-19 in e-learning on higher education institution students: The group comparison between male and female. Quality & Quantity, 1–22.

Shahzad, A. , Yaqub, R. M. S. , Di Vaio, A. , & Hassan, R. (2021). Antecedents of customer loyalty and performance improvement: Evidence from Pakistan's telecommunications sector. Utilities Policy, 70, 101208.
Sharma, C. V. (2020). *Agripreneurship*. https://www.researchgate.net/publication/341592853_AGRIPRENEURSHIP
Shirkhorshidi, A. S. , Aghabozorgi, S. , Wah, T. Y. , & Herawan, T. (2014). Big Data clustering: A review. *Big Data Clustering: A Review Ali*, 707–720. https://umexpert.um.edu.my/file/publication/00012975_108080.pdf
Soni, V. K. (2018). *Big Data*. Zaptox. https://www.zaptox.com/big-data/
Strong, C. (2015). Humanising big data: Marketing at the meeting of data, social science and consumer insight. London, UK: Kogan Page Publishers.
Sundmaeker, C. , Verdouw, S. , Wolfert, L. , & Pérez, F. (2016). Internet of food and farm 2020. O. Vermesan , P. Friess (Eds.), Digitising the Industry – Internet of Things Connecting Physical, Digital and Virtual Worlds. Gistrup, Denmark: River Publishers.
Syed, E. , Azhar, A. , Fong-Woon, L. , & Rohail, H. (2020, November). Socio-economic factors on sector-wide systematic risk of information security breaches: Conceptual framework. In *Proceedings of the International Economics and Business Management Conference* , Melaka, Malaysia (pp. 2–3).
United Nations . (2017). *World Population Projected to Reach 9.8 Billion in 2050, and 11.2 Billion in 2100*. United Nations Department of Economic and Social Affairs. https://www.un.org/development/desa/en/news/population/world-population-prospects-2017.html
Rijmenam, M Van. (2019). *A Short History of Big Data*. Datafloq. https://datafloq.com/read/big-data-history/239
Yusoff, A. , Ahmad, N. H. , & Halim, H. A. (2016). Entrepreneurial orientation and agropreneurial intention among Malaysian agricultural students: The impact of agropreneurship education. Advances in Business-Related Scientific Research Journal, 7(1), 77–92.

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2020 Datanami Readers' Choice Awards . (2020). Retrieved from https://www.datanami.com: https://www.datanami.com/2020-datanami-readers-choice-awards/
Bajwa, S. , Wang, X. , Nguyen Duc, A. , Chanin, R. , Prikladnicki, R. , Pompermaier, L. & Bajwa, S. (2017, May). Start-ups must be ready to pivot. *IEEE Software, 34*, 18–22. Retrieved from https://www.researchgate.net/publication/316945271_Start-Ups_Must_Be_Ready_to_Pivot
Cockroach Labs caps two years of exceptional growth by raising $86.6M of new investment . (2020, May 05). Retrieved from https://www.prnewswire.com/news-releases/cockroach-labs-caps-two-years-of-exceptional-growth-by-raising-86-6m-of-new-investment-301052418.html
Conklin, A. (2020, March 29). 10 successful startups founded during 2008 Great Recession. *Fox Business*. Retrieved from https://www.foxbusiness.com/markets/startups-great-recession
Data management startup Okera emerges from stealth with $14.6 million in funding . (2018, May 22). Retrieved from https://www.dbta.com: https://www.dbta.com/Editorial/News-Flashes/Data-Management-Startup-Okera-Emerges-from-Stealth-with-146-Million-in-Funding-125193.aspx
Deutscher, M. (2020, May 05). Database startup Cockroach Labs reels in $86.6M funding round. *SiliconANGLE*. Retrieved from https://siliconangle.com: https://siliconangle.com/2020/05/05/database-startup-cockroach-labs-reels-86-6m-funding-round/
ETHealthWorld . (2019, 05). Indian e-pharma market poised to touch US$2.7 billion by 2023: EY. Retrieved from https://health.economictimes.indiatimes.com/news/pharma/indian-e-pharma-market-poised-to-touch-us2-7-billion-by-2023-ey/69557064
Flint, M. (2019, 11 8). Poor cash flow – How to recognize it and how you can make sure it won't be a problem. *Preferred CFO*. Retrieved from https://www.preferredcfo.com/cash-flow-reason-small-businesses-fail/
Flockett, A. (2020). Cazoo reaches unicorn status is record time. *Startups Magazine*. Retrieved from https://startupsmagazine.co.uk/article-cazoo-reaches-unicorn-status-record-time#

Kalita, S. M. (2012, October 20). An economic recovery will kill Airbnb. *Quartz*. Retrieved from https://qz.com/17766/an-economic-recovery-will-kill-airbnb/

Karnes, K. (2020, January 28). Customer Life-time Value: What is it and how to calculate. *CleverTap*. Retrieved from https://clevertap.com/blog/customer-lifetime-value/

Lunden, I. (2020, March 23). Cazoo, the used car sales portal, raises another 116m. *TechCrunch*. Retrieved from https://techcrunch.com/2020/03/23/cazoo-the-used-car-sales-portal-raises-another-116m/

McLaughlin, K. (2019, June 4). Cockroach Labs stands up to Amazon's Open Source offensive. *The Information*. Retrieved from https://www.theinformation.com/articles/cockroach-labs-stands-up-to-amazons-open-source-offensive

Miller, R. (2020, May 05). Cockroach Labs scores $86.6m Series D as scalable database resonates. *TechCrunch*. Retrieved from https://techcrunch.com/2020/05/05/cockroach-labs-scores-86-6m-series-d-as-scalable-database-resonates/

Minimum Viable Product (MVP) . (2020, March 30). Retrieved from https://www.techopedia.com/: https://www.techopedia.com/definition/27809/minimum-viable-product-mvp

O'Dell, J. (2012, February 21). Google buys what's left of defunct search startup Cuil. *Reuters*. Retrieved from https://www.reuters.com: https://www.reuters.com/article/idUS60851776220120220

Okera named a cool vendor by Gartner . (2020, November 3). Retrieved from https://www.prnewswire.com/news-releases/okera-named-a-cool-vendor-by-gartner-301165268.html

Pagan Research . (2019, November 18). The 40 Most Promising Big Data Startups In The World! Retrieved from https://paganresearch.io/blog-details/the-40-most-promising-big-data-startups-in-the-world

PCMagStaff . (2008, July 28). The new Cuil search engine sucks. *PCMag*. Retrieved from https://www.pcmag.com/archive/the-new-cuil-search-engine-sucks-230287

Pilcher, R. (2020, February 20). What are unit economics and why are they important in early stage startups? *Ligher Capital*. Retrieved from https://www.lightercapital.com/blog/what-are-unit-economics/

Punamiya, V. (2020, January 20). Observe.AI – this AI-powered agent will take your operational efficiency to next level. *Startup Talky*. Retrieved from https://startuptalky.com/observe-ai-success-story/#

Putrevu, S. (2020, January 28). Why San Francisco-based voice AI platform Observe.ai found a target market first and then built a product. *YourStory*. Retrieved from https://yourstory.com/2019/12/san-francisco-observe-ai-voice-customer-experience-product

Rastogi, V. (2020, May 14). Micro, small, and medium enterprises in India – an explainer. *India Briefing*. Retrieved from https://www.india-briefing.com/: https://www.india-briefing.com/news/micro-small-medium-enterprises-india-explainer-17887.html/

Ryan Gavin, C. L. (2020, April 30). The B2B digital inflection point: How sales have changed during COVID-19. *McKinsey.com*. Retrieved from https://www.mckinsey.com/: https://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/the-b2b-digital-inflection-point-how-sales-have-changed-during-covid-19

Sajid, A. (2020, August 6). 70 best startups you need to watch out for in 2020. *Cloudways*. Retrieved from https://www.cloudways.com/blog/best-startups-watch-out/#ai

Shimel, A. (2019, October 31). DevOps chat: Scaling data without complexity with Cockroach Labs. *DevOps.com*. Retrieved from https://devops.com/devops-chat-scaling-data-without-complexity-with-cockroach-labs/

Silicon Canals Editorial Team. (2020, June 24). How this European unicorn is trying to make buying cars online as easy as smartphones. *Silicon Canals*. Retrieved from https://siliconcanals.com/news/startups/travel-mobility/european-startup-cazoo-becomes-unicorn/

Sobti, R. (2020, April 12). Covid-19 lockdown could be a good time for MSMEs to log-in | Opinion. Retrieved from https://www.hindustantimes.com/: https://www.hindustantimes.com/opinion/covid-19-lockdown-could-be-a-good-time-for-msmes-to-log-in-opinion/story-QDmpw4vV1LLxL4BsbzOn6L.html

Soni, S. (2018, March). Decoding Byju's Journey From Start-up to Unicorn. Retrieved from https://www.entrepreneur.com: https://www.entrepreneur.com/article/310403

Sullivan, D. (2008, July 28). Cuil Launches – Can This Search Start-Up Really Best Google? Retrieved from https://searchengineland.com/: https://searchengineland.com/cuil- launches-can-this-search-start-up-really-best-google-14459
The top 20 reasons startups fail . (2019, 11). Retrieved from https://www.cbinsights.com/research/startup-failure-reasons-top/
The ultimate startup failure rate report [2020] . (2020). Retrieved from https://www.failory.com/blog/startup-failure-rate
U.S. Small Business Administration. Office of Advocacy. Frequently asked questions . (2016, June). Retrieved from https://www.sba.gov/sites/default/files/advocacy/SB-FAQ-2016_WEB.pdf
Used car website Cazoo launches . (2019, December 02). *Fleet News*. Retrieved from https://www.fleetnews.co.uk/news/fleet-industry-news/2019/12/02/used-car-website-cazoo-launches
Wasserman, N. (2014, 02). Fighting co-founders doom startups. *CNN Money*. Retrieved from https://money.cnn.com/2014/02/24/smallbusiness/startups-entrepreneur-cofounder/
Whiting, R. (2019, August 21). Lifeguard on duty: Startup Okera offers tools for governing access to data lakes. *CRN*. Retrieved from https://www.crn.com: https://www.crn.com/news/applications-os/lifeguard-on-duty-startup-okera-offers-tools-for-governing- access-to-data-lakes
Whiting, R. (2020, June 19). The 10 hottest Big Data startups of 2020 (so far). *CRN*. Retrieved from https://www.crn.com/slide-shows/applications-os/the-10-hottest-big-data-startups-of-2020-so-far-/4
Woodie, A. (2018, May 23). Okera emerges from stealth with Big Data fabric. *Datanami*. Retrieved from https://www.datanami.com: https://www.datanami.com/2018/05/23/okera-emerges-from-stealth-with-big-data-fabric/

The Influential Role of Breakthrough Strategies of the Family Business and Its Implication in Entrepreneurship

The authors have retrieved primary data by visiting the founder's office in Thane, Mumbai, namely Mr. Ravindra Prabhudesai, and his son Mr. Parikshit Prabhudesai on 20 August 2018. The formal and informal interview took place over four days, where Mr. Prabhudesai helped us meet his junior staff, executive staff that was part of his journey from the foundation day. The staffs were very co-operative in providing information about the steppingstones of Pitambari and their challenges. We were also privileged to meet their other family members, who were very kind and humble to us in providing information.

Dandin, S. V. , & Mench, R. (2015). Development and implementation of Kaizen activities in an automobile manufacturing firm. Development, 2(6), 60–65.
Dhanavade, B. V. , & Pandya, A. (2017). A comprehensive review on Vrishan Karma (aphrodisiac action) by Piyush (cow colostrum). Journal of Ayurveda and Integrated Medical Sciences *(ISSN 2456-3110)*, 2(2), 139–142.
Ebina, T. , Sato, A. , Umezu, K. , Ishida, N. , Ohyama, S. , Oizumi, A. , … & Kitaoka, S. (1985). Prevention of rotavirus infection by oral administration of cow colostrum containing antihumanrotavirus antibody. Medical Microbiology and Immunology, 174(4), 177–185.
Gujarathi, R. A. , Dwivedi, R. , & Vyas, M. K. (2014). An observational pilot study on the effect of GomutraHaritaki, diet control and exercise in the management of Sthaulya (obesity). Ayu, 35(2), 129.
Kaviani, M. , Darjani, Z. , Tomovska, J. , Mazandarani, Z. , & Shariati, M. A. (2015). Comparing different extraction methods of sesame oil. International Journal of Pharmaceutical Research and Allied Sciences, 4(2), 22–25.
Martel, J. P. (1981). *U.S. Patent No. 4,257,945*. Washington, DC: U.S. Patent and Trademark Office.
Periasamy, S. , Chien, S. P. , Chang, P. C. , Hsu, D. Z. , & Liu, M. Y. (2014). Sesame oil mitigates nutritional steatohepatitis via attenuation of oxidative stress and inflammation: a tale of two-hit hypothesis. The Journal of Nutritional Biochemistry, 25(2), 232–240.
Saini, N. K. (2016). Clinical trial of gomutra (cows urine) in obesity management. International Journal of Ayurveda and Pharma Research, 10, 54–57.

Tiwari, P. (2017). Assessment of the practices and challenges of Kaizen implementation in micro and small enterprises: The case of manufacturing enterprises. International Journal of Engineering and Management Research (IJEMR), 7(4), 313–322.
Waithaka, P. N. , Gathuru, E. M. , Githaiga, B. M. , & Kwoko, J. M. (2016). Making of perfumes from essential oils extracted from lavender plant collected from Egerton University, Main Campus Njoro, Kenya. Pyrex Journal of Biomedical Research, 2(6), 35–40.
http://pitambari.com/Healthcare/Gomutra-Plus/index.html
http://pitambari.com/Healthcare/Gopiyush-Capsules/index.html

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Abdullah, N. A. H. , Ahmad, A. H. , Zainudin, N. , & Rus, R. M. (2016). Modelling small and medium-sized enterprises' failure in Malaysia. International Journal of Entrepreneurship and Small Business, 28(1), 101–116.
Ahmad, N. H. (2007). *A cross cultural study of entrepreneurial competencies and entrepreneurial success in SMEs in Australia and Malaysia* (Doctoral dissertation, University of Adelaide).
Ahmad, N. H. , Halim, H. A. , & Zainal, S. R. M. (2010). Is entrepreneurial competency the silver bullet for SME success in a developing nation. International Business Management, 4(2), 67–75.
Ahmad, N. H. , Suseno, Y. , Seet, P. S. , Susomrith, P. , & Rashid, Z. (2018). Entrepreneurial competencies and firm performance in emerging economies: A study of women entrepreneurs in Malaysia. In V. Ratten , V. Braga , & C. Marques (Eds.), Knowledge, learning and innovation: Contributions to management science (pp. 5–26). Springer, Cham. https://doi.org/10.1007/978-3-319-59282-4_2
Aisha, A. N. , Sudirman, I. , & Siswanto, J. (2016, September). Conceptual model of entrepreneurial, managerial and technical software competencies towards SME performance in subsector software industries. In *2016 IEEE International Conference on Management of Innovation and Technology (ICMIT)* (pp. 237–242). IEEE.
Al-Ansari, Y. D. Y. (2014). *Innovation practices as a path to business growth performance: a study of small and medium sized firms in the emerging UAE market* (Doctoral dissertation, Southern Cross University).
Aldrich, H. E. , & Yang, T. (2014). How do entrepreneurs know what to do? Learning and organizing in new ventures. Journal of Evolutionary Economics, 24(1), 59–82.
Ali, K. A. , & Iskandar, N. I. N. (2016). The effect of business innovation capability, entrepreneurial competencies and quality management towards the performance of Malaysian SMEs. International Journal of Business Economics and Law, 10(2), 7–13.
Aman, O. , Tahir, M. N. H. , Majid, I. A. , Aziz, N. A. A. , & Rahmiati, F. (2011). The success factors of food small medium entrepreneurs under the one district one industry programme: A case on food manufacturing entrepreneurs in Melaka. Journal of Global Entrepreneurship, 1(1), 44–64.
Amenta, E. , & Ramsey, K. M. (2010). Institutional theory. In Handbook of politics (pp. 15–39). New York: Springer.
Anuar, K. , Ali, M. , Izzaty, N. , Nik, N. , & Iskandar, M. (2016). The effect of business innovation capability, entrepreneurial competencies and quality management towards the performance of Malaysian SMEs. International Journal of Business, Economics and Law, 10(2), 7–13.
Argote, L. , & Miron-Spektor, E. (2011). Organizational learning: From experience to knowledge. Organization Science, 22(5), 1123–1137.
Arham, A. F. (2014). Leadership and performance: The case of Malaysian SMEs in the services sector. International Journal of Asian Social Science, 4(3), 343–355.
Baer, M. , & Frese, M. (2003). Innovation is not enough: Climates for initiative and psychological safety, process innovations, and firm performance. Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior, 24(1), 45–68.
Baron, R. A. (1998). Cognitive mechanisms in entrepreneurship: Why and when entrepreneurs think differently than other people. Journal of Business venturing, 13(4), 275–294.

Buttner, E. H. , & Moore, D. P. (1997). Women's organizational exodus to entrepreneurship: Self-reported motivations and correlates with success. Journal of Small Business Management, 35, 34–46.
Centobelli, P. , Cerchione, R. , & Esposito, E. (2018a, September). Knowledge alignment in small and medium enterprises: A novel FST method. In European conference on knowledge management (pp. 141–153). Academic Conferences International Limited.
Centobelli, P. , Cerchione, R. , & Esposito, E. (2018b). Environmental sustainability and energy-efficient supply chain management: A review of research trends and proposed guidelines. Energies, 11(2), 275.
Chandler, G. N. , & Hanks, S. H. (1994). Market attractiveness, resource-based capabilities, venture strategies, and venture performance. Journal of Business Venturing, 9(4), 331–349.
Chhabra, M. (2018). Gender gap in 'success factors' among entrepreneurs: A study of micro and small enterprises. SEDME (Small Enterprises Development, Management & Extension Journal), 45(2), 1–17.
Chhabra, M. , Gera, R. , Hassan, R. , & Hasan, S. (2020). An exploratory study of cognitive, social and normative dimensions of female entrepreneurship within transition economies: Evidence from India and Vietnam. Pakistan Journal of Commerce and Social Sciences (PJCSS), 14(4), 1012–1042.
Chhabra, M. , & Goyal, A. P. (2019). Education and entrepreneurial experience WRT female entrepreneurs. International Journal of Research in Humanities, Arts and Literature, 7, 95–110.
Chhabra, M. , & Karmarkar, Y. (2016a). Effect of gender on inception stage of entrepreneurs: Evidence from small and micro enterprises in Indore. SEDME (Small Enterprises Development, Management & Extension Journal), 43(3), 1–16.
Chhabra, M. , & Karmarkar, Y. (2016b). Gender gap in entrepreneurship – a Study of Small and Micro Enterprises. ZENITH International Journal of Multidisciplinary Research, 6(8), 82–99.
Creswell, J. W. , & Clark, V. L. P. (2017). Designing and conducting mixed methods research. Thousand Oaks, CA: Sage Publications.
Didonet, S. R. , Fearne, A. , & Simmons, G. (2020). Determining the presence of a long-term/short-term dilemma for SMEs when adopting strategic orientation to improve performance. International Small Business Journal, 38(2), 90–110.
Gilman, M. W. , & Edwards, P. K. (2008). Testing a framework of the organization of small firms: Fast-growth, high-tech SMEs. International Small Business Journal, 26(5), 531–558.
Goldman, E. , & Scott, A. R. (2016). Competency models for assessing strategic thinking. Journal of Strategy and Management, 9(3), 258–280.
Gümüsay, A. A. , & Bohné, T. M. (2018). Individual and organizational inhibitors to the development of entrepreneurial competencies in universities. Research Policy, 47(2), 363–378.
Hair, J. F. Jr , Sarstedt, M. , Hopkins, L. , & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM). European Business Review, 26(2), 106–121.
Hair, J. F. Jr , Sarstedt, M. , Ringle, C. M. , & Gudergan, S. P. (2017). Advanced issues in partial least squares structural equation modeling. Thousand Oaks, CA: Sage Publications.
Halim, H. A. , Ahmad, N. H. , Ramayah, T. , Hanifah, H. , Taghizadeh, S. K. , & Mohamad, M. N. (2015). Towards an innovation culture: Enhancing innovative performance of Malaysian SMEs. Academic Journal of Interdisciplinary Studies, 4(2), 85.
Hashim, N. A. B. , Raza, S. , & Minai, M. S. (2018). Relationship between entrepreneurial competencies and small firm performance: Are dynamic capabilities the missing link? Academy of Strategic Management Journal, 17(2), 1–10.
Hassan, T. M. R. T. , Yaacob, M. R. , & Abdullatiff, N. K. (2014). Sustaining SMEs wood-based product manufacturing through best practices–The case of indigenous entrepreneurs in Kelantan. Procedia-Social and Behavioral Sciences, 115, 221–234.
Headd, B. (2003). Redefining business success: Distinguishing between closure and failure. Small Business Economics, 21(1), 51–61.
Hoopes, D. G. , Madsen, T. L. , & Walker, G. (2003). Guest editors' introduction to the special issue: Why is there a resource-based view? Toward a theory of competitive heterogeneity. Strategic Management Journal, 24(10), 889–902.
Idris, F. , Komariah, A. , & Riadini, B. (2020). The influence of entrepreneurship education on business success and graduate recruitment. Journal of Talent Development and Excellence, 12(1), 251–262.

Idris, F. , Rahman, N. M. N. A. , Hassan, M. E. M. , Aminudin, N. , & Alolayyan, M. N. (2013). Validating dimensions of operations flexibility in Malaysian service firms: a confirmatory factor analytics approach. International Journal of Services and Operations Management, 14(1), 79–94.

Jalali, A. , Jaafar, M. , & Ramayah, T. (2014). Entrepreneurial orientation and performance: The interaction effect of customer capital. World Journal of Entrepreneurship, Management and Sustainable Development, 10(1), 48.

Jiang, K. , Hu, J. , Hong, Y. , Liao, H. , & Liu, S. (2016). Do it well and do it right: The impact of service climate and ethical climate on business performance and the boundary conditions. Journal of Applied Psychology, 101(11), 1553.

Karmarkar, Y. , Chabra, M. , & Deshpande, A. (2014). Entrepreneurial leadership style(s): A taxonomic review. Annual Research Journal of Symbiosis Centre for Management Studies, 2(1), 156–189.

Kaur, H. , & Bains, A. (2013). Understanding the concept of entrepreneur competency. Journal of Business Management and Social Sciences Research, 2(11), 31–33.

Khalique, M. , Shah, M. T. A. , & Hina, K. (2018). Towards a better understanding of intellectual capital in small and medium enterprises (SMEs) operating in service sector. Global Management Journal for Academic & Corporate Studies, 8(1), 78–85.

Kheng, Y. K. , Mahmood, R. , & Beris, S. J. H. (2013). A conceptual review of innovative work behavior in knowledge intensive business services among knowledge workers in Malaysia. International Journal of Business, Humanities and Technology, 3(2), 91–99.

Kheng, L. K. , & Minai, M. S. (2016). The network characteristic of Chinese SMEs in Malaysia and their performance. In Proceedings of the ASEAN Entrepreneurship Conference 2014 (pp. 39–47). Springer, Singapore.

Kuada, J. (2015). Private enterprise-led economic development in Sub-Saharan Africa: the human side of growth. New York: Springer.

Lockett, A. , Thompson, S. , & Morgenstern, U. (2009). The development of the resource-based view of the firm: A critical appraisal. International Journal of Management Reviews, 11(1), 9–28.

Lumpkin, G. T. , & Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. Academy of Management Review, 21(1), 135–172.

Luo, Y. , & Child, J. (2015). A composition-based view of firm growth. Management and Organization Review, 11(3), 379–411.

Maciariello, J. (2009). Marketing and innovation in the Drucker Management System. Journal of the Academy of Marketing Science, 37(1), 35–43.

Man, T. W. , & Lau, T. (2000). Entrepreneurial competencies of SME owner/managers in the Hong Kong services sector: A qualitative analysis. Journal of Enterprising Culture, 8(3), 235–254.

Man, T. W. , Lau, T. , & Chan, K. F. (2002). The competitiveness of small and medium enterprises: A conceptualization with focus on entrepreneurial competencies. Journal of Business Venturing, 17(2), 123–142.

Memon, M. A. , Ting, H. , Ramayah, T. , Chuah, F. , & Cheah, J. H. (2017). A review of the methodological misconceptions and guidelines related to the application of structural equation modeling: A Malaysian scenario. Journal of Applied Structural Equation Modeling, 1(1), 1–13.

Mohamad Radzi, K. , Mohd Nor, M. N. , & Ali, S. M. (2017). The impact of internal factors on small business success: A case of small enterprises under the FELDA scheme. Asian Academy of Management Journal, 22(1), 1–29.

Mohammadkazemi, R. , Rasekh, N. , & Navid, M. (2016). The effect of entrepreneurial competencies on innovation: A case study of professional sport clubs. International Business Research, 9(11), 57–64.

Mohsin, A. M. B. A. , Halim, H. A. , & Farhana, N. (2017). Assessing the role of entrepreneurial competencies on innovation performance: A partial least squares (PLS) approach. The Journal of Business Inquiry, 16(1 Spec), 88–101.

National Entrepreneurship and SME Development Council . Aligning SMEs to the Megatrend, SME Annual Report 2016/17. Retrieved https://www.smecorp.gov.my/index.php/en/sme-annual-report-2015-16?id=2150

North, K. , & Varvakis, G. (2016). Competitive strategies for small and medium enterprises. Increasing crisis resilience, agility and innovation in turbulent times. Cham: Springer.

Orme, G. , & Ashton, C. (2003). Ethics – a foundation competency. Industrial and Commercial Training, 35(5), 184–190.
Rahman, S. A. , Amran, A. , Ahmad, N. H. , & Taghizadeh, S. K. (2014). Prospective entrepreneurial competencies to ensure subjective wellbeing of the entrepreneurs at the base of pyramid. *Proceedings Book of ICBSSS, 2014, Malaysia*, 56–64.
Rahman, S. A. , Taghizadeh, S. K. , Ramayah, T. , & Ahmad, N. H. (2015). Service innovation management practices in the telecommunications industry: What does cross country analysis reveal?. SpringerPlus, 4(1), 810.
Rahman, N. A. , Yaacob, Z. , & Radzi, R. M. (2016). The challenges among Malaysian SME: A theoretical perspective. World, 6(3), 124–132.
Ramayah, T. , Ling, N. S. , Taghizadeh, S. K. , & Rahman, S. A. (2016). Factors influencing SMEs website continuance intention in Malaysia. Telematics and Informatics, 33(1), 150–164.
Ritter, T. , Wilkinson, I. F. , & Johnston, W. J. (2002). Measuring network competence: Some international evidence. Journal of Business and Industrial Marketing, 17(2–3), 119–138.
Singh, D. , & Chhabra, M. (2020). Attainment of customer's satisfaction in digital food apps industry through result-oriented management. International Journal of Management (IJM), 11(12), 2527–2543.
Smith, M. F. , Sinha, I. , Lancioni, R. , & Forman, H. (1999). Role of market turbulence in shaping pricing strategy. Industrial Marketing Management, 28(6), 637–649.
Tahir, H. M. , Razak, N. A. , & Rentah, F. (2018, March). The contributions of small and medium enterprises (SMEs) on Malaysian economic growth: A sectoral analysis. In International conference on kansei engineering and emotion research (pp. 704–711). Springer, Singapore.
Tajuddin, M. Z. M. , Iberahim, H. , & Ismail, N. (2015). Relationship between innovation and organizational performance in construction industry in Malaysia. Universal Journal of Industrial and Business Management, 3(4), 87–99.
Tehseen, S. (2017). Cultural orientations, entrepreneurial competencies, Entrepreneurial innovativeness and business success: A comparative study among Malaysian ethnic entrepreneurs in wholesale and retail SMEs. (Doctoral Dissertation, Universiti Kuala Lumpur).
Tehseen, S. , Ahmed, F. U. , Qureshi, Z. H. , Uddin, M. J. , & Ramayah, T. (2019a). Entrepreneurial competencies and SMEs' growth: The mediating role of network competence. Asia-Pacific Journal of Business Administration, 11(1), 2–29.
Tehseen, S. , Qureshi, Z. H. , Johara, F. , & Ramayah, T. (2019b). Assessing perceived business success as a reflective-formative (Type II) second-order construct using PLS-SEM approach. Journal of Sustainability Science and Management, 14(5), 84–114.
The Canadian Centre for Data Development and Economic Research (CDER) . (2020). Retrieved 16 September 2020, from https://www.statcan.gc.ca/eng/cder/index
Venkatraman, N. , & Camillus, J. C. (1984). Exploring the concept of "fit" in strategic management. Academy of Management Review, 9(3), 513–525.
Xiu-Qing, P. , & Li, C. (2013, July). The relationship between entrepreneurial learning and entrepreneurial knowledge. In 2013 International conference on management science and engineering 20th annual conference proceedings (pp. 1314–1319). IEEE.
Yusoff, T. , Wahab, S. A. , Latiff, A. S. , Osman, S. I. , Zawawi, N. F. , & Fazal, S. A. (2018). Sustainable growth in SMEs: A review from the Malaysian perspective. Journal of Management and Sustainability, 8, 43.
Zeiders, K. H. , Updegraff, K. A. , Umaña-Taylor, A. J. , McHale, S. M. , & Padilla, J. (2016). Familism values, family time, and Mexican-Origin young adults' depressive symptoms. Journal of Marriage and Family, 78(1), 91–106.

Social Entrepreneurship

Amul . (2011). Note on the achievement of the dairy co-operative. https://www.amul.com/m/a-note-on-the-achievements-of-the-dairy-cooperatives
Amul . (2019). PTI (2019, May 28). Amul aims to achieve a business turnover of Rs 50000 crores by 2021. *Economic Times*. https://economictimes.indiatimes.com/industry/cons-products/fmcg/amul-aims-to-achieve-a-business-turnover-of-rs-50000-crore-by-2021/articleshow/69546342.cms?from=mdr

Ashoka . (n.d.). Harish Hande. https://www.ashoka.org/en-in/fellow/harish-hande
Basu, S. (2018, November 12). A Madurai-based hospital and Google are working together to stop early blindness. *The Hindu*. https://www.thehindu.com/sci-tech/technology/an-ai-for-an-eye/article25476723.ece
Chhabra, M. (2018a). Ecopreneurship as a solution to environmental issues and challenges: State-of-the-art and future perspective. In Dahiya, S. (Ed.), Sustainability and digitalization: Present reality and future prospects, Sudha Enterprises, Rewari (Haryana), 35–46.
Chhabra, M. (2018b). Gender gap in “success factors” among entrepreneurs: A study of micro and small enterprises. SEDME (Small Enterprises Development, Management & Extension Journal), 45(2), 1–17.
Chhabra, M. , Gera, R. , Hassan, R. , & Hasan, S. (2020). An exploratory study of cognitive, social and normative dimensions of female entrepreneurship within transition economies: Evidence from India and Vietnam. Pakistan Journal of Commerce and Social Sciences (PJCSS), 14(4), 1012–1042.
Chhabra, M. , & Goyal, A. P. (2019). Education and entrepreneurial experience WRT female entrepreneurs. International Journal of Research in Humanities, Arts and Literature, 7, 95–110.
Chhabra, M. , & Karmarkar, Y. (2016a). Effect of gender on inception stage of entrepreneurs: Evidence from small and micro enterprises in Indore. SEDME (Small Enterprises Development, Management & Extension Journal), 43(3), 1–16.
Chhabra, M. , & Karmarkar, Y. (2016b). Gender gap in entrepreneurship a Study of Small and Micro Enterprises. ZENITH International Journal of Multidisciplinary Research, 6(8), 82–99.
Dao, H. C. , & Martin, B. C. (2017). Hybrid social enterprise business model synergy: Creation of a measure. In Hybrid ventures. Emerald Publishing Limited. 95–97.
Fruandes . (2020). Impact report. https://fruandes.com/assets/FRUANDES-INFORME-IMPACTO.pdf
Gandhi, T. , & Raina, R. (2018). Social entrepreneurship: the need, relevance, facets and constraints. Journal of Global Entrepreneurship Research, 8(1), 9.
Google India . (2020, February 13). Applying AI to big problems—six research projects we’re supporting in public health, education, disaster prevention, and conservation. https://india.googleblog.com/2020/02/applying-ai-to-big-problemssix-research.html
Karmarkar, Y. , Chabra, M. , & Deshpande, A. (2014). Entrepreneurial leadership style(s): A taxonomic review. Annual Research Journal of Symbiosis Centre for Management Studies, 2(1), 156–189.
Kickul, J. , & Lyons, T. S. (2020). Understanding social entrepreneurship: The relentless pursuit of mission in an everchanging world. Oxfordshire: Routledge.
Kramer, M. R. , & Foundation Strategy Group . (2005). *Measuring innovation: Evaluation in the field of social entrepreneurship*. https://community-wealth.org/sites/clone.community-wealth.org/files/downloads/report-kramer.pdf
Kramer, M. , Graves, R. , Hirschhorn, J. , & Fiske, L. (2007). From insight to action: New directions in foundation evaluation. *FSG Social Impact Advisors*.
Lazzarini, S. G. (2018). The measurement of social impact and opportunities for research in business administration. RAUSP Management Journal, 53(1), 134–137.
London, T. (2009). Making better investments at the base of the pyramid. Harvard Business Review, 87(5), 106–113.
Maingi, C. W. , Musyoka, K. M. , Muna, F. M. , & Kioko, P. S. (2020). Social entrepreneurship in the emerging economies of Africa. In: Marques, J. , & Dhiman, S. (eds), Social entrepreneurship and corporate social responsibility: Management for professionals. Springer, Cham.
Makhlouf, H. H. (2011). Social entrepreneurship: generating solutions to global challenges. International Journal of Management & Information Systems (IJMIS), 15(1).
Manaus, C. (2013).Visionspring: Eye care for the base of the pyramid. Inter-American Development Bank. https://healthmarketinnovations.org/sites/default/files-/VisionSpring%20Process%20Evaluation.pdf
Merchant, K. A. , & Van der Stede, W. A. (2007). Management control systems: performance measurement, evaluation and incentives. Essex: Pearson Education.
Michael, A. (2017, September 3). Fruandes: Poster child of a sustainable social enterprise. Organicwellness. https://www.organicwellnessnews.com/?ArticleID=671
Mukherji, S. , & Jose, P. D. (2010). *SELCO: Harnessing sunlight to create livelihood*. https://hbsp.harvard.edu/product/IMB321-PDF-ENG

Müller, S. (2012). Business models in social entrepreneurship. In Social entrepreneurship and social business (pp. 105–131). Wiesbaden: Gabler Verlag Springer.
Prahalad, C.K. (2005). The Fortune at the Bottom of the Pyramid. USA: Wharton School Publishing.
PWC . (2014). *How to raise capital as a social entrepreneur*, 1–16. https://www.pwc.nl/nl/assets/documents/pwc-social-enterprises.pdf
Rahim, M. M. , & Wisuttisak, P. (2013). Corporate social responsibility–oriented compliances and SMEs access to global market: evidence from Bangladesh. Journal of Asia-Pacific Business, 14(1), 58–83.
Scholten, P. (2006). Social return on investment: a guide to SROI analysis. Amstelveen: Lenthe Publication.
Skoll . (2020). ARMMAN. https://skoll.org/organization/armman/
Smith, P. (2011, November 18). Yellow Leaf hammocks: A powerful example of social enterprise done well. *TriplePundit*. https://www.triplepundit.com/story/2011/yellow-leaf-hammocks-powerful-example-social-enterprise-done-well/71836
Stephens Balakrishnan, M. (2020). Business with purpose: Advancing social enterprise. Singapore: World Scientific Publishing Company.
Thake, S. , & Zadek, S. (1997). Practical people, noble causes. How to support community based social entrepreneurs. London: New Economic Foundation.
Tuan, M. (2008). Measuring and/or estimating social value creation: Insights into eight integrated cost approaches. Seattle: Bill & Melinda Gates Foundation.
UNICEF . (n.d.). Girls' education: A lifeline to development. https://www.unicef.org/sowc96/ngirls.htm#:~:text=An%20educated%20woman%20has%20the,age%20and%20have%20fewer%20children.
United Nations, Department of Economic and Social Affairs, Population Division (2019). World population prospects 2019. https://population.un.org/wpp/Publications/Files/WPP2019_Highlights.pdf
Varma, G. R. , & Ravi, J. (2017). Social entrepreneurship: A case study on Amul Dairy. International Journal & Magazine of Engineering, Technology, Management and Research, 4, 67–89.
VisionSpring . (2020). Social and economic impact of VisionSpring eyeglasses. https://visionspring.org/impact

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Akpang, C. M. , & Esege, E. E. (2014). The need for sustainability of depleting clay resources in Calabar. International Journal of Education and Research, 2(2), 1–8.
Anjum, M. (2013), *Artisanal craft pottery in South Asia (and Ethiopia) and the potential for expanding markets locally and globally* (unpublished PhD thesis). The Royal College of Art.
Banha, F. M. , Almeida, M. H. , Rebelo, E. L. , & Ramos, A. O. (2017). The main barriers of Portuguese entrepreneurship ecosystem: Interpretive Structural Modeling (ISM) approach. Tourism and Management Studies, 13(2), 60–70.
Barrutia, J. M. , Aguado, I. , & Echebarria, C. (2007). Networking for local agenda 21 implementation: learning from experiences with *Udaltalde* and *Udalsarea* in the Basque autonomous community. Geoforum, 38(1), 33–48. doi:10.1016/j.geoforum.2006.05.004
Bodke, M. (2016). Clay pot cooking: Preserve and enhance the nutrition in your food. Retrieved from http://www.wholesomeayurveda.com/2016/11/22/clay-pan-pot-cooking/
Burr, D. (1933). The Terracotta figurines. Hesperia, The Journal of the American School of Classical Studies at Athens, 2(2), 184–194. doi:10.2307/146508
Chander, M. , Jain, S. K. , & Shankar, R. (2013). Modeling of information security management parameters in Indian organisations using ISM and MICMAC approach. Journal of Modelling in Management, 8(2), 171–189. doi:10.1108/JM2-10-2011-0054
Chhabra, M. (2018a). Ecopreneurship as a solution to environmental issues and challenges: State-of-the-art and future perspective. In S. Dahiya (Ed.), Sustainability and Digitalization: Present Reality and Future Prospects (pp. 35–46). Sudha Enterprises.

Chhabra, M. (2018b). Gender gap in “success factors” among entrepreneurs: A study of micro and small enterprises. SEDME (Small Enterprises Development, Management & Extension Journal), 45(2), 1–17.
Chhabra, M. , & Karmarkar, Y. (2016). Gender gap in entrepreneurship – a study of small and micro enterprises. ZENITH International Journal of Multidisciplinary Research, 6(8), 82–99.
Dangi, V. , & Uesugi, A. (2013). A study on the Harappan painted pottery from the Ghaggar plains. Journal of the Indian Archaeological Society, 43, 194–215.
Datta, B. K. , & Chan, R. C. (2016). Planning for heritage conservation and community development: Study of historic town “Thimi” of Kathmandu valley. South Asian Journal of Tourism and Heritage, 9(1), 57–78.
Echebarria, C. , Barrutia, J. M. , & Aguado, I. (2009). The ISC framework: modelling drivers for the degree of local agenda 21 implantation in Western Europe. Environ Plan A,41(4), 80–95.
Echeta, C. , & Esege, E. (2014). Skill acquisition and the entrepreneurial factor: ceramics as an instrument of social development. Mediterranean Journal of Social Sciences, doi: 10.5901/mjss.2014.v5n6p327
Gangopadhyay, A. & Sen, A. (2019). Panchmura–the Terracotta hub of Bengal: Acontemporary socio-economic study of handicraft workers engaged in Terracotta craft. International Journal of Humanities and Social Science Studies, 5(3), 42–64. doi:10.29032/ijhsss.v5.i3.2019.42-64
Gupta, K. C. (1988). Problems and Prospects of Pottery Industry in India. Mittal Publications, New Delhi.
Jan, A. , Marimuthu, M. , Hassan, R. , & Mehreen , M. (2019). Sustainable business practices and firm’s financial performance in Islamic banking: under the moderating role of Islamic corporate governance. Sustainability, 11(23), 6606. doi:10.3390/su11236606
Lewis, K. (2008). Small firm owners in New Zealand: in it for the “good life” or growth? Small Enterprise Research, 16(1), 61–100.
Lu, C.-L. , Huang, T. , & Fang-Lin. (2019). The intersection of potters and environmental sustainability –pottery glaze cases. E3S Web of Conferences, 93, 02006, 1–5. doi:10.1051/e3sconf/20199302006
Makki, A. A. , Alidrisi, H. , Iqbal, A. , & Al-Sasi, B. O. (2020). Barriers to green entrepreneurship: an ISM-based investigation. Journal of Risk and Financial Management, 13(11), 249.
Mazzocchin, G. A. , Agnoli, F. , & Colpo, I. (2003). Investigation of Roman age pigments found on pottery fragments. Analytica Chimica Acta, 478(1), 147–161. doi:10.1016/s0003-2670(02)01476-9
McKitterick, L. , Quinn, B. , McAdam, R. & Dunn, A. (2016). Innovation networks and the institutional actor-producer relationship in rural areas: the context of artisan food production. Journal of Rural Studies, 48, 41–52. doi:10.1016/j.jrurstud.2016.09.005
Menon, J. , & Varma, S. (2010). Reading archaeological evidence. Indian Historical Review,37(2), 187–216. doi: 10.1177/037698361003700201
Middleton, A. (2007). Globalisation, free trade, and the social impact of the decline of informal production—The case of artisans in Quito, Ecuador. World Development, 35(11), 1904–1928.
Mohapatra, S. , Nayak, A. , Bhangadiya, A. , Bagchi, I. , Sharma, P. K. , & Behere, S. (2016). A dilemma of Terracotta professional – the case of implementing information systems in a Terracotta unit. Emerald Emerging Markets Case Studies,4(4), 1–26.
Panda, T. , Mishra, N. , Rahimuddin, S. , Pradhan, B. K. , Rout, S. D. , & Mohanty, R. B. (2019). Traditional clay pottery of Odisha, India. Indian Journal of Traditional Knowledge,18(2), 325–332.
Raeesi, R. , Dastrang, M. , Mohammadi, S. , & Rasouli, E. (2013). Understanding the interactions among the barriers to entrepreneurship using interpretive structural modelling. International Journal of Business and Management,8(13), 56–72.
Rice, P. M. (2015). Pottery Analysis, Second Edition: A Sourcebook, 2nd ed. Chicago: University of Chicago Press.
Sage, A. P. (1977). Interpretive Structural Modeling: Methodology for Large-Scale Systems. New York: McGraw-Hill.
Sankaran, P. N. (2018). Traditional artisans as stakeholders in CSR: A rehabilitation perspective in the Indian context. In P. N. Sankaran , Redefining Corporate Social Responsibility, 119–141. doi: 10.1108/s2043-052320180000013011
Sarma, K. (2018). A study on economic prospects and problems of Terracotta and pottery crafts of Assam with special reference to Asharikandi Village of Dhubri District. International Journal of

Management Studies, 5(2), 1–9.
Singh, M. , Shankar, R. , Narain, R. , & Agarwal, A. (2003). An interpretive structural modeling of knowledge management in engineering industries. Journal of Advances in Management Research, 1(1), 28–40. doi: 10.1108/97279810380000356
Sundaram, M. A. S. , & Bhattacharya, B. (2013). Earthenware water filter: A double edged sustainable design concept for India. In Chakrabarti, A. , & Prakash, R. V. (Eds.), Lecture Notes in Mechanical Engineering (pp. 1421–1431). New Delhi: Springer. doi: 10.1007/978-81-322-1050-4
Toledo-López, A. , Díaz-Pichardo, R. , Jiménez-Castañeda, J. C. , & Sánchez-Medina, P. S. (2012). Defining success in subsistence businesses. Journal of Business Research, 65(12), 1658–1664. doi: 10.1016/j.jbusres.2012.02.006
Tripathi, K. A. , & Singh, S. (2018). Analysis of barriers to women entrepreneurship through ISM and MICMAC: A case of Indian MSMEs. Journal of Enterprising Communities: People and Places in the Global Economy, 12(3), 346–373. doi: 10.1108/JEC-12-2017-0101
Warfield, J. W. (1974). Developing interconnected matrices in structural modelling. IEEE Transactions on Systems Men and Cybernetics, 4(1), 51–81.
Wierenga, M. (2019). Uncovering the scaling of innovations developed by grassroots entrepreneurs in low-income settings. Entrepreneurship and Regional Development, 1–28. doi: 10.1080/08985626.2019.1640478

Social Sustainability Through Women Entrepreneurs in India

Akehurst, G. , Simarro, E. , and Mas-Tur, A. (2012). Women entrepreneurship in small service firms: motivations, barriers and performance. The Service Industries Journal, 32(15), 2489–2505. doi: 10.1080/02642069.2012.677834
Ambepitiya, K. R. (2016). The role of women entrepreneurs in establishing sustainable development in developing nations. World Review of Business Research, 6(1), 161–178.
Anderson, A. R. , Li, J. H. , Harrison, R. T. and Robson, P. J. (2003). The increasing role of small business in the Chinese economy. Journal of Small Business Management, 41 (3), 310–316. Retrieved from https://rgurepository.worktribe.com/preview/296191/ANDERSON%202003%20The%20increasing%20role%20of%20small.pdf
Ashwini . (2020). Successful women entrepreneurs in India (2020 Exhaustive list). Retrieved from https://startuptalky.com/successful-women-entrepreneurs-india/
Audrestch, D. B. (2001). The dynamic role of small firms: Evidence from the U.S. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.531.6729andrep=rep1andtype=pdf
Boddy, C. R. (2016). Sample size for qualitative research. Qualitative Market Research, 19(4), pp. 426–432. doi: 10.1108/QMR-06-2016-0053
Bricki, N. , and Green, J. (2009). A guide to using qualitative research Methodology, Retrieved from https://fieldresearch.msf.org/handle/10144/84230
Brush, C. G. , and Cooper, S. Y. (2012). Female entrepreneurship and economic development: an international perspective. Entrepreneurship and Regional Development, 24(1-2),
Brush, C. G. (1992). Research on women business owners: Past trends, a new perspective and future directions. Entrepreneurship Theory and Practice, 16(4), 5–30. doi: 10.1177/104225879201600401
Brush, C. , de Bruin, A. M. , Gatewood, E. J. , and Henry, C. (2010). Women entrepreneurs and the global environment for growth: A research perspective. Cheltenham and Northampton, MA: Edward Elgar.
Castrilion, C. (2019). Why more women are turning to entrepreneurship. Retrieved from https://www.forbes.com/sites/carolinecastrillon/2019/02/04/why-more-women-are-turning-to-entrepreneurship/#73302d3a542a
CERES . (2014). CERES roadmap for sustainability – Progress report, Ceres, USA Retrieved December from http://www.ceres.org/roadmapassessment/sector-analyses/food-beverage
Chhabra, M. (2018a). Ecopreneurship as a solution to environmental issues and challenges: State-of-the-art and future perspective. In S. Dahiya (Ed.), Sustainability and digitalization:

Present reality and future prospects, Sudha Enterprises, Rewari (Haryana), pp. 35–46.
Chhabra, M. (2018b). Gender gap in “success factors” among entrepreneurs: A Study of Micro and Small Enterprises. SEDME (Small Enterprises Development, Management & Extension Journal), 45(2), 1–17.
Chhabra, M. , Gera, R. , Hassan, R. , and Hasan, S. (2020). An exploratory study of cognitive, social and normative dimensions of female entrepreneurship within transition economies: Evidence from India and Vietnam. Pakistan Journal of Commerce and Social Sciences (PJCSS), 14(4), 1012–1042.
Chhabra, M. , and Goyal, A. P. (2019). Education and entrepreneurial experience WRT female entrepreneurs. International Journal of Research in Humanities, Arts and Literature, 7, 95–110.
Chhabra, M. , & Karmarkar, Y. (2016a). Effect of gender on inception stage of entrepreneurs: Evidence from small and micro enterprises in Indore. SEDME (Small Enterprises Development, Management and Extension Journal), 43(3), 1–16.
Chhabra, M. , and Karmarkar, Y. (2016b). Gender gap in entrepreneurship – a study of small and micro enterprises. ZENITH International Journal of Multidisciplinary Research, 6(8), 82–99.
Crossman, A. (2020). An overview of qualitative research methods. Retrieved from https://www.thoughtco.com/qualitative-research-methods-3026555
Das, M. (2000). Women entrepreneurs from India: problems, motivations and success factors. Journal of Small Business and Entrepreneurship, 15(4), 67–81.
De Vita, L. , Mari, M. , and Poggesi, S. (2014). Women entrepreneurs in and from developing countries: evidences from the literature. European Management Journal, 32(3), 451–460. doi: 10.1016/j.emj.2013.07.009
Elkington, J. (1999). Triple bottom line revolution: reporting for the third millennium. Australian CPA, 69(11), pp. 75–79.
Farny, S. (2016), *Revisiting the nexus of entrepreneurship and sustainability – towards an affective and interactive framework for the sustainability entrepreneurship journey*, PhD Thesis. Aalto University
Fischer, E. M. , Reuber, A. R. , and Dyke, L. S. (1993). A theoretical overview and extension of research on sex, gender, and entrepreneurship. Journal of Business Venturing, 8(2), 151–168. doi: 10.1016/0883-9026(93)90017-y
Global Reporting Index (GRI). (2019). Retrieved from https://www.globalreporting.org/standards/gri-standards-download-center/
Gundry, L. K. , Kickul, J. R. , and Iakovleva, T. (2014). Women-owned family businesses in transitional economies: key influences on firm innovativeness and sustainability. Journal of Innovation and Entrepreneurship, 3, 8. doi: 10.1186/2192-5372-3-8
Gundry, L. K. , Miriam, B.-Y. , and Posig, M. (2002). Contemporary perspectives on women’s entrepreneurship: a review and strategic recommendations. Journal of Enterprising Culture, 10(1), 67–86. doi: 10.1142/s0218495802000141
Holienka, M. , Jančovičová, Z. , and Kovačičová, Z. (2016). Drivers of women entrepreneurship in Visegrad countries: gem evidence. Procedia - Social and Behavioral Sciences, 220, 124–133. doi: 10.1016/j.sbspro.2016.05.476
Jamali, D. (2009). Constraints and opportunities facing women entrepreneurs in developing countries. Gender in Management: An International Journal, 24(4), 232–251. doi: 10.1108/17542410910961532
Jennings, J. E. , and Brush, C. G. (2013). Research on women entrepreneurs: challenges to (and from) the broader entrepreneurship literature? The Academy of Management Annals, 7(1), 663–715. doi: 10.1080/19416520.2013.782190
Karmarkar, Y. , Chabra, M. , & Deshpande, A. (2014). Entrepreneurial leadership style(s): A taxonomic review. *Annual Research Journal of Symbiosis Centre for Management* Studies, 2(1), 156–189.
Kaur, A. and Bhardwaj, R. (2019). *Sustainable supply chain through greater customer engagement*, Green Practices and Strategies in Supply Chain Management, Syed Abdul Rehman Khan, IntechOpen, doi: 10.5772/intechopen.82485. Retrieved from: https://www.intechopen.com/books/green-practices-and-strategies-in-supply-chain-management/sustainable-supply-chain-through-greater-customer-engagement
Kaur, A. , and Sharma, P.C. , (2016). Global organisations and SME in India: a comparative study of sustainability initiatives. Journal of Sustainable Development, 9(3), 65–76. doi: 10.5539/jsd.v9n3p65

Kaur, A. , and Sharma, P. C. (2017). Social sustainability in supply chain decisions: Indian manufacturers. Environment, Development and Sustainability, 20(4), 1707–1721. doi: 10.1007/s10668-017-9961-5

Kickul, J. R. , Gundry, L. K. , and Sampson, S. D. (2007). Women entrepreneurs preparing for growth: the influence of social capital and training on resource acquisition. Journal of Small Business and Entrepreneurship, 20(2), 169–181.

Kumar, R. , & Chhabra, M. (2021). Decoding scale and size of the acquired and the acquirer: An empirical analysis. International Journal of Management, 11(12), 2020.

Lepeley, M. T. , Pizarro, O ., and Mandakovic, V. (2015) Women entrepreneurs in Chile: Three decades of challenges and lessons in innovation and business sustainability. In: Ramadani, V. , Gërguri-Rashiti, S. , and Fayolle, A. (eds), Female entrepreneurship in transition economies. Palgrave Macmillan, London

Muñoz, P ., and Cohen, B. (2017). Entrepreneurial narratives in sustainable venturing: beyond people, profit and planet. Journal of Small Business Management. doi: 10.1111/jsbm.12395

Muske, G. , Woods, M. , Swinney, J. , and Khoo, C-L. (2007). Small businesses and the community: their role and importance within a state's economy. Journal of Extension, 45 (1). Retrieved from https://www.joe.org/joe/2007february/rb4.php

Narayan, L. (2018). Why do we see fewer women in leadership roles than men? Retrieved from https://www.hrkatha.com/research/why-do-we-see-fewer-women-in-leadership-roles-than-men/

Orobia, L. A. , Tusiime, I. , Mwesigwa, R. , and Ssekiziyivu, B. (2020). Entrepreneurial framework conditions and business sustainability among the youth and women entrepreneurs. Asia Pacific Journal of Innovation and Entrepreneurship, 14(1), 60–75. doi: 10.1108/apjie-07-2019-0059

Prasad, V. K. , Naidu, G. M. , Kinnera Murthy, B. , Winkel, D. E. , and Ehrhardt, K. (2013). Women entrepreneurs and business venture growth: an examination of the influence of human and social capital resources in an Indian context. Journal of Small Business and Entrepreneurship, 26(4), 341–364. doi: 10.1080/08276331.2013.821758

Ramaniac, S. V. , Thutupallia, A. , Medovarszkic, T. , Chattopadhyaya, S , Ravichandranb, V. (2013). Women entrepreneurs in the informal economy: Is formalization the only solution for business sustainability?.UNU-Merit.

SDG 5: Achieve gender equality and empower all women and girls . (2017). Retrieved from http://www.unwomen.org/en/news/in-focus/women-and-the-sdgs/sdg-5-gender-equality

Sehgal, A. , and Khandelwal, P. (2020). Work–family interface of women entrepreneurs: evidence from India. South Asian Journal of Business Studies, 9(3), 411–428. doi: 10.1108/SAJBS-11-2019-0213

Sharma, Y. (2013). Women entrepreneur in India. Journal of Business and Management, 15(3), 9–14 (IOSR-JBM) e-ISSN: 2278-487X, p-ISSN: 2319-7668.

Sreekumar, M. D. , Chhabra, M. , & Yadav, Ruchika. (2018). Productivity in manufacturing industries. International Journal of Innovative Science and Research Technology (IJISRT), 3(10), 634–639.

Thomas, E. , and Magilvy, J. K. (2011). Qualitative rigor or research validity in qualitative research. Journal for Specialists in Pediatric Nursing, 16(2), 151–155. doi: 10.1111/j.1744-6155.2011.00283.x

Vallance, S. , Perkins, H. C. , and Dixon, J. E. (2011). What is social sustainability? A clarification of concepts. Geoforum, 42(3), 342–348. doi: 10.1016/j.geoforum.2011.01.002

Verheul, I. , Stel, A. V. , and Thurik, R. (2006). Explaining female and male entrepreneurship at the country level. Entrepreneurship and Regional Development, 18(2), 151–183.

WCED . (1987). Our common future. Oxford: Oxford University Press

Yadav, V. , and Unni, J. (2016). Women entrepreneurship: research review and future directions. Journal of Global Entrepreneurship Research, 6(12), doi: 10.1186/s40497-016-0055-x

Leveraging on Demographics Insights of Online Shoppers for Netpreneurs

Bhattacherjee, A. (2001). An empirical analysis of the antecedents of electronic commerce service continuance. Decision Support Systems, 32(2), 201–214.

Callegaro, M. , & Yang, Y. (2018). The role of surveys in the era of “Big Data”. In The Palgrave handbook of survey research (pp. 175–192). Palgrave Macmillan, Cham.

Chang, H. H. , & Chen, S. W. (2009). Consumer perception of interface quality, security, and loyalty in electronic commerce. Information & Management, 46(7), 411–417.

Chang, H. H. , & Wang, H. W. (2011). The moderating effect of customer perceived value on online shopping behaviour. Online Information Review, 35(3), 333–359.

Chhabra, M. (2018a). Ecopreneurship as a solution to environmental issues and challenges: State-of-the-art and future perspective. In S. Dahiya (Ed.), Sustainability and digitalization: Present reality and future prospects, Sudha Enterprises, Rewari (Haryana), pp. 35–46.

Chhabra, M. (2018b). Gender gap in “success factors” among entrepreneurs: A study of micro and small enterprises. SEDME (Small Enterprises Development, Management and Extension Journal), 45(2), 1–17.

Gerrard, P. , Cunningham, J. B. , & Devlin, J. F. (2006). Why consumers are not using internet banking: a qualitative study. Journal of Services Marketing, 20(3), 160–168.

Gong, W. , Stump, R. L. , & Maddox, L. M. (2013). Factors influencing consumers’ online shopping in China. Journal of Asia Business Studies, 7(3), 214–230.

Halan, D. (2020), “Impact of COVID-19 on online shopping in India”, available at: https://retail.economictimes.indiatimes.com/re-tales/impact-of-covid-19-on-online-shopping-in-india/4115 (accessed April 10 2020).

Khalifa, M. , & Liu, V. (2007). Online consumer retention: contingent effects of online shopping habit and online shopping experience. European Journal of Information Systems, 16(6), 780–792.

Lian, J. W. , & Yen, D. C. (2014). Online shopping drivers and barriers for older adults: Age and gender differences. Computers in Human Behavior, 37, 133–143.

Liébana-Cabanillas, F. , Sánchez-Fernández, J. , & Muñoz-Leiva, F. (2014). Antecedents of the adoption of the new mobile payment systems: The moderating effect of age. Computers in Human Behavior, 35, 464–478.

Lin, H. F. (2007). Predicting consumer intentions to shop online: An empirical test of competing theories. Electronic Commerce Research and Applications, 6(4), 433–442.

Lipsman, A. , (2019). Global Ecommerce 2019: Ecommerce Continues Strong Gains Amid Global Economic Uncertainty. eMarketer. *Saatavissa (viitattu 8.4.2020):* https://www.emarketer.com/content/global-ecommerce-2019.

Lubis, A. N. (2018). Evaluating the customer preferences of online shopping: demographic factors and online shop application issue. Academy of Strategic Management Journal, 17(2).

Mpinganjira, M. (2014). An investigation of gender differences in shopping orientation: Implications for online retailing. *Readings Book*, 379.

Pantano, E. , Pizzi, G. , Scarpi, D. , & Dennis, C. (2020). Competing during a pandemic? Retailers’ ups and downs during the COVID-19 outbreak. Journal of Business Research. doi: 10.1016/j.jbusres.2020.05.036.

Park, C. H. , & Kim, Y. G. (2003). Identifying key factors affecting consumer purchase behavior in an online shopping context. International Journal of Retail & Distribution Management, 31(1), 16–29.

Richa, D. (2012). Impact of demographic factors of consumers on online shopping behavior: A study of consumers in India. *International Journal of Engineering and Management* Sciences, 3(1), 43–52.

Rodgers, S. , & Harris, M. A. (2003). Gender and e-commerce: An exploratory study. Journal of Advertising Research, 43(3), 322–329.

Schiffman, L.G. , & Kanuk, L.L. (2003). Consumer behavior. New Jersey: Prentice Hall.

Seock, Y. K. , & Bailey, L. R. (2008). The influence of college students’ shopping orientations and gender differences on online information searches and purchase behaviours. International Journal of Consumer Studies, 32(2), 113–121.

Singh, D. , & Chhabra, M. (2020). Attainment of customer’s satisfaction in digital food apps industry through result-oriented management. International Journal of Management (IJM),

11(12), 2527–2543.
Sreekumar, M. D. , Chhabra, M. , & Yadav, R. (2018). Productivity in manufacturing industries. International Journal of Innovative Science and Research Technology (IJISRT), 3(10), 634–639.
Tripathi, S. K. , Chhabra, M. , & Pandey, R. K. (2018). Taming tsunami of data by principles of inventory management. Journal of Business and Management (IOSR-JBM), 20, 1–12.
Van Slyke, C. , Comunale, C. L. , & Belanger, F. (2002). Gender differences in perceptions of web-based shopping. Communications of the ACM, 45(8), 82–86.
Verhoef, P. C. , & Langerak, F. (2001). Possible determinants of consumers' adoption of electronic grocery shopping in the Netherlands. Journal of Retailing and Consumer Services, 8(5), 275–285.
Warshaw, C. (2016). The application of Big Data in surveys to the study of elections, public opinion, and representation.
Wu, S. I. (2003). The relationship between consumer characteristics and attitude toward online shopping. *Marketing Intelligence & Planning*.
Zhou, L. , Dai, L. , & Zhang, D. (2007). Online shopping acceptance model-A critical survey of consumer factors in online shopping. Journal of Electronic Commerce Research, 8(1), 41–62.

Study on the Effectiveness of Social Networks in Persuading Entrepreneurial Initiatives with Reference to College Students in Chennai

Ajjan, H. , Fabian, F. , Tomczyk, D. & Hattab, H. (2015). Social media use to supportentrepreneurship. Journal of Developmental Entrepreneurship, 20 (3), 1–28.
Anwar, I. , & Saleem, I. (2018). Effects of entrepreneurial education on entrepreneurial intention of Indian. International Journal of Research, 5 (12), 2306–2316.
Chhabra, M. (2018). Gender gap in "success factors" among entrepreneurs: A study of micro and small enterprises. SEDME (Small Enterprises Development, Management & Extension Journal), 45 (2), 1–17.
Chhabra, M. , & Goyal, A. P. (2019). Education and entrepreneurial experience WRT female entrepreneurs. International Journal of Research in Humanities, Arts and Literature, 7, 95–110.
Chhabra, M. , & Karmarkar, Y. (2016). Gender gap in entrepreneurship – a study of small and micro enterprises. ZENITH International Journal of Multidisciplinary Research, 6(8), 82–99.
Davis, F. D. (1989). Perceived usefulness, perceived ease of use and user acceptance of information technology. MIS Qtr, 13 (3), 319–340.
Dissanayake, D. (2013). The impact of perceived desirability and perceived feasibility on entrepreneurial intention among undergraduate students in Sri Lanka: An extended model. The Kelaniya Journal of Management, 2, 39–57.
Fishbein, N. & Ajzen, I. (1975). Belief, Attitude Intention and Behavior.Reading, MA: Addison-Wesley.
Gao, S. , Krogstie, J. & Siau, K (2011). Developing an instrument to measure the adoption of mobile services. Mobile Information Systems, 7, 45–67.
Grimaldi, R. , Kenney, M. , Siegel, D. S. & Wright, M. (2011). 30 years after Bayh-Dole reassessing academic entrepreneurship. Research Policy, 40, 1045–1057.
Hair, J. F. et al. (2016). Multivariate Data Analysis.Noida: Pearson.
Hampton, K. N. , Goulet, L. S. , Rainie, L. , & Purcell, K. (2011). Social Networking Sites and Our Lives (Vol. 1). Washington, DC: Pew Internet & American Life Project.
Heuer, A. & Kolvereid, L. (2014). Education in entrepreneurship and theory of planned behaviour.European Journal of Training and Development 38 (6), 506–523.
Jahangir, N. & Begum, N. (2008). The role of perceived usefulness, perceived ease of use, security and privacy and customer attitude to engender customer adapatation in the context of electronic banking. African Journal of Business Management, 2 (1), 32–40.
Karmarkar, Y. , Chabra, M. , & Deshpande, A. (2014). Entrepreneurial leadership style(s): A taxonomic review. Annual Research Journal of Symbiosis Centre for Management Studies, 2(1), 156–189.

Krueger, N. F. Jr. , & Brazeal, D. V. (1994). Entrepreneurial potential and potential entrepreneurs. Entrepreneurship Theory and Practice, 91–104.
Liñán, F. & Chen, Y. W. (2006). Testing the entrepreneurial intention model on a two-country sample. Document de Treball Universitat Autònoma de Barcelona: Departament d'Economia de l'Empresa, 6–7.
Mao, E. & Palvia, P. (2001). Information Technology Acceptance: How much do we know? Seventh Americas Conference Information System. Boston, USA.
Mueller, S. L. , Thomas, A. S. , & Jaeger, A. M. (2002). National entrepreneurial potential: The role of culture, economic development, and political history. Advances in Comparative International Management, 14, 221–257.
Nath, R. , Bhal, K. T. & Kapoor, G. T. (2013). Factors influencing it adoption by bank employees: An extended tam approach. Vikalpa, 38 (4), 84–96.
Park, J. Y. , & Sung, C. S. (2017). Does social media use influence entrepreneurial opportunity? A review of its moderating role.Sustainability, 9 (9), 1593. Retrieved from doi:10.3390/su9091593
Rahman, S. A. , Taghizadeh, S. K. , Ramayah, T. , & Alam, M. (2017). Technology acceptance among micro-entrepreneurs in a marginalized social strata: The case of social innovation in Bangladesh. Technological Forecasting and Social Changes, 118, 1–10.
Shane, S. & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. Academy of Management Review, 25 (1), 217–226.
Singh, D. , & Chhabra, M. (2020). Attainment of customer's satisfaction in digital food apps industry through result-oriented management. International Journal of Management (IJM), 11 (12), 2527–2543.
Sušanj, Z. , Jakopec, A. & Miljković Krečar, I. (2015). Verifying the model predicting the entrepreneurial intention among the students of business and non business orientation. Management, 20 (2), 49–69.
Tripathi, S. K. , Chhabra, M. , & Pandey, R. K. (2018). Taming tsunami of data by principles of inventory management. Journal of Business and Management (IOSR-JBM), 20, 1–12.
Tripathi, S. K. , Kaur, D. A. , Pandey, D. R. , & Chhabra, D. M. (2019). Time to modify operating software (Os), databases (Db) and TCP/IP protocols for data trash elimination, based on user defined shelf life of data. International Journal of Computer Engineering and Technology, 10(1).
Venkatesh, V. , Morris, M.G. , Davis, G.B. & Davis, F.D. , (2001). User acceptance of information technology: Toward a unified view. MIS QuARTERLY, 27 (3), 425–478.
Wright, D. A. (2015). Academic entrepreneurship: time for a rethink? Enterprise Research Centre.

Curbing Inconsistencies Through Financial Bootstrapping

Allen, F. , Chakrabarti, R. , De, S. , Qian, J. , & Qian, M. (2006). *Financing firms in India*. The World Bank.
Alvarado, M. , & Mora-Esquivel, R. (2020). Financial bootstrapping among Costa Rican small businesses: An exploratory study. Tec Empresarial, 14(1), 2–11
Auken, H. E. V. , & Neeley, L. (1996). Evidence of bootstrap financing among small startup firms. Journal of Entrepreneurial and Small Business Finance, 5(3), 235–249.
Bhide, A. (1992). Bootstrap finance: The art of startups. Harvard business review, 70(6),109.
Chhabra, M. (2018). Gender gap in "success factors" among entrepreneurs: A study of micro and small enterprises. SEDME (Small Enterprises Development, Management & Extension Journal), 45(2), 1–17.
Chhabra, M. , Gera, R. , Hassan, R. , & Hasan, S. (2020). An exploratory study of cognitive, social and normative dimensions of female entrepreneurship within transition economies: Evidence from India and Vietnam. Pakistan Journal of Commerce and Social Sciences (PJCSS), 14(4), 1012–1042.
Chhabra, M. , & Goyal, A. P. (2019). Education and entrepreneurial experience WRT female entrepreneurs. International Journal of Research in Humanities, Arts and Literature, 7, 95–110.
Chhabra, M. , & Karmarkar, Y. (2016a). Effect of gender on inception stage of entrepreneurs: Evidence from small and micro enterprises in Indore. SEDME (Small Enterprises Development,

Management & Extension Journal), 43(3), 1–16.
Chhabra, M. , & Karmarkar, Y. (2016b). Gender gap in entrepreneurship – a study of small and micro enterprises. ZENITH International Journal of Multidisciplinary Research, 6(8), 82–99.
Daniels, C. , Herrington, M. , & Kew, P. (2016). Global entrepreneurship monitor 2015/2016: Special report on entrepreneurial finance. London: Global Entrepreneurship Research Association. Available at: https://www.gemconsortium.org/report (Accessed on 25 November, 2020).
Ebben, J. , & Johnson, A. (2006). Bootstrapping in small firms: An empirical analysis of change over time. Journal of Business Venturing, 21(6), 851–865.
Helleboogh, D. , Laveren, E. , & Lybaert, N. (2010). Financial bootstrapping use in new family ventures and the impact on ventures growth-in: long term perspectives on family business: Theory, practice, policy. In *10th Annual IFERA World Family Business Research Conference* , Lancaster, UK.(6–9 July 2010) (pp. 112–113).
Khan, E. A. , & Quaddus, M. (2017). What factors make micro-firms sustainable? A proposal for a model. The Journal of Developing Areas, 51(4), 255–269.
Kumar, R. , & Chhabra, M. (2021). Decoding scale and size of the acquired and the acquirer: An empirical analysis. International Journal of Management, 11(12), 2020.
Kumar, S. , & Rao, P. (2016). Financing patterns of SMEs in India during 2006 to 2013 – an empirical analysis. Journal of Small Business & Entrepreneurship, 28(2), 97–131.
Majumdar, R. (2020). Finding new frontiers: The challenges of early-stage Indian entrepreneurs in accessing finance in an evolving startup ecosystem. In Entrepreneurial Finance in Emerging Markets (pp. 193–211). Palgrave Macmillan, Cham.
Neeley, L. (2003). Entrepreneurs and bootstrap finance. *Management Department, Northern Illinois University*.
Reserve Bank of India .(2019). Pilot Survey on Indian Startup Sector - Major Findings. Available at: https://www.rbi.org.in/Scripts/PublicationReportDetails.aspx?UrlPage=&ID=956 (Accessed on 25 August 2020).
Schinck, A. , & Sarkar, S. (2012). Financial Bootstrapping: A critical entrepreneurship skill. Centro de Estudos e Formação Avançadaem Gestão e Economia da Universidade de Aveiro, 20, 1–24.
Schofield, R. M. (2015). Relationship between bootstrap financing, number of employees, and small business success. *Walden Dissertations and Doctoral Studies*. 471. https://scholarworks.waldenu.edu/dissertations/471
Shripria, V. , Srividya, V. , & Thenmozhi, M. (2020). A study on bootstrapping financing methods employed in Indian small and medium scale enterprises. TEST Engineering and Management, 83, 19243–19254.
Startup India . (2018).States' Startup Ranking 2018. Retrieved from https://www.startupindia.gov.in/content/dam/investindia/Templates/public/State%20Startup%20Ranking%20Report%202018.pdf.
The IBM Institute for Business Value . 2016. Entrepreneurial India: How startups redefine India's economic growth, in collaboration with Oxford Economics. Page 3. https://d1iydh3qrygeij.cloudfront.net/Media/Default/New%20release%20images%20and%20reports/Entrepreneurial%20India%20IBV%20mid%202016.pdf
The National Association of Software and Services Companies (NASSCOM) . 2017. Indian startup ecosystem, Traversing the maturity cycle – Edition 2017. Retrieved from https://www.nasscom.in/knowledge-center/publications/indian-start-ecosystem-%E2%80%93-traversing-maturity-cycle-edition-2017
The National Association of Software and Services Companies (NASSCOM) . 2019. Indian tech startup ecosystem, Leading tech in the 20s – Edition 2019. Retrieved from https://www.nasscom.in/knowledge-center/publications/indian-tech-start-ecosystem-leading-tech-20s
The National Association of Software and Services Companies (NASSCOM) and Zinnov . 2018. Indian tech startup ecosystem: Approaching escape velocity – Edition 2018. Retrieved from https://www.nasscom.in/knowledge-center/publications/indian-tech-start-ecosystem-2018-approaching-escape-velocity
Van Auken, H. E. , Neeley, L. , & Dean, A. (1998). The impact of planning on the acquisition of startup capital. In *Proceedings of USASBE 12th Annual Conference, Clearwater, FA* (pp. 248–259).

Van Osnabrugge, M. , & Robinson, R. J. (2000). Angel investing: Matching startup funds with startup companies – the guide for entrepreneurs and individual investors. John Wiley & Sons.
Vanacker, T. , Manigart, S. , Meuleman, M. , & Sels, L. (2011). Bootstrapping as a resource dependence management strategy and its association with startup growth (No. 11/740). Ghent University, Faculty of Economics and Business Administration.
Vesper, K. H. (1990). *New venture strategies*. University of Illinois at Urbana-Champaign's Academy for entrepreneurial leadership historical research reference in entrepreneurship.
Whittemore, M. (1993). You can overcome financing hurdles. Nation's Business, 81(10), 57–60.
Williams, C. C. , & Shahid, M. S. (2016). Informal entrepreneurship and institutional theory: Explaining the varying degrees of (in) formalization of entrepreneurs in Pakistan. Entrepreneurship and Regional Development, 28(1–2), 1–25.
Winborg, J. (2009). Use of financial bootstrapping in new businesses: a question of last resort? Venture Capital, 11(1), 71–83.
Winborg, J. , & Landstrom, H. (2001). Financial bootstrapping in small businesses: Examining small business managers' resource acquisition behaviors. Journal of Business Venturing, 16(3),235–254.

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Acs, Z. J. , & Audretsch, D. B. (2005). Entrepreneurship, innovation, and technological change (Vol. 2105). Hanover: Now Publishers Inc.
Acs, Z. , Desai, S. , & Hessels, J. (2008). Entrepreneurship, economic development and institutions. Small Business Economics, 31(3), 219–234. Retrieved December 1, 2020, from http://www.jstor.org/stable/40650942
Adenutsi, D. E. (2009). *Entrepreneurship, job creation, income empowerment and poverty reduction in low-income economies*. MPRA Paper 29569, University Library of Munich, Germany.
Akpan, I. J. , Soopramanien, D. , & Kwak, D. H. (2020a). Cutting-edge technologies for small business and innovation in the era of COVID-19 global health pandemic. Journal of Small Business and Entrepreneurship, 1–11. https://doi.org/10.1080/08276331.2020.1799294
Akpan, I. J. , Udoh, E. A. P. , & Adebisi, B. (2020b). Small business awareness and adoption of state-of-the-art technologies in emerging and developing markets, and lessons from the COVID-19 pandemic. Journal of Small Business and Entrepreneurship, 1–18. https://doi.org/10.1080/08276331.2020.1799294
Assessment, O. I. E . (2020). Coronavirus: The world economy at risk. *Organisation for Economic Co-operation and Development, France*.
Bansal, R. , Burman, A. , Chaudhuri, R. , Prabhakar, T. , Raghavan, S. , & Rai, S. (2020). Recovery, Resilience, and Adaptation: India From 2020 to 2030 (pp. 12–16, Rep.). Carnegie Endowment for International Peace. doi: 10.2307/resrep26178.6
Baumol, W. J. , Strom, R. J. , & Sheshinski, E. (2007). Entrepreneurship, innovation, and the growth mechanism of the free-enterprise economies. Princeton, NJ: Princeton University Press.
Bessant, J. , & Tidd, J. (2007). Innovation and entrepreneurship. Chichester, UK: John Wiley& Sons.
Brannen, S. , Ahmed, H. , & Newton, H. (2020). *COVID-19 reshapes the future*(Rep.). Center for Strategic and International Studies (CSIS). doi: 10.2307/resrep25198
Brouwer, M. (2000). Entrepreneurship and uncertainty: innovation and competition among the many. Small Business Economics, 15(2), 149–160.
Bruce, F. , Malcolm, J. , & O'Neill, S. (2017). Big data: Understanding how creative organisations create and sustain their networks. The Design Journal, 20(sup 1), S435–S443.
Bruton, G. D. , Ahlstrom, D. , & Si, S. (2015). Entrepreneurship, poverty, and Asia: Moving beyond subsistence entrepreneurship. Asia Pacific Journal of Management, 32(1), 1–22.
Caballero-Anthony, M. , Teng, P. , & Montesclaros, J. M. L. (2020). COVID-19 and Food Security in Asia: How Prepared Are We?. NTS Insight, No. IN20-03. Singapore: RSIS Centre for NonTraditional Security Studies (NTS Centre),Nanyang Technological University, Singapore.
Center, S. , Bick, A. , Sluga, G. , Ehrhardt, A. , Gorman, D. , McKenzie, F. , … King, I. (2020). After disruption: Historical perspectives on the future of international order (pp. 1–3, Rep.) (

Center, S. & Bates, E. , Eds.). Center for Strategic and International Studies (CSIS). doi: 10.2307/resrep26045.3
Chhabra, M. , Gera, R. , Hassan, R. , & Hasan, S. (2020). An exploratory study of cognitive, social and normative dimensions of female entrepreneurship within transition economies: Evidence from India and Vietnam. Pakistan Journal of Commerce and Social Sciences (PJCSS), 14(4), 1012–1042.
Chhabra, M. , & Karmarkar, Y. (2016a). Gender gap in entrepreneurship – a study of small and micro enterprises. ZENITH International Journal of Multidisciplinary Research, 6(8), 82–99.
Chell, E. , & Baines, S. (2000). Networking, entrepreneurship and microbusiness behaviour. Entrepreneurship & Regional Development, 12(3), 195–215.
Chhabra, M. (2018a). Ecopreneurship as a solution to environmental issues and challenges: State-of-the-art and future perspective. In S. Dahiya (Ed.), Sustainability and digitalization: Present reality and future prospects, Sudha Enterprises, Rewari (Haryana), pp. 35–46.
Chhabra, M. (2018b). Gender gap in “success factors” among entrepreneurs: A study of micro and small enterprises. SEDME (Small Enterprises Development, Management and Extension Journal), 45(2), 1–17.
Chhabra, M. , & Karmarkar, Y. (2016b). Effect of gender on inception stage of entrepreneurs: Evidence from small and micro enterprises in Indore. SEDME (Small Enterprises Development, Management & Extension Journal), 43(3), 1–16.
Chepurenko, A. (2010). Small entrepreneurship and entrepreneurial activity of population in Russia in the context of the economic transformation. Historical Social Research/HistorischeSozialforschung, 35(2), 301–319.
Copeland, P. , & Savoia, A. (2011). Entrepreneurial innovation at Google.
De Ávila, M. , Miranda, L. , Bozmoski, M. , Sadurní, D. , Bolaños, E. , & Paiz, S. (2020). *Central America economic reactivation in a COVID-19 World: Finding sustainable opportunities in uncertain times* (pp. 16–17, Rep.). Atlantic Council. doi: 10.2307/resrep26649.6
Dhaliwal, A. (2016). Role of entrepreneurship in economic development. International Journal of scientific research and management, 4(6), 4262–4269.
Estrin, S. , Meyer, K. E. , & Bytchkova, M. (2006). Entrepreneurship in transition economies. The Oxford Handbook of E, 693–725.
Fadaee, A. , & Abd Alzahrh, H. O. (2014). Explaining the relationship between creativity, innovation and entrepreneurship. International Journal of Economy, Management and Social Sciences, 3(1), 1–4.
Fitzgerald, M. A. , & Muske, G. (2016). Family businesses and community development: the role of small business owners and entrepreneurs. Community Development, 47(4), 412–430.
Fortunato, M. W. , & Alter, T. (2015). Community entrepreneurship development: an introduction. Community Development, 46(5), 444–455.
Gerritsen, S. , Egli, V. , Roy, R. , Haszard, J. , Backer, C. D. , Teunissen, L. , … & TeMorenga, L. (2020). Seven weeks of home-cooked meals: changes to New Zealanders’ grocery shopping, cooking and eating during the COVID-19 lockdown. Journalof the Royal Society of New Zealand, 51(supp. 1), 1–19.
Gerstel, D. , & Goodman, M. (2020). From industrial policy to innovation strategy: Lessons from Japan, Europe, and the United States (pp. 1–4, Rep.). Center for Strategic and International Studies (CSIS). doi: 10.2307/resrep26046.4
González-Pernía, J. L. , Jung, A. , & Peña, I. (2015). Innovation-driven entrepreneurship in developing economies. Entrepreneurship and Regional Development, 27(9–10), 555–573.
Green, J. F. (2017). Policy entrepreneurship in climate governance: Toward a comparative approach. Environment and Planning C: Politics and Space, 35(8), 1471–1482.
Hansen, B. (2019). The digital revolution–digital entrepreneurship and transformation in Beijing. Small Enterprise Research, 26(1), 36–54.
Kahn, M. (2016). Mitigating South Africa’s HIV epidemic: The interplay of social entrepreneurship and the Innovation System. Minerva, 54(2), 129–150. Retrieved December 1, 2020, from http://www.jstor.org/stable/26302066
Karmarkar, Y. , Chabra, M. , & Deshpande, A. (2014). Entrepreneurial leadership style(s): A taxonomic review. *Annual Research Journal of Symbiosis Centre for Management* Studies, 2(1), 156–189.
Karra, N. , Phillips, N. , & Tracey, P. (2008). Building the born global firm: developing entrepreneurial capabilities for international new venture success. Long Range Planning, 41(4),

440–458.
Kefela, G. T. (2011). Entrepreneurship has emerged as the economic engine and social development throughout the world. Journal of Asian Business Strategy, 1(4), 45.
Kerr, W. R. (2013). *US high-skilled immigration, innovation, and entrepreneurship: Empirical approaches and evidence* (No. w19377). National Bureau of Economic Research.
Kressel, H. , & Lento, T. V. (2012). Entrepreneurship in the global economy: Engine for economic growth. Cambridge: Cambridge University Press.
Kshetri, N. (2009). Entrepreneurship in post-socialist economies: A typology and institutional contexts for market entrepreneurship. Journal of International Entrepreneurship, 7(3), 236–259.
Lazonick, W. (2008). *Entrepreneurial ventures and the developmental state: Lessons from the advanced economies* (No. 2008/01). WIDER Discussion Paper.
Lewis, C. (2019). Structural changes to maintain a strong development path in Indonesia. Journal of Development Perspectives, 3(1–2), 111–136. doi: 10.5325/jdevepers.3.1-2.0111
Liguori, E. , & Bendickson, J. S. (2020). Rising to the challenge: Entrepreneurship ecosystems and SDG success. Journal of the International Council for Small Business, 1(3–4), 118–125.
Liguori, E. W. , & Pittz, T. G. (2020). Strategies for small business: Surviving and thriving in the era of COVID-19. Journal of the International Council for Small Business, 1(2), 106–110.
Lubberink, R. , Blok, V. , van Ophem, J. , van der Velde, G. , & Omta, O. (2018). Innovation for society: Towards a typology of developing innovations by social entrepreneurs. Journal of Social Entrepreneurship, 9(1), 52–78.
Martínez-Fierro, S. , Biedma-Ferrer, J. , & Ruiz-Navarro, J. (2016). Entrepreneurship and strategies for economic development. Small Business Economics, 47(4), 835–851. Retrieved December 1, 2020, from http://www.jstor.org/stable/26154675
McMillan, J. (2004). A flexible economy? Entrepreneurship and productivity in New Zealand.
McMillan, J. , & Woodruff, C. (2002). The Central Role of Entrepreneurs in Transition Economies. The Journal of Economic Perspectives, 16(3), 153–170. Retrieved November 26, 2020, from http://www.jstor.org/stable/3216955
Meester, J. , & Ooijens, M. (2020). (Rep.). Clingendael Institute. doi: 10.2307/resrep25670
Miel, J. (2020). The post-COVID-19 economic recovery: U.S.-Turkey commercial ties that bind. Insight Turkey,22(2), 33–52. doi: 10.2307/26918121
Momani, B. (2017). Entrepreneurship: An engine for job creation and inclusive growth in the Arab world
Naudé, W. (2010). Entrepreneurship, Developing Countries, and Development Economics: New Approaches and Insights. Small Business Economics, 34(1), 1–12. Retrieved December 1, 2020, fromhttp://www.jstor.org/stable/40540452
Obschonka, M. , & Audretsch, D. B. (2019). Artificial intelligence and big data in entrepreneurship: A new era has begun. Small Business Economics, 1–11.
Okpara, F. O. (2007). The value of creativity and innovation in entrepreneurship. Journal of Asia entrepreneurship and sustainability, 3(2), 1
Olayide, O. E. (2020). Policy Milieu for Combatting COVID-19 and Sustainability of African Economies. In P. Carmody , G. McCann , C. Colleran , & C. O'Halloran (Eds.), COVID-19 in the Global South (pp. 75–83). Bristol: Bristol University Press.
Ovaska, T. , & Sobel, R. S. (2005). Entrepreneurship in post-socialist economies. Journal of Private Enterprise, 21(1), 8–28
Pathak, S. , & Muralidharan, E. (2018). Economic inequality and social entrepreneurship. Business & Society, 57(6), 1150–1190.
Planko, J. , Cramer, J. , Hekkert, M. P. , & Chappin, M. M. (2017). Combining the technological innovation systems framework with the entrepreneurs' perspective on innovation. Technology Analysis & Strategic Management, 29(6), 614–625.
Quadrini, V. (1999). The importance of entrepreneurship for wealth concentration and mobility. Review of Income and Wealth, 45(1), 1–19.
Ramadani, V. , Gërguri-Rashiti, S. , & Fayolle, A. (Eds.). (2015). Female entrepreneurship in transition economies: Trends and challenges. UK: Palgrave Macmillan.
Ratten, V. (2020). Cultural, lifestyle, and social entrepreneurship. Journal of Small Business and Entrepreneurship, 1–8. https://www.tandfonline.com/doi/full/10.1080/08276331.2020.1789933
Revel, B. (2020). Turkey's refugee resilience: Expanding and improving solutions for the economic inclusion of Syrians in Turkey (pp. 17–23, Rep.). Atlantic Council. doi: 10.2307/resrep26040.7

Rowley, C. (2020). Big data, innovation and entrepreneurship in the Asia Pacific: examples and international comparisons. *Asia Pacific Business Review*. Published online. https://doi.org/10.1080/13602381.2020.1787710

Schramm, C. J. (2004). Building entrepreneurial economies. Foreign Affairs, 83(4) (July–August), 104–115.

Si, S. , Ahlstrom, D. , Wei, J. , & Cullen, J. (2020). Business, entrepreneurship and innovation toward poverty reduction. Entrepreneurship and Regional Development, 32(1–2), 1–20.

Soete, B. , & Stephan, A. (2004). Introduction: entrepreneurship, innovation and growth. Industry and Innovation, 11(3), 161–165.

Toma, S. G. , Grigore, A. M. , & Marinescu, P. (2014). Economic development and entrepreneurship. Procedia Economics and Finance, 8(0), 436–443.

Tudy, R. A. (2021). From the corporate world to freelancing: the phenomenon of working from home in the Philippines. Community, Work & Family, 24(1) 77–92.

Tyrie, L. (2020). (Rep.). Institute for Public Policy Research (IPPR). doi: 10.2307/resrep25699

Ulvenblad, P. , & Cederholm Björklund, J. (2018). A leadership development programme for agricultural entrepreneurs in Sweden. The Journal of Agricultural Education and Extension, 24(4), 327–343.

von Bloh, J. , Broekel, T. , Özgun, B. et al. (2020). New(s) data for entrepreneurship research? An innovative approach to use Big Data on media coverage. Small Bus Econ 55, 673–694. https://doi.org/10.1007/s11187-019-00209-x

Vuorio, A. M. , Puumalainen, K. , & Fellnhofer, K. (2018). Drivers of entrepreneurial intentions in sustainable entrepreneurship. International Journal of Entrepreneurial Behavior and Research, 24(2), 359–381.

Youssef, A. B. , Boubaker, S. , & Omri, A. (2018). Entrepreneurship and sustainability: The need for innovative and institutional solutions. Technological Forecasting and Social Change, 129, 232–241.

Zeng, J. (2018). Fostering path of ecological sustainable entrepreneurship within big data network system. International Entrepreneurship and Management Journal, 14(1), 79–95. doi: 10.1007/s11365-017-0466-3

Babah Daouda, F. , Ingenbleek, P. T. , & van Trijp, H. C. (2016). Step-change: Micro-entrepreneurs' entry into the middle-class market. Journal of African Business, 17(2), 129–147.

Babajide, A. , Lawal, A. , Asaleye, A. , Okafor, T. , & Osuma, G. (2020). Financial stability and entrepreneurship development in sub-Sahara Africa: Implications for sustainable development goals. Cogent Social Sciences, 6(1), 1798330. https://doi.org/10.1080/23311886.2020.1798330

Bass, A. E. (2017). Identity discovery and verification in artist-entrepreneurs: An active learning exercise. Organization Management Journal, 14(2), 90–103.

Chandra, Y. , & Paras, A. (2020). Social entrepreneurship in the context of disaster recovery: Organizing for public value creation. Public Management Review, 1–22. https://doi.org/10.1080/14719037.2020.1775282

Choi, Y. , & Chang, S. (2020). The effect of social entrepreneurs' human capital on and firm performance: The moderating role of specific human capital. Cogent Business & Management, 7(1), 1785779. https://doi.org/10.1080/23311975.2020.1785779

Cinnamon, J. (2020). Data inequalities and why they matter for development. Information Technology for Development, 26(2), 214–233.

Duffin, E. (2020, June 26). Topic: COVID-19: Impact on the global economy. Retrieved August 13, 2020, from https://www.statista.com/topics/6139/covid-19-impact-on-the-global-economy/

Ferdousi, F. (2015). Impact of microfinance on sustainable entrepreneurship development. Development Studies Research, 2(1), 51–63.

Grillitsch, M. (2019). Following or breaking regional development paths: on the role and capability of the innovative entrepreneur. Regional Studies, 53(5), 681–691.

Grüner, H. , & Neuberger, L. (2006). Entrepreneurs' education: Critical areas for the pedagogic-didactic agenda and beyond. Journal of Business Economics and Management, 7(4), 163–170.

Horst, S. O. , Järventie-Thesleff, R. , & Perez-Latre, F. J. (2020). Entrepreneurial identity development through digital media. Journal of Media Business Studies, 17(2), 87–112.

Jones, L. , Palumbo, D. , & Brown, D. (2020, June 30). Coronavirus: A visual guide to the economic impact. Retrieved August 13, 2020, from https://www.bbc.com/news/business-51706225#:%7E:text=Risk%20of%20recession&text=But%20the%20IMF%20says%20that,Great%20Depression%20of%20the%201930s.&text=Recovery%20in%20big%2C%20services%2D

reliant,to%20be%20a%20slow%20process.
Jurlina Alibegović, D. , Rašić Bakarić, I. , & Slijepčević, S. (2019). Impact assessment of entrepreneurial zones on local economic outcomes. Economic research-Ekonomskaistraživanja, 32(1), 3112–3127.
Kay, C. (2009). Development strategies and rural development: exploring synergies, eradicating poverty. The Journal of Peasant Studies, 36(1), 103–137.
Kearney, C. , & Hisrich, R. D. (2014). Entrepreneurship in developing economies: Transformation, barriers and infrastructure. In Necessity Entrepreneurs. Edward Elgar Publishing.
Khazami, N. , Nefzi, A. , & Jaoudi, M. (2020). The effect of social capital on the development of the social identity of agritourist entrepreneur: A qualitative approach. Cogent Social Sciences, 6(1), 1787680.
Korent, D. , Vuković, K. , & Brčić, R. (2015). Entrepreneurial activity and regional development. Economic research-Ekonomskaistraživanja, 28(1), 939–958.
Mason, T. W. (1984). Entrepreneurs, high technology and economic development new uses for assessment tools. Impact Assessment, 3(4), 47–55.
Qureshi, S. (2020). Why data matters for development? Exploring data justice, micro-entrepreneurship, mobile money and financial inclusion. Information Technology for Development, 26(2).
Shen, Y. , Shen, M. , & Chen, Q. (2016). Measurement of the new economy in China: Big data approach. China Economic Journal, 9(3), 304–316.
Staniewski, M. , & Awruk, K. (2016). Start-up intentions of potential entrepreneurs–the contribution of hope to success. Economic research-Ekonomskaistraživanja, 29(1), 233–249.
Willson, M. , & Leaver, T. (2015). Zynga's FarmVille, social games, and the ethics of big data mining. Communication Research and Practice, 1(2), 147–158.
Yun, J. J. , Won, D. , Park, K. , Yang, J. , & Zhao, X. (2017). Growth of a platform business model as an entrepreneurial ecosystem and its effects on regional development. European Planning Studies, 25(5), 805–826.

Business and Financial Management Sustainability of a Small-Medium Enterprise

Ahmad, A. , Isa, A. S. , Nazeri, N. A. , Ishak, N. F. , Yusof, R. , Rosli, R. H. , & Ghani, Y. A. (2015). Entrepreneurship: A Handbook. Kuala Lumpur: Pearson Malaysia Sdn Bhd.
Ariffin, S. , & Hambali, I. A. (2013). Fundamentals of Entrepreneurship. Selangor: Oxford Fajar Sdn Bhd.
Chhabra, M. (2018). Gender Gap in 'Success Factors' among Entrepreneurs: A Study of Micro and Small Enterprises. SEDME (Small Enterprises Development, Management & Extension Journal), 45(2), 1–17.
Chhabra, M. , Gera, R. , Hassan, R. , & Hasan, S. (2020). An Exploratory Study of Cognitive, Social and Normative Dimensions of Female Entrepreneurship within Transition Economies: Evidence from India and Vietnam. Pakistan Journal of Commerce and Social Sciences (PJCSS), 14(4), 1012–1042.
Chhabra, M. , & Goyal, A. P. (2019). Education and entrepreneurial experience WRT female entrepreneurs. International Journal of Research in Humanities, Arts and Literature, 7, 95–110.
Chhabra, M. , & Karmarkar, Y. (2016a). Effect of Gender on Inception Stage of Entrepreneurs: Evidence from Small and Micro Enterprises in Indore. SEDME (Small Enterprises Development, Management & Extension Journal), 43(3), 1–16.
Chhabra, M. , & Karmarkar, Y. (2016b). Gender Gap in Entrepreneurship – a Study of Small and Micro Enterprises. ZENITH International Journal of Multidisciplinary Research, 6(8), 82–99.
Fincham, R. , & Rhodes, P. S. (2005). Principles of Organizational Behaviour, 4th Edition. New York: Oxford University Press.
Flamholtz, E. G. (1996). Effective Management Control: Theory and Practice. Boston/London/Dordrecht: Kluwer Academic Publisher.

Longenecker, J. , Petty, J. , Palich, L. , & Hoy, F. (2011). Small Business Management: Launching and Growing Entrepreneurial Ventures, 17th Edition. Andover, Hampshire: Cengage Learning.
Palich, L. , Hoy, F. , Longenecker, J. G. , & Petty, J. (2013). Small Business Management. Florence: Cengage Learning, Inc.
Patterson, C. (2010). Business Briefs: Business Theory Made Simple, 1st Edition. Coleman Patterson & Ventus Publishing ApS. Bookboon.cm
Quinn, S. (2010). Management Basics. Susan Quinn & Ventus Publishing. Bookboon.com
Robbins, S. P. , & Coulter, M. A. (2016). Management, 13th Edition, Pearson.
Shah, S. H. , & Ali, A. R. (2010). Enterpreneurship, 2nd Edition. Selangor: Oxford Fajar.
Singh, D. , & Chhabra, M. (2020). Attainment of Customer's Satisfaction in Digital Food Apps Industry Through Result-Oriented Management. International Journal of Management (IJM), 11(12), 2527–2543.
Strydom, J. , Jerome Beer, A. D. , Holtzhausen, M. , Steenkamp, R. , Rudansky-Kloppers, S. , & Kara, M. (2012). Principles of Business Management, 2nd Edition. Goodwood, South Africa: Oxford University Press.
Weihrich, H. , & Koontz, H. (2005). Management: A Global Perspective. Singapore: McGraw-Hill.
Wren, D. A. (1994). The Evolution of Management Thought, 4th Edition. New York: John Wiley & Sons, Inc.
Yusof, A. A. , Perumal, S. , & Pangil, F. (2005). Principles of Entrepreneurship. Petaling Jaya, Selangor Malaysia: Pearson/Prentice Hall.
Zimmerer, T. W. , & Scarborough, N. M. (2005). Essentials of Entrepreneurship and Small Business Management, 4th Edition. USA: Pearson Education.

Sustainable Enterprise Development

Acs, Z. J. , Desai, S. , & Hessels, J. (2008). Entrepreneurship, economic development and institutions. Small Business Economics, 31(3), 219–234.
Al Mamun, A. , Muniady, R. , Fazal, S. A. , & Malarvizhi, C. A. (2019). Micro-enterprise development training and entrepreneurial competencies among low-income households in Malaysia. Asia Pacific Journal of Innovation and Entrepreneurship, 13(3), 354–366.
Aragón-Sánchez, A. , Barba-Aragón, I. , & Sanz-Valle, R. (2003). Effects of training on business results. The International Journal of Human Resource Management, 14(6), 956–980.
Baker, S. , Bloom, N. , Davis, S. , & Terry, S. (2020). COVID-induced economic uncertainty and its consequences. *VoxEU. org*, *13*.
Bandiera, O. , Burgess, R. , Guleschi, S. , Rasul, I. , & Suliman, M. (2012, March). *Can entry-level entrepreneurship transform the economic lives of the poor? Paper originally presented at the Poverty and Applied Micro Seminar Series*, World Bank, Washington, DC, March (Vol. 21).
Bechard, J. P. , & Toulouse, J. M. (1998). Validation of a didactic model for the analysis of training objectives in entrepreneurship. Journal of Business Venturing, 13(4), 317–332.
Bell, B. S. , Tannenbaum, S. I. , Ford, J. K. , Noe, R. A. , & Kraiger, K. (2017). 100 years of training and development research: What we know and where we should go. Journal of Applied Psychology, 102(3), 305.
Birchall, D. , & Giambona, G. (2007). SME manager development in virtual learning communities and the role of trust: A conceptual study. Human Resource Development International, 10(2), 187–202.
Bloom, N. , Draca, M. , & Van Reenen, J. (2016). Trade induced technical change? The impact of Chinese imports on innovation, IT and productivity. The Review of Economic Studies, 83(1), 87–117.
Bruque, S. , & Moyano, J. (2007). Organisational determinants of information technology adoption and implementation in SMEs: The case of family and cooperative firms. Technovation, 27(5), 241–253.
Cassell, C. , Nadin, S. , Gray, M. , & Clegg, C. (2002). Exploring human resource management practices in small and medium sized enterprises. Personnel Review, 31(6), 671–692.

Chhabra, M. (2018a). Ecopreneurship as a solution to environmental issues and challenges: State-of-the-art and future perspective. In S. Dahiya (Ed.), Sustainability and digitalization: Present reality and future prospects, pp. 35–46. Rewari (Haryana): Sudha Enterprises.

Chhabra, M. (2018b). Gender gap in “success factors” among entrepreneurs: A study of micro and small enterprises. SEDME (Small Enterprises Development, Management and Extension Journal), 45(2), 1–17.

Chhabra, M. , Gera, R. , Hassan, R. , & Hasan, S. (2020). An exploratory study of cognitive, social and normative dimensions of female entrepreneurship within transition economies: Evidence from India and Vietnam. Pakistan Journal of Commerce and Social Sciences (PJCSS), 14(4), 1012–1042.

Chhabra, M. , & Goyal, A. P. (2019). Education and entrepreneurial experience WRT female entrepreneurs. International Journal of Research in Humanities, Arts and Literature, 7, 95–110.

Chhabra, M. , & Karmarkar, Y. (2016a). Effect of gender on inception stage of entrepreneurs: Evidence from small and micro enterprises in Indore. SEDME (Small Enterprises Development, Management & Extension Journal), 43(3), 1–16.

Chhabra, M. , & Karmarkar, Y. (2016b). Gender gap in entrepreneurship – a study of small and micro enterprises. ZENITH International Journal of Multidisciplinary Research, 6(8), 82–99.

Chi, N. W. , Wu, C. Y. , & Lin, C. Y. Y. (2008). Does training facilitate SME’s performance? The International Journal of Human Resource Management, 19(10), 1962–1975.

Frese, M. (2009). Toward a psychology of entrepreneurship—an action theory perspective. Foundations and Trends in Entrepreneurship, 5, 437–496.

Frese, M. , & Keith, N. (2015). Action errors, error management, and learning in organizations. Annual Review of Psychology, 66, 661–687.

Gibson, S. K. (2005). Whose best interests are served? The distinction between mentoring and support. Advances in Developing Human Resources, 7(4), 470–488.

Glaub, M. , & Frese, M. (2011). A critical review of the effects of entrepreneurship training in developing countries. Enterprise Development and Microfinance Journal, 22(4), 335.

Hasan, A. (2020). How companies are helping employees in response to COVID19. *People Matters* Retrieved from https://www.peoplemattersglobal.com/article/c-suite/how-companies-are-helping-employees-in-response-to-covid-19-25301

Imperatives, S. (1987). Report of the World Commission on Environment and Development: Our common future. UN. Retrieved from http://www.un-documents.net/our-common-future.pdf

Jennings, P. , & Beaver, G. (1997). The performance and competitive advantage of small firms: a management perspective. International Small Business Journal, 15(2), 63–75.

Jones, P. , Beynon, M. J. , Pickernell, D. , & Packham, G. (2013). Evaluating the impact of different training methods on SME business performance. Environment and Planning C: Government and Policy, 31(1), 56–81.

Kachkar, O. A. (2019). Refugee entrepreneurship: empirical quantitative evidence on microenterprises in refugee camps in Turkey. Journal of Immigrant and Refugee Studies, 17(3), 333–352.

Kane, G. C. , Palmer, D. , Phillips, A. N. , Kiron, D. , & Buckley, N. (2015). Strategy, not technology, drives digital transformation. MIT Sloan Management Review and Deloitte University Press, 14(1–25).

Karmarkar, Y. , Chabra, M. , & Deshpande, A. (2014). Entrepreneurial leadership style(s): A taxonomic review. Annual Research Journal of Symbiosis Centre for Management Studies, 2(1), 156–189.

Kleis, L. , Chwelos, P. , Ramirez, R. V. , & Cockburn, I. (2012). Information technology and intangible output: The impact of IT investment on innovation productivity. Information Systems Research, 23(1), 42–59.

Konings, J. , & Vanormelingen, S. (2015). The impact of training on productivity and wages: firm-level evidence. Review of Economics and Statistics, 97(2), 485–497.

Kotey, B. , & Folker, C. (2007). Employee training in SMEs: Effect of size and firm type – family and nonfamily. Journal of Small Business Management, 45(2), 214–238.

Kraiger, K. (2014). Looking back and looking forward: Trends in training and development research. Human Resource Development Quarterly, 25(4), 401–408.

Kumar, R. , & Chhabra, M. (2021). Decoding scale and size of the acquired and the acquirer: An empirical analysis. International Journal of Management, 11(12), 2020.

McCloskey, D. N. (2017). Bourgeois equality: How ideas, not capital or institutions, enriched the world. University of Chicago Press.
Miranda, A. T. , & Miranda, J. L. F. (2018). Status and conditions of small-and medium-sized enterprises as predictors in empowering rural communities in Samar Island, Philippines. Asia Pacific Journal of Innovation and Entrepreneurship, 12(1), 105–119.
Mustafa, M. , Gavin, F. , & Hughes, M. (2018). Contextual determinants of employee entrepreneurial behavior in support of corporate entrepreneurship: a systematic review and research agenda. Journal of Enterprising Culture, 26(3), 285–326.
Ravichandar, H. (2020). What Office 2.0 Serves Well. Accessed from https://www.livemint.com/mint-lounge/business-of-life/what-office-2-0-serves-well-11589223994064.html
Reid, R. S. , & Harris, R. I. (2002). The determinants of training in SMEs in Northern Ireland. *Education+* Training, 44, 443–450. Retrieved from https://msme.gov.in/information-technology-leading-path-indian-msmes-march-champions
Schumpeter, J. (1951). Change and the Entrepreneur. In R. Clemence (Ed.), Essays on Entrepreneurs. Innovation, Business Cycles and the Evolution of Capitalism. London: Transaction Publishers.
Steven, S. , David, A. , Jiang, W. , & John, C. (2020). Business, entrepreneurship and innovation toward poverty reduction. Entrepreneurship and Regional Development, 32:1–2, 1–20.
Sullivan, R. (2000). Entrepreneurial learning and mentoring. International Journal of Entrepreneurial Behavior and Research, 6(3), 160–175.
Sutter, C. , Bruton, G. D. , & Chen, J. (2019). Entrepreneurship as a solution to extreme poverty: A review and future research directions. Journal of Business Venturing, 34(1), 197–214.
Tolstykh, T. , Shmeleva, N. , & Gamidullaeva, L. (2020). Evaluation of circular and integration potentials of innovation ecosystems for industrial sustainability. Sustainability, 12(11), 4574.
Van Praag, C. M. , & Versloot, P. H. (2007). What is the value of entrepreneurship? A review of recent research. Small Business Economics, 29(4), 351–382.
Van Stel, A. (2006). Empirical analysis of entrepreneurship and economic growth (Vol. 13). Springer Science & Business Media.
Wirtenberg, J. , Kelley, L. M. , Lipsky, D. , & Russell, W. G. (Eds.). (2018). The sustainable enterprise fieldbook: Building new bridges. Routledge.
Zainol, N. R. , Al Mamun, A. , Hassan, H. , Rajennd, A. , & Muniady, L. (2017). Examining the effectiveness of micro-enterprise development programs in Malaysia. Journal of International Studies, 10(2), 292–308.
Zhou, Y. , & Ma, X. (2018, September). How today's libraries can help to address information gaps for small-and medium-sized enterprises: Li Ka shing library as an example. In *2018 International Symposium on Humanities and Social Sciences, Management and Education Engineering (HSSMEE 2018)* . Atlantis Press.
Zu, L. (2014). International perspective on sustainable entrepreneurship. In Sustainable Entrepreneurship (pp. 67–100). Berlin, Heidelberg: Springer.